FINAL
SITE INSPECTION PRIORITIZATION REPORT
INTERSTATE METALS
KEARNY, HUDSON COUNTY, NEW JERSEY

CERCLIS ID No.: NJD009717182

VOLUME 1 OF 1

DCN: START-02-F-03633
TDD No.: 02-99-08-0090
EPA Contract No.: 68-W5-0019

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

SEPTEMBER 1999

Prepared by:

Region II Superfund Technical Assessment and Response Team
Roy F. Weston, Inc.
Federal Programs Division
Edison, New Jersey 08837

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WESTON/START - Reviewed and Approved:

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Kathy A. Campbell
START Project Manager

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Dennis J. Foerter, CHMM
START Group Leader

W Scott Butterfield — Date 9/30/99
W. Scott Butterfield, CHMM
Site Assessment Team Leader

SITE SUMMARY

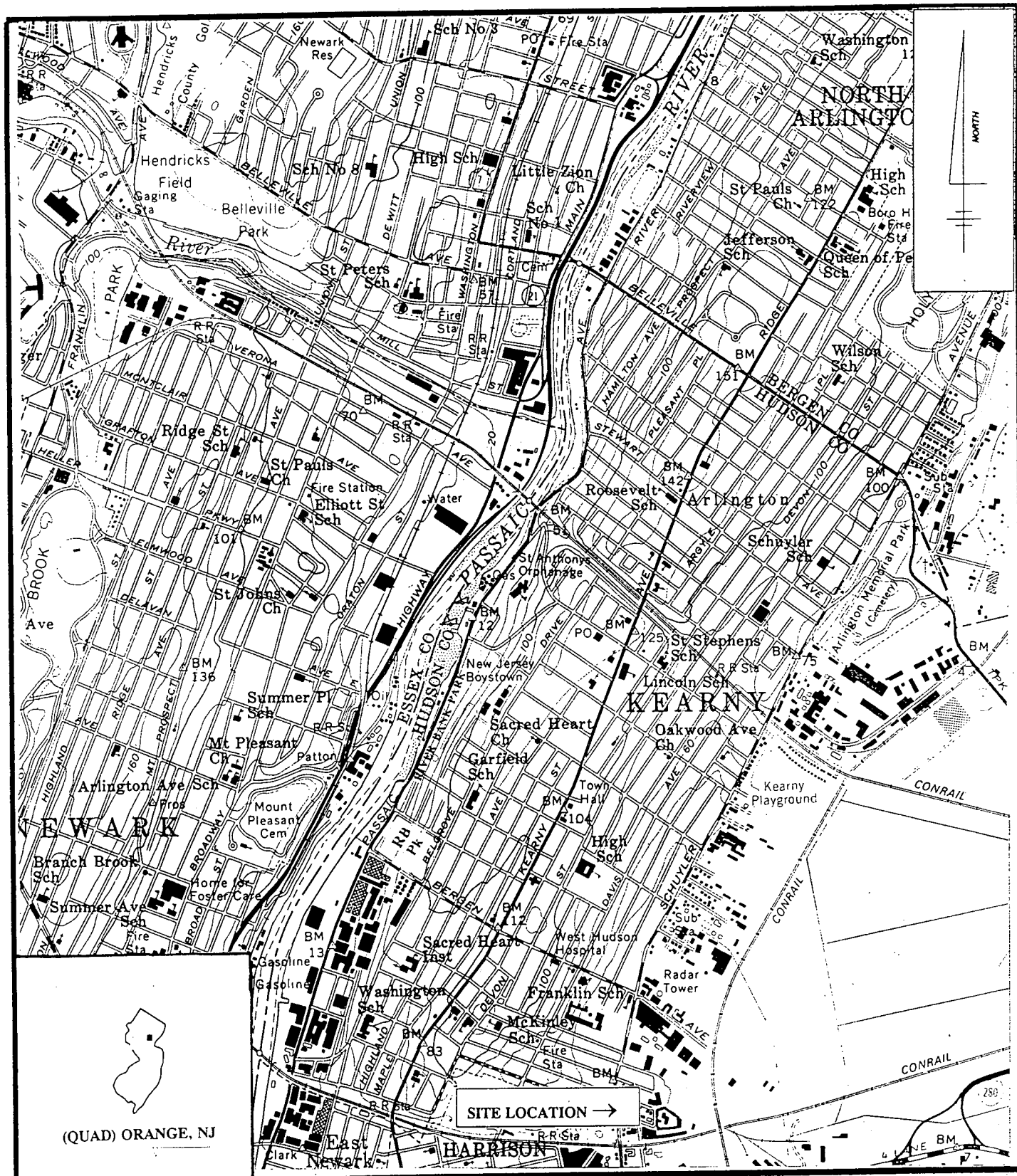
The Interstate Metals site (a.k.a. IM Separating Corp., Interstate Concentrating Co.) (CERCLIS ID No. NJD009717182) is an 8.4-acre facility located at 241-275 Dukes Street in a mixed industrial/residential portion of Kearny, Hudson County, New Jersey (Ref. Nos. 1; 3, p. 2). The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list notes that the site is located in Congressional District No. 14; however, the actual district is No. 9 (Ref. Nos. 1, 2). The site is bordered on the north by an industrial property; on the east by a Conrail railroad line and the former Keegan Landfill property; on the south by a Conrail railroad line; and on the west by a mixed commercial/industrial/residential area (Ref. Nos. 5; 6, p. 5). Figures 1 and 2 provide a Site Location Map and a Site Map, respectively.

From 1946 to 1991, the property was utilized for metals reclamation. During various periods of operations, the facility processed materials such as brass, lead/copper solder, nickel alloys, mercury, and copper. In addition, scrap aluminum foil from the U.S. military was reported to be buried on site during the 1940s. Past process wastes were also reportedly used as fill material and disposed of on site in low-lying areas. During the 1970s, slag piles of metal and sand were located on site; in 1976, the piles were reportedly removed and disposed of off site at an unknown location. As of 1988, metal reclamation activities were limited to brass and solder recovery. In June 1991, the nine on-site buildings were demolished and all metal recovery activities ceased. The property owner during the majority of site operations was Metals Realty Corporation, which leased the site to Interstate Metals (Ref. Nos. 3, p. 2; 8, Att. G, p. 3). The current property owner is 252 Dukes Street, Inc., which is wholly owned by Mr. Tony Sheng (Ref. No. 8, Att. H).

During the April 1999 Region II off-site reconnaissance, personnel noted that the southern 4.5 acres of the site is now utilized by a moving company; the company warehouse and parking area cover the majority of this area. The northern portion of the site in unpaved and partially vegetated. A small area of ponded water remains near the northwestern corner of the property. Fencing exists on the northwestern, northern, and eastern boundaries of the property. An earthen and rubble berm is present immediately north of the northern fence; the berm rises approximately 10 feet above ground surface (Ref. No. 6, pp. 2, 3, 5).

Numerous local, state, and federal investigations of the Interstate site have been conducted, including a June 1980 New Jersey Department of Environmental Protection (NJDEP) Preliminary Assessment (PA), a June 1980 U.S. Environmental Protection Agency (EPA) Site Inspection (SI), a July 1981 NJDEP SI, and a July 1988 NJDEP SI (Ref. No. 7). In addition, the NJDEP prepared an August 1988 PA Report for the Interstate Metals site (Ref. No. 3). The 1980 PA form noted the on-site presence of lagoons and scrap piles, as well as the potential presence of mercury-contaminated soils (Ref. No. 7, Att. A, pp. 3, 7). The 1980 SI form indicates that NJDEP personnel conducted a site visit on 8 April 1980. State personnel observed similar site conditions as noted in the PA form. In addition, it was stated that it is probable that northern and eastern areas of the property had been filled using process wastes. Interstate Metals reportedly processed approximately 17 tons of mercury from PPG Industries, Inc. (Ref. No. 7, Att. B, pp. 5, 6, 8, 11).

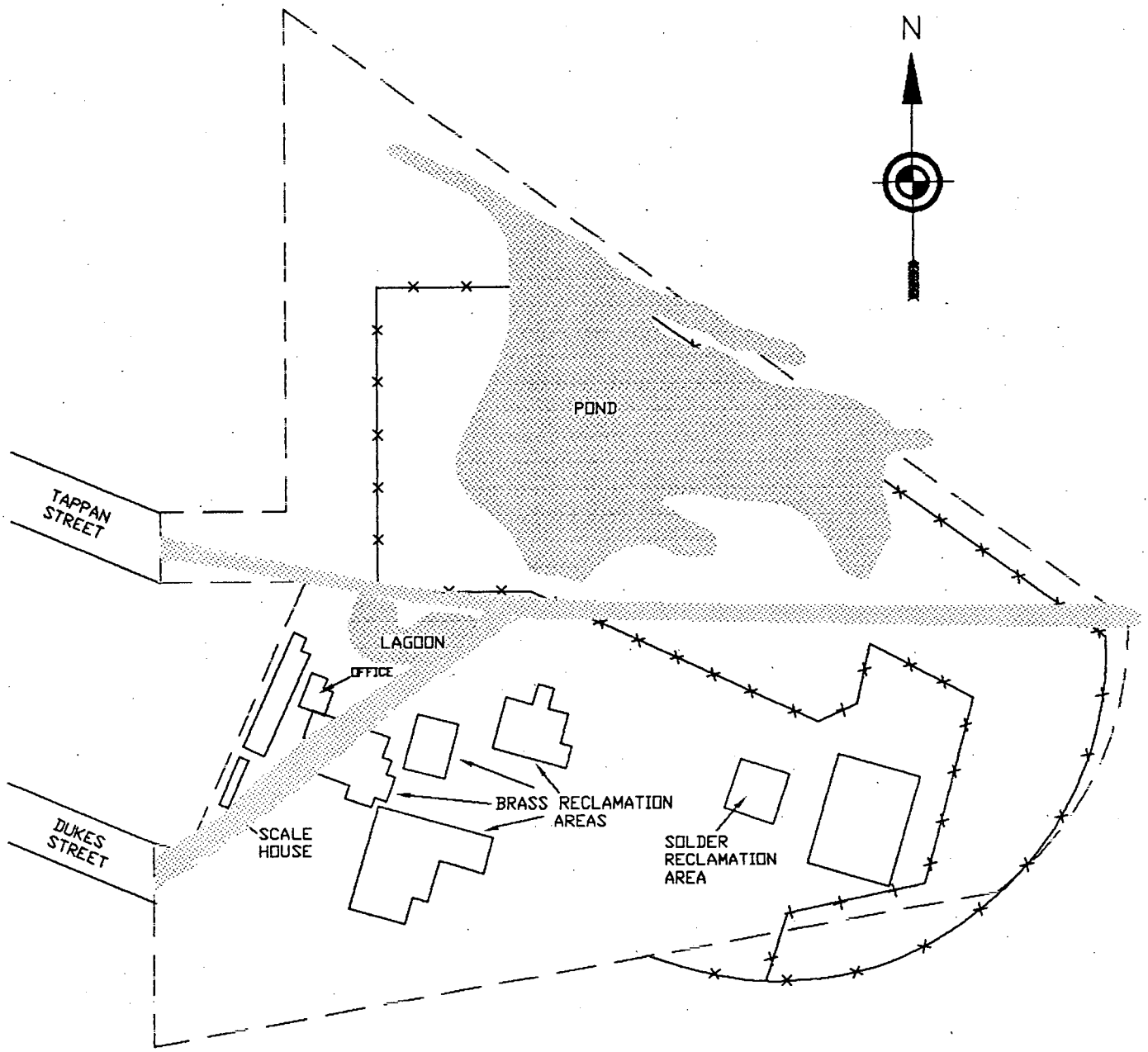
The July 1981 SI form also noted similar site conditions during a May 1981 site visit. Municipal storm water drainage was noted to collect in a pond adjacent to the on-site lagoon (Ref. No. 7, Att. C, pp. 2, 9, 10). The rubble that reportedly contained mercury was located toward the southeast portion of the property. The site was recommended for a low priority for further action (Ref. No. 7, Att. C, pp. 2, 14).



Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION

IN ASSOCIATION WITH RESOURCE APPLICATION, Inc.
C.C. JOHNSON & MALHOTRA, P.C., R.E. SARRIERA ASSOCIATES,
PRC ENVIRONMENTAL MANAGEMENT, AND GRB ENVIRONMENTAL SERVICES, INC.

EPA TM	FIGURE 1
MOYIK	SITE LOCATION MAP
START PM	INTERSTATE METALS KEARNY, NJ
CAMPBELL	



LEGEND:

FENCE

PROPERTY BOUNDARY

EASEMENT

- DRAWING NOT TO SCALE -

FIGURE 2 - SITE MAP (FORMER LAYOUT)
INTERSTATE METALS
KEARNY, NEW JERSEY
JANUARY 1999

US ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
CONTRACT# 68-W5-0019

WESTON

Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION

IN ASSOCIATION WITH PRC ENVIRONMENTAL MANAGEMENT, INC., C.C. JOHNSON & MALHOTRA, P.C., RESOURCE APPLICATIONS, INC., R.E. SARRIERA ASSOCIATES, AND GRB ENVIRONMENTAL SERVICES, INC.

DRAWN BY : J. HAMPTON JR.

EPA TASK MONITOR: C. MOYIK

START PROJECT MANAGER: K. CAMPBELL

D:\CADFILES\CAMPBELL.DWG

In June 1985, the Hudson County Regional Health Commission collected four soil samples from the property and outside the fenced area for chromium and mercury analyses. Chromium concentrations ranged from 68 to 1,470 parts per million (ppm), while mercury concentrations ranged from 11.2 to 45.3 ppm. In September 1985, the NJDEP collected two composite soil samples. One composite sample was composed of soils outside the fenced area and one composite was composed of soils/materials located in and around the mercury recovery building. Elevated concentrations of chromium, copper, lead, mercury, and nickel were detected in the latter sample. In addition, analytical data of both samples indicated the presence of polynuclear aromatic hydrocarbons (PAH) such as phenanthrene, pyrene, fluoranthene, anthracene, and chrysene. Aroclor-1254 was detected in the unfenced area sample at a concentration of 2,900 parts per billion (ppb) (Ref. No. 7, Att. D, p. 4).

In January and March 1987, J.H. Crow Co., consultant to Interstate Metals, conducted media sampling at the site. The following samples were collected and analyzed for metal analytes of concern: 102 soil samples, 8 groundwater samples, and 6 surface water/sediment sample pairs. Elevated levels of metals were detected in soil samples throughout the site to depths of 8 to 12 feet below ground surface. In addition, copper, chromium, lead, and zinc were detected in on-site monitoring well samples. Low levels of copper and zinc were detected in the aqueous lagoon samples. Analytical data of the corresponding sediment samples indicated the presence of elevated levels of copper, lead, mercury, and zinc (Ref. No. 7, Att, D, pp. 5, 6). In July 1988, the NJDEP prepared an additional SI form for the site. During the on-site reconnaissance, NJDEP personnel conducted air monitoring; elevated flame ionization detector (FID) and radiation readings were noted (Ref. No. 7, Att. D, p. 17).

In January 1990, Interstate Metals/Metals Realty Corp. entered into an Administrative Consent Order (ACO) with the NJDEP; the ACO directed Interstate to determine the nature and extent of site contamination (Ref. No. 8, Att. F). In November 1997, Tony Sheng, current owner of the property, submitted a Memorandum of Agreement (MOA) application for Non-Residential Properties to the NJDEP. A Declaration of Environmental Restrictions is attached to the MOA, which includes instructions to limit the migration and disturbance of on-site contaminated soils (Ref. No. 8, Att. G). The remedial action MOA was executed in March 1998 (Ref. No. 8, Att. I). Further information from the state is currently unavailable.

Although there is a potential for a release of contaminants to groundwater, drinking water supplies for communities within the site vicinity are obtained from sources greater than 4 miles from the site (Ref. Nos. 5, 9). Analytical data indicate the presence of contaminants, particularly metals, in the on-site soils and sediments; however, Frank Creek, the nearest downstream surface water body, is located 0.3 miles east of the site (Ref. Nos. 7, Att. D, p. 4; 13). The remainder of the surface water migration route is composed of heavily industrialized coastal tidal water bodies (Ref. Nos. 13; 22). Although these surface waters sustain fish populations, state-issued prohibitions and health advisories exist regarding the sale and consumption of specific fishes taken from these waters (Ref. No. 15). An estimated 13 people reside within 200 feet of the site (Ref. No. 23). There are no schools or day care facilities within 200 feet of the property (Ref. No. 6, p. 2). Development and covering of the southern portion of the site, as well as existing environmental restrictions on the entire property, have mitigated environmental threats due to direct contact with and overland migration of on-site contamination (Ref. Nos. 6; 8, Att. G).

SITE ASSESSMENT REPORT: SITE INSPECTION PRIORITIZATION

PART I: SITE INFORMATION

1. Site Name/Alias Interstate Metals (a.k.a. IM Separating Corp., Interstate Concentrating Co.)

   Street 241-275 Dukes Street

   City Kearny State New Jersey Zip Code 07032

2. County Hudson County Code 017 Cong. Dist. 09

3. CERCLIS ID No. NJD009717182

4. Block No. 252 Lot Nos. 7, 8

5. Latitude 40° 45' 07" N Longitude 74° 08' 35" W

   USGS Quad(s). Orange, NJ

6. Approximate size of site 8.4 acres

7. Owner 252 Dukes Street, Inc. Telephone No. (201) 997-5900

   Street 244 Dukes Street

   City Kearny State New Jersey Zip Code 07032

8. Operator 252 Dukes Street, Inc. Telephone No. (201) 997-5900

   Street 244 Dukes Street

   City Kearny State New Jersey Zip Code 07032

9. Type of Ownership

   X Private ___ Federal ___ State

   ___ County ___ Municipal ___ Unknown ___ Other _____

10. Owner/Operator Notification on File

    ___ RCRA 3001 Date _____ ___ CERCLA 103c Date _____

    ___ None X Unknown

11. Permit Information

Permit	Permit No.	Date Issued	Expiration Date	Comments
NJDEP - Air Permit	10232	11/25/79	11/25/89	Air scrubber for on-site kiln.

12. Site Status

__ Active X Inactive __ Unknown

13. Years of Operation: 1946 to June 1991

14. 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	Contaminated Soil	Contaminated Soil

Ref. Nos. 1 through 5; 8, Att. G, pp. 3, 4.

(b) Other Areas of Concern

During the December 1989 removal of six on-site fuel oil underground storage tanks (USTs), facility personnel noted that two of the USTs had leaked product into the surrounding soils and water table. The duration of the fuel oil discharge is unknown. The facility notified state and local officials of the spill; further information is currently unavailable (Ref. 8, Att. E).

15. Describe the regulatory history of the site, including the scope and objectives of any previous response actions, investigations and litigation by State, local, and Federal agencies (indicate type, affiliation, date of investigations).

Numerous local, state, and federal investigations of the Interstate site have been conducted, including a June 1980 NJDEP PA, a June 1980 EPA SI, a July 1981 NJDEP SI, and a July 1988 NJDEP SI (Ref. No. 7). In addition, the NJDEP prepared an August 1988 PA Report for the Interstate Metals site (Ref. No. 3). The 1980 PA form noted the on-site presence of lagoons and scrap piles, as well as the potential presence of mercury-contaminated soils (Ref. No. 7, Att. A, pp. 3, 7). The 1980 SI form indicates that NJDEP personnel conducted a site visit on 8 April 1980. State personnel observed similar site conditions as noted in the PA form. In addition, it was stated that it is probable that northern and eastern areas of the

property had been filled using process wastes. Interstate Metals reportedly processed approximately 17 tons of mercury from PPG Industries, Inc. (Ref. No. 7, Att. B, pp. 5, 6, 8, 11). The July 1981 SI form also noted similar site conditions during a May 1981 site visit. Municipal storm water drainage was noted to collect in a pond adjacent to the on-site lagoon (Ref. No. 7, Att. C, pp. 2, 9, 10). The rubble that reportedly contained mercury was located toward the southeast portion of the property. The site was recommended for a low priority for further action (Att. C, pp. 2, 14).

In June 1985, the Hudson County Regional Health Commission collected four soil samples from the property and outside the fenced area for chromium and mercury analyses. Chromium concentrations ranged from 68 to 1,470 ppm, while mercury concentration ranged from 11.2 to 45.3 ppm. In September 1985, the NJDEP collected two composite soil samples. One composite sample was composed of soils outside the fenced area and one composite was composed of soils/materials located in and around the mercury recovery building. Elevated concentrations of chromium, copper, lead, mercury, and nickel were detected in the latter sample. In addition, analytical data of the samples indicated the presence of PAHs such as phenanthrene, pyrene, fluoranthene, anthracene, and chrysene (Ref. No. 7, Att. D, p. 4).

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In January 1990, Interstate Metals/Metals Realty Corp. entered into an ACO with the NJDEP; the ACO directed Interstate to determine the nature and extent of site contamination (Ref. No. 8, Att. F). In November 1997, Tony Sheng, current owner of the property, submitted a MOA application for Non-Residential Properties to the NJDEP. A Declaration of Environmental Restrictions is attached to the MOA, which includes instructions to limit the migration and disturbance of on-site contaminated soils (Ref. No. 8, Att. G). The remedial action MOA was executed in March 1998 (Ref. No. 8, Att. I).

a) Is the site or any waste source subject to Petroleum Exclusion? Identify petroleum products and by-products that justify this decision.

During the December 1989 removal of six on-site fuel oil underground storage tanks (USTs), facility personnel noted that two of the USTs had leaked product into the surrounding soils and water table. The duration of the fuel oil discharge is unknown. The facility notified state and local officials of the spill; further information is currently

unavailable (Ref. 8, Att. E). The fuel oil associated with USTs is subject to Petroleum Exclusion provisions of federal regulations.

Ref. No. 8, Att. E.

b) Has normal farming application of pesticides registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) occurred at the site? Have pesticides been produced or stored at the site? Have there been any leaks or spills of pesticides on site?

Based on available background information, the site has not been used for agricultural purposes. Therefore, pesticides regulated under FIFRA have not been applied to the site. Pesticides have not been produced or stored at the site, nor have there been any spills or leaks of pesticides on the site.

Ref. Nos. 3; 8, Att. D.

c) Is the site or any waste source subject to RCRA Subtitle C (briefly explain)?

The site is an inactive metal recycling facility. Neither the site nor any waste source is subject to RCRA Subtitle C provisions.

Ref. Nos. 3; 6; 8, Att. G.

d) Is the site or any waste source maintained under the authority of the Nuclear Regulatory Commission (NRC)?

Neither the site nor any waste source is maintained under the authority of the NRC. It should be noted that radiation monitoring was conducted during a September 1987 NJDEP site visit. State personnel noted an elevated reading (21 uR/hr) at an area between the lead smelting building and the brass recovery operation. In June 1991, site operations ceased and all on-site buildings were demolished.

Ref. No. 3; 7, Att. D, p. 17; 8, Att. G, p. 3.

16. Do any conditions exist on site which would warrant immediate or emergency action?

During the off-site reconnaissance conducted by Region II START on 22 April 1999, no on-site conditions were observed which would warrant immediate or emergency action.

Ref. No. 6.

17. Information available from:

Contact Cathy Moyik Agency U.S. EPA Tel. No.: (212) 637-4339
Preparer Kathy A. Campbell Agency Region II START Date: September 1999

PART II: WASTE SOURCE INFORMATION

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

Waste Unit 1 - Contaminated Soil

Source Type

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

Description:

1. Describe the types of containers, impoundments, or other storage systems (i.e., concrete-lined surface impoundment) and any labels that may be present.

   The Interstate Metals site is an inactive metal recycling facility located in a mixed industrial/commercial/residential portion of Kearny, New Jersey. From 1946 to 1991, the property was utilized for metals reclamation. During various periods of operations, the facility processed materials such as brass, lead/copper solder, nickel alloys, mercury, and copper. In addition, scrap aluminum foil from the U.S. military was reported to be buried on site during the 1940s. Past process wastes were also reportedly used as fill material and disposed of on site in low-lying areas. During the 1970s, slag piles of metal and sand were located on site; in 1976, the piles were reportedly removed and disposed of off site at an unknown location. As of 1988, metal reclamation activities were limited to brass and solder recovery. In June 1991, the nine on-site buildings were demolished and all metal recovery activities ceased.

2. Describe the physical condition of the containers or storage systems (i.e., rusted and/or bulging drums).

   The southern portion of the site is currently occupied by a moving company warehouse and associated parking area. The remainder of the site is unpaved and partially vegetated. An earthen and rubble berm is present immediately north of the northern fence; the berm rises approximately 10 feet above ground surface.

3. Describe any secondary containment that may be present (e.g., drums on concrete pad in building or aboveground tank surrounded by berm).

   N/A

Ref. Nos. 3, p. 2; 6, p. 5; 8, Att. G, p. 3.

PART II: WASTE SOURCE INFORMATION (Continued)

Hazardous Waste Quantity

The exact area of contaminated soil is unknown. For the purposes of this report it is estimated that the entire property, or 8.4 acres, contains contaminated soil.

Ref. No. 3, p. 2.

Hazardous Substances/Physical State

Analytical data of soil and sediment samples collected during investigations conducted by Interstate Metals and the NJDEP indicate the presence of elevated concentrations of site-attributable metals, such as chromium, copper, lead, mercury, and zinc. Materials may have been deposited on the ground surface as slurries and/or solids.

Ref. No. 3.

PART III. SAMPLING RESULTS

EXISTING ANALYTICAL DATA

In June 1985, the Hudson County Regional Health Commission collected four soil samples from the property and outside the fenced area for chromium and mercury analyses. Chromium concentrations ranged from 68 to 1,470 ppm, while mercury concentrations ranged from 11.2 to 45.3 ppm. In September 1985, the NJDEP collected two composite soil samples. One composite sample was composed of soils outside the fenced area and one composite was composed of soils/materials located in and around the mercury recovery building. Elevated concentrations of chromium, copper, lead, mercury, and nickel were detected in the latter sample. In addition, analytical data of both samples indicated the presence of PAHs such as phenanthrene, pyrene, fluoranthene, anthracene, and chrysene. Aroclor-1254 was detected in the unfenced area sample at a concentration of 2,900 ppb (Ref. No. 7, Att. D, p. 4). Analytical QA/QC data are currently unavailable for review.

In January and March 1987, J.H. Crow Co., consultant to Interstate Metals, conducted media sampling at the site. The following samples were collected and analyzed for metal analytes of concern: 102 soil samples, 8 groundwater samples, and 6 surface water/sediment sample pairs. Elevated levels of metals were detected in soil samples throughout the site to depths of 8 to 12 feet below ground surface. In addition, copper, chromium, lead, and zinc were detected in on-site monitoring well samples. Low levels of copper and zinc were detected in the aqueous lagoon samples. Analytical data of the corresponding sediment samples indicated the presence of elevated levels of copper, lead, mercury, and zinc. The SI recommended a high priority for further action due to the presence of gross metal contamination (Ref. No. 7, Att. D, pp. 5 through 7).

SITE INSPECTION PRIORITIZATION SAMPLING RESULTS

No samples were collected by Region II START during the Site Inspection Prioritization (SIP) evaluation of the Interstate Metals site. Based on a review of the available background information and analytical data, and the additional Hazard Ranking System (HRS)-relevant information collected during the SIP evaluation, it was determined that further sampling was not necessary to characterize the site.

PART IV. HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to the 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 an observed release, define the supporting analytical evidence and relationship to background.**

   A release of contaminants is suspected due to the presence of on-site soil contamination, the existence of a shallow water table, and the detection of metals in on-site groundwater samples. In January and March 1987, J.H. Crow Co. collected 102 soil samples and 8 groundwater monitoring well samples for metals analysis. Elevated levels of site-attributable metals were detected in soil samples throughout the site to depths of 8 to 12 feet below ground surface. In addition, copper, chromium, lead, and zinc were detected in on-site monitoring well samples. Low levels of copper and zinc were detected in the aqueous lagoon samples. The analytical QA/QC data for these samples are no longer available.

   Ref. Nos. 3, p. 2; 8, Att. D.

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.**

   The Interstate Metals site is located within the Hackensack Meadowlands in the Piedmont physiographic province of New Jersey. Groundwater is not known to be used for drinking water purposes in the vicinity of the site. Therefore, there is no true aquifer of concern. For the purposes of this report, the aquifer of concern is considered to be the underlying Passaic Formation of the Brunswick Group (Newark Supergroup). The Passaic Formation occurs approximately 100 feet below ground surface. The formation consists of soft, reddish shale; red sandstone and siltstone; mudstone; and conglomerate. In the site area, the total thickness of these late Triassic Age rocks is estimated to be 6,000 feet. Groundwater movement and storage occur primarily due to extensive fracturing of its component rocks. Though cracks intersect as to allow omni-directional movement, water may be inhibited in traveling along certain pathways by fracture size and capacity. The permeability associated with this unit ranges from 10^{-4} to 10^{-8} centimeters per second (cm/s).

   The Interstate Metals site is directly underlain by approximately 6 to 10 feet of fill (unknown composition), 20 feet of sand and silt deposits, and a clay layer of unknown extent. The clay layer occurs at 38 feet below ground surface. The hydraulic conductivity of the layers are as follows: fill, 10^{-4} cm/s (estimated); silty sands, 10^{-6} cm/s; and clay, 10^{-8} cm/s. During the installation of on-site monitoring wells, meadowland mat deposits were observed; these deposits generally do not yield a significant amount of water and act as a semi-confining aquiclude. Groundwater within the unconsolidated deposits occurs under water table conditions at a depth of approximately 2 feet

below ground surface. Groundwater generally moves in a westerly direction, however, there is a very shallow hydraulic gradient.

Ref. Nos. 3, pp. 3, 44, 138; 10; 11, p. 4.

3. **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 actual lowest point of waste disposal is unknown. Analytical data of on-site subsurface soil samples indicate the presence of site-attributable metals at depths up to 12 feet below ground surface. The highest seasonal level of the saturated zone of the aquifer of concern is the bedrock surface, which occurs approximately 100 feet below ground surface. Therefore, the depth from the lowest point of waste disposal to the highest seasonal level of the saturated zone of the aquifer of concern is estimated to be 88 feet.

Ref. Nos. 3, pp. 3, 44, 138.

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

The permeability of the clay deposits is 10^{-8} cm/s.

Ref. Nos. 3, p. 3; 11, p. 4.

5. **What is the net precipitation at the site (inches)?**

The net precipitation in the vicinity of the site ranges from 15 to 30 inches.

Ref. No. 11, pp. 2, 3.

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

Groundwater is not used for drinking purposes within 4 miles of the site.

Ref. Nos. 5; 9.

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 actually contaminated by hazardous substance(s) attributed to an observed release from the site.**

Groundwater is not utilized for drinking water purposes within 4 miles of the site. Due to the absence of drinking water wells in the site vicinity, no wells are suspected to be located within a contamination boundary of a potential release.

Ref. Nos. 5; 9.

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

Distance (miles)	Population
0 - ¼	0
> ¼ - ½	0
> ½ - 1	0
> 1 - 2	0
> 2 - 3	0
> 3 - 4	0

Ref. Nos. 5; 9.

State whether groundwater is blended with surface water, groundwater, or both before distribution.

Not applicable.

Ref. Nos. 5; 9.

Is a designated wellhead protection area within 4 miles of the site?

The site is not located within a designated Wellhead Protection Area, as groundwater is not utilized for drinking water purposes within 4 miles of the site.

Ref. Nos. 5; 9.

Does a waste source overlie a designated or proposed wellhead protection area? If a release to groundwater is observed or suspected, does a designated or proposed wellhead protection area lie within the contaminant boundary of the release?

Not applicable.

Ref. Nos. 5; 9.

9. **Identify one of the following resource uses of groundwater within 4 miles of the site: commercial livestock watering, ingredient in commercial food preparation, supply for commercial aquaculture, supply for major, or designated water recreation area, excluding drinking water use, irrigation (5-acre minimum) of commercial food or commercial forage crops, unusable.**

Groundwater is not known to be utilized for the abovementioned purposes. No drinking water wells are located within 4 miles of the site; however, the potential exists for underlying

groundwater to be utilized for drinking purposes. Groundwater within 4 miles of the site is used for industrial, commercial, and institutional purposes.

Ref. Nos. 5; 9.

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 and relationship to background.

A release of site-attributable contaminants to surface water is not observed or suspected. The relatively flat Interstate Metals property is situated within the Passaic River drainage basin. The nearest surface water body is Frank Creek, which is located approximately 1,500 feet east of the site; a railroad right-of-way exists between the site and Frank Creek. A small area of ponded water is present near the northwest corner of the site. Although metals contamination of on-site soils and sediments is documented, Frank Creek is not suspected to be impacted due its distance from site and the intervening, elevated railroad. In addition, the southern portion of the site is currently covered by a moving company warehouse and parking area, which limits the potential of overland migration of on-site contaminants.

Ref. Nos. 3, p. 3; 6, pp. 2, 3, 5; 13.

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

The nearest downslope surface water body is Frank Creek, which is located 1,500 feet east of the site. Site runoff is expected to enter the small, on-site pond, and potentially the low-lying eastern areas adjacent to the railroad right-of-way.

Ref. Nos. 6; 13.

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

The distance from the site to Frank Creek is approximately 1,500 feet.

Ref. No. 13.

13. Identify all surface water body types within 15 downstream miles.

Name	Water Body Type	Flow (cfs)	Saline/Fresh/Brackish
Frank Creek	Tidal River	N/A	Brackish
Passaic River	Tidal River	N/A	Brackish
Newark Bay	Coastal Tidal	N/A	Saline
Kill Van Kull	Coastal Tidal	N/A	Saline
Arthur Kill	Coastal Tidal	N/A	Saline
Upper NY Bay	Coastal Tidal	N/A	Saline
The Narrows	Coastal Tidal	N/A	Saline

Ref. No. 11, p. 6; 13; 17 through 19.

14. Determine the 2-year, 24-hour rainfall (inches) for the site.

The 2-year, 24-hour rainfall in the area of the site is approximately 3.5 inches.

Ref. No. 16.

15. Determine size of the drainage area (acres) for sources at the site.

The drainage area for the site is estimated to be 8.4 acres, the area of the property.

Ref. Nos. 3, p. 2; 13.

16. Describe the predominant soil group in the drainage area.

Overburden soils in the site vicinity are composed primarily of glacial lake sediment deposits and fill. Glacial lake sediments typically include sand, gravel, silt, clay, peat, and root mat. Therefore, it is estimated that the predominant soil group in the drainage area is fine-textured soils with very low infiltration rates.

Ref. No. 3, pp. 3, 43; 11, p. 5.

17. Determine the type of floodplain within which the site is located.

The Interstate Metals site is located in an area of minimal flooding.

Ref. No. 11.

18. Identify drinking water intakes in surface waters within 15 miles downstream of the point of surface water entry. For each intake identify: the name of the surface water body in which the intake is located, the distance in miles from the point of surface water entry, population served, and stream flow at the intake location.

Intake	Distance	Population Served	Flow (cfs)
None	N/A	N/A	N/A

Ref. Nos. 9; 13.

19. 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
Newark Bay	Coastal Tidal	N/A	Saline
Kill Van Kull	Coastal Tidal	N/A	Saline
Arthur Kill	Coastal Tidal	N/A	Saline
Upper NY Bay	Coastal Tidal	N/A	Saline
The Narrows	Coastal Tidal	N/A	Saline

There is a statewide ban on the sale of all striped bass taken from New Jersey Waters. Statewide consumption advisories exist for American eel and bluefish. A ban also exists on the sale and consumption of **all** fish and shellfish taken from the lower portion of the Passaic River; therefore, the Passaic River is not considered to be a fishery with regards to the HRS evaluation.

Certain restrictions due to known contamination exist on the remaining above-mentioned fisheries. In the Newark Bay Complex, which includes Newark Bay, the lower Hackensack River, Arthur Kill, Kill van Kull, and tidal portions of its tributaries, there is a ban on the consumption of striped bass and blue crab, as well as a health advisory regarding the consumption of American eel, bluefish, white perch, and white catfish. In the Upper NY Bay, there is a health advisory regarding the consumption of American eel, striped bass, bluefish, white perch, white catfish, and blue crab. In the Raritan Bay complex, which includes the Narrows, there is a health advisory regarding the consumption of striped bass, bluefish, white perch, white catfish, and blue crab.

Ref. Nos. 11, p. 6; 13; 15; 17 through 19.

20. Identify surface water sensitive environments that exist within 15 miles of the point of surface water entry.

Environment	Water Body Type	Flow (cfs)	Wetland Frontage (mi)
Wetlands-Newark Bay	Coastal Tidal	N/A	0.1

Environment	Water Body Type	Flow (cfs)	Wetland Frontage (mi)
Wetlands- Upper NY Bay	Coastal Tidal	N/A	1
Wetlands- Arthur Kill	Coastal Tidal	N/A	2
Wetlands- Lower NY Bay	Coastal Tidal	N/A	0.1
State-listed endangered species (*Lemna perpusilla*)	Tidal River	N/A	N/A
Federally-listed endangered species (*Falco peregrinus*)	Coastal Tidal	N/A	N/A
Unique Biotic Community- Coastal Heron Rookery at Shooter's Island	Coastal Tidal	N/A	N/A
State-listed threatened species (*Kinosternon subrubrum*)	Coastal Tidal	N/A	N/A
Unique Biotic Community- Coastal Heron Rookery at Prall's Island	Coastal Tidal	N/A	N/A
State-listed endangered species (*Sterna antillarum*)	Coastal Tidal	N/A	N/A
Unique Biotic Community - Coastal Heron Rookery at Global Terminal	Coastal Tidal	N/A	N/A
Unique Biotic Community- Raptor Wintering Area at Fresh Kills	Coastal Tidal	N/A	N/A

Ref. Nos. 11; 13; 14; 20.

21. If a release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 18-20 that are or may be actually contaminated by hazardous substance(s) attributed to an observed release from the site.

Intake: N/A
Fishery: N/A
Sensitive Environment: N/A

A release of site-attributable contaminants to surface water is not observed or suspected.

Ref. Nos. 9; 13 through 15.

22. Identify whether the surface water is used for any of the following purposes: irrigation (5-acre minimum) of commercial food or commercial forage crops, watering of commercial livestock, commercial food preparation, recreation, potential drinking water supply.

The surface waters along the migration route are highly industrialized waterways. However, surface waters provide navigational channels for both commercial and recreational boating vessels.

Ref. No. 22.

SOIL EXPOSURE PATHWAY

23. Determine the number of people that occupy residences or attend school or day care on or within 200 feet of observed contamination.

The Interstate Metals site is located in a mixed industrial/commercial/residential portion of the Town of Kearny. Thirteen people are estimated to reside within 200 feet of the site. There are no schools or day care centers located within 200 feet of the site.

Ref. Nos. 6, p. 2; 23.

24. Determine the number of people that regularly work on or within 200 feet of observed contamination.

An estimated 150 people work on or within 200 feet of the Interstate Metals site.

Ref. No. 6, p. 3.

25. Identify terrestrial sensitive environments on or within 200 feet of observed contamination.

The Interstate Metals site is located in a mixed industrial/commercial/residential portion of the Town of Kearny. No terrestrial sensitive environments are known to be located on or within 200 feet of observed contamination.

Ref. Nos. 6; 20.

26. Identify whether there are any resource uses, such as commercial agriculture, silviculture, livestock production or grazing within an area of observed or suspected soil contamination.

The site is located in a mixed industrial/commercial/residential portion of the Town of Kearny. None of the above-mentioned resource uses occur within observed or suspected soil contamination.

Ref. Nos. 5; 6.

AIR PATHWAY

27. Describe the likelihood of release of hazardous substances 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 and relationship to background.

An observed release of contaminants associated with the site to air is not documented, nor currently suspected. Although the facility previously maintained an NJDEP air permit for its kiln air scrubber, the Interstate Metals facility has been inactive since June 1991. Currently, the southern portion of the property is occupied by a moving company warehouse and parking area. The northern portion of the site remains unused. It should be noted that site background information contains earlier dust complaints from nearby residents; unauthorized motorbike use of the property is reported to have occurred. However, no formal air sampling program is known to have been conducted.

Ref. Nos. 3, pp. 3, 11; 8, Att. G, p. 3.

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

Distance	Population
On site	0
>0 - ¼ mi	1,468
> ¼ - ½ mi	4,637
> ½ - 1 mi	23,660
>1 - 2 mi	83,100
>2 - 3 mi	132,340
>3 - 4 mi	178,380

Ref. No. 21.

29. Identify sensitive environments, including wetlands and associated wetlands acreage, within 4 miles of the site.

Distance (mi.)	Wetlands Acreage	Sensitive Environment
0 - ¼	100	None Identified.
> ¼ - ½	210	None Identified.
> ½ - 1	320	State-listed endangered species (*Lemna perpusilla*).
> 1 - 2	335	Three state-listed endangered species (*Podilymbus podiceps, Circus cyaneus,* and *Cistothorus platensis*); unique biotic community (coastal heron rookery at Kearny Marsh).
> 2 - 3	625	State-listed threatened species (*Passerculus sandwichensis*).
> 3 - 4	880	Federally-listed endangered species (*Falco peregrinus*); three state-listed endangered species (*Phlox pilosa, Prenanthes racemosa,* and *Scirpus maritimus*).

Ref. Nos. 13, 14, 20.

30. 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; refer to Question No. 27 for a description of likelihood of a release.

31. If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 29, that are or may be located within the area of air contamination from the release.

A release to air is not observed or suspected; refer to Question No. 27 for a description of likelihood of a release.

ATTACHMENT 1

EXHIBIT A

PHOTOGRAPH LOG

INTERSTATE METALS
KEARNY, HUDSON COUNTY, NEW JERSEY

OFF-SITE RECONNAISSANCE: 22 APRIL 1999

PHOTOGRAPH INDEX

INTERSTATE METALS
KEARNY, NEW JERSEY
22 APRIL 1999

PHOTOGRAPHS TAKEN BY H. ALLEN

PHOTO NUMBER	DESCRIPTION
P-1	View looking southeast from Tappan Street at site property and nearby residential/commercial area.
P-2	View looking north at packaging business located northwest of the site.
P-3	View looking southwest at front of active, on-site moving company.
P-4	View looking southeast at north face of moving company and parking lot.
P-5, P-6	Panoramic view looking east to north at undeveloped portion of the site, with small area of ponded water to the left.
P-7	View looking northwest at northwest corner of site, with packaging business beyond property fencing.
P-8	View looking southeast along southern boundary of property, with moving company warehouse to the left.
P-9	View looking northeast at business located east of the property, west of the newer pavement.
P-10	View looking northwest from the connecting road at the neighboring businesses and residences.

P-1 22 April 1999
View looking southeast from Tappan Street at site property and nearby residential/commercial area.

P-2 22 April 1999
View looking north at packaging business located northwest of the site.

P-3 22 April 1999
View looking southwest at front of active, on-site moving company.

P-4 22 April 1999
View looking southeast at north face of moving company and parking lot.

Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION

IN ASSOCIATION WITH PRC ENV. MGMT., GRB ENV. SVCS., C.C JOHNSON & MALHOTRA, P.C., RESOURCE APPLICATIONS, INC. AND R.E. SARRIERA ASSOCIATES

P-5, P-6 22 April 1999

Panoramic view looking east to north at undeveloped portion of the site, with small area of ponded water to the left.

P-9 22 April 1999
View looking northeast at business located east of the property, west of the newer pavement.

P-10 22 April 1999
View looking northwest from the connecting road at the neighboring businesses and residences.

P-7 22 April 1999
View looking northwest at northwest corner of site, with packaging business beyond property fencing.

P-8 22 April 1999
View looking southeast along southern boundary of property, with moving company warehouse to the left.

ATTACHMENT 2

REFERENCES

1. Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), List-8I: Site/Response Action Listing, p. 185, U.S. EPA Superfund Program, Region II, April 14, 1999.

2. U.S. Bureau of the Census Congressional District Atlas, 103rd Congress of the United States. U.S. Government Printing Office, Washington, DC, 1993.

3. Preliminary Assessment, Interstate Metals Separating Corp., NJDEP Division of Hazardous Waste Management, August 8, 1988.

4. Project Notes: From K. Campbell, Region II START, to Interstate Metals file, Subject: Site Latitude and Longitude, 15 December 1998.

5. Four Mile Radius Map for the Interstate Metals site, based on U.S. Department of the Interior, Geological Survey Topographic Maps, 7.5 minute series, Quadrangles for "Orange, NJ," 1955, photorevised 1981; "Jersey City, NJ-NY," 1967, photorevised 1981; "Elizabeth, NJ-NY," 1967, photorevised 1981; and "Weehawken, NJ-NY," 1967, photorevised 1981.

6. Field Logbook No. START-02-370, Interstate Metals, TDD No. 02-99-08-0090, Off-site Reconnaissance, 22 April 1999.

7. Project Notes: From K. Campbell, Region II START, to Interstate Metals file, Subject: Miscellaneous Site Background Information, 2 September 1999.

8. Project Notes: From K. Campbell, Region II START, to Interstate Metals file, Subject: Additional Site Background Information, 7 September 1999.

9. Project Notes: From K. Campbell, Region II START, to Keegan Landfill file, Subject: Groundwater and Surface Water Use, 9 June 1997.

10. Appraisal of Water Resources in the Hackensack River Basin, New Jersey, U.S. Geological Survey, Water-Resources Investigations 76-74, June 1976.

11. Federal Register, 40 CFR, Part 300, Hazard Ranking System; Final Rule, Volume 55, No. 241, Environmental Protection Agency, December 14, 1990.

12. Flood Insurance Rate Map for the Town of Kearny, Hudson County, Community-Panel Number 340224-0001 B, Federal Emergency Management Agency, December 1, 1977.

REFERENCES (Continued)

13. Fifteen-Mile Surface Water Pathway Map for the Interstate Metals site, compiled from U.S. Department of the Interior, Geographical Survey, 7.5 minute series (based on aerial photography), Quadrangles for "Jersey City, NJ-NY," 1967, photorevised 1981; "Orange, NJ," 1955, photorevised 1981; "Elizabeth, NJ-NY," 1967, photorevised 1981; "Weehawken, NJ-NY," 1967, photorevised 1981; "Arthur Kill, NY-NJ," 1966, photorevised 1981; and "The Narrows, NY-NJ," 1966, photorevised 1981.

14. Project Note: From K. Campbell, Region II START, to Interstate Metals file, Subject: Wetlands in Site Vicinity, 9 September 1999.

15. New Jersey Fish & Wildlife Digest, A Guide to Health Advisories for Eating Fish and Crabs Caught in New Jersey Waters, NJDEP, January 1998.

16. Rainfall Frequency Atlas of the United States, U.S. Department of Commerce, Technical Paper No. 40, 1961.

17. Surface Water Quality Standards N.J.A.C. 7:9B, NJDEP, Office of Land and Water Planning, April 1994.

18. Water Quality Regulations, Surface Water and Groundwater Classifications and Standards, New York State Codes, Rules, and Regulations (CRR), Title 6, Chapter X, Parts 700-705, New York State Department of Environmental Conservation, Effective: September 1991.

19. Classes and Standards of Quality and Purity Assigned to Fresh Surface and Tidal Salt Waters, New York City Waters Series, New York City Waters, State of New York CRR, Title 6, Subchapter B, Article 13, Part 890, Reissued: July 1995.

20. Project Note: From K. Campbell, Region II START, to Keegan Landfill file, Subject: Sensitive Environments, 12 May 1997.

21. Project Note: From K. Campbell, Region II START, to Interstate Metals file, Subject: Population within Four Miles of Site, 15 December 1998; with attachment.

22. Sedimentology of Newark Bay, New Jersey: An Urban Estuarine Bay, Suszkowski, Dennis J., June 1978.

23. Project Note: From K. Campbell, Region II START, to Interstate Metals file, Subject: Nearby Population, 9 September 1999; with attachment.

REFERENCE NO. 1

EPA ID	Site Name Address City Zip County Name\Code	Cong Dist	NFRAP Flag	Oprble Unit	Action Type	Action Lead	Action Qualif	Actual Start Date	Actual Compl Date
NJ0001024769	INTERNATIONAL WIRE PRODUCTS 301 GREENWOOD AVENUE MIDLAND PARKS 07432 BERGEN 003	05							
				00	SH 001	F	H		09/29/95
					SI 001	S	H		09/29/95
NJD009717182	INTERSTATE METALS 241-275 DUKE ST KEARNY 07032 HUDSON 017	14							
				00	DS 001	F			06/01/80
					PA 001	F	N		06/01/80
					PA 002	S	N	01/02/89	01/09/89
					SH 001	F		09/03/98	
					SI 001	S	L	03/01/89	03/08/89
NJD070951405	INTERTECH METAL STAMPING 516 COMMERCE STREET FRANKLIN LAKES 07417 BERGEN 003	08	NFA						
				00	DS 001	S			09/13/93
					PA 001	S	L	10/01/92	09/29/93
					SI 001	S	N		06/20/95
NJD980530521	INTL PAPER CABINET DIVISION 183 NATIONAL ROAD (P.O. 31: EDISON 08817 MIDDLESEX 023	15	NFA						
				00	DS 001	F			06/01/81
					PA 001	F	N	07/01/84	09/01/84
NJD070963202	INTL WIRE PRODUCTS COMPANY 500 W MAIN ST WYCKOFF 07481 BERGEN 003	07							
				00	DS 001	F			06/01/81
					PA 001	S	L	02/01/86	02/20/86
					RS 001	F		02/10/97	03/31/97
					SI 001	S	H	12/01/90	01/03/91

REFERENCE NO. 2

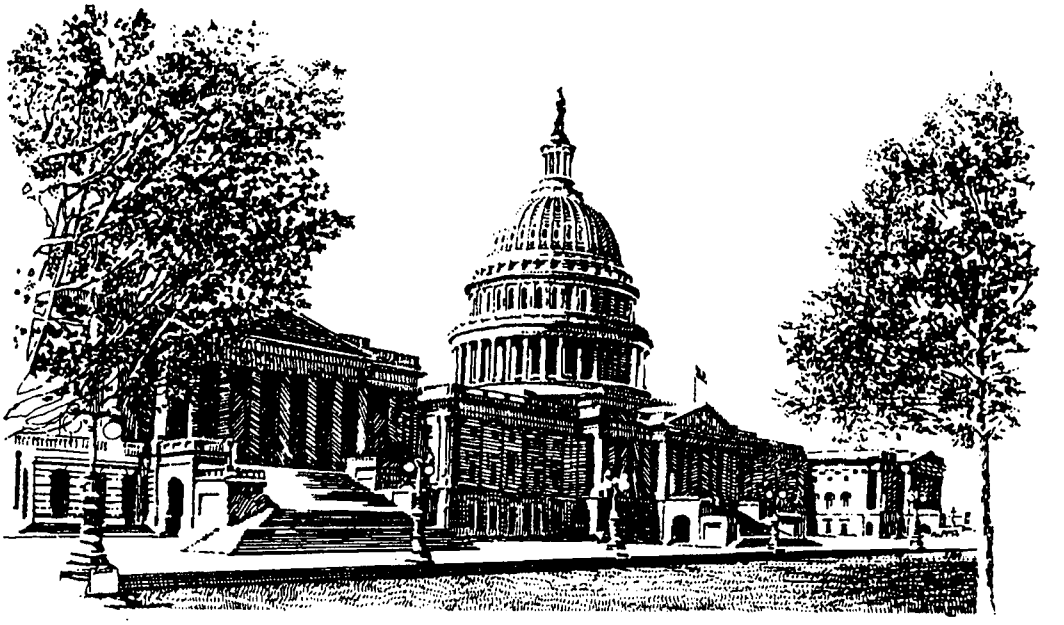
Volume 2

New Jersey - Wyoming,
American Samoa, Guam, Puerto Rico,
and Virgin Islands of the United States

Congressional District Atlas

103rd Congress of the United States

Issued February 1993



U.S. Department of Commerce
Ronald H. Brown, Secretary
John Rollwagen, Deputy Secretary

Economics and Statistics Administration
Jeffrey Mayer, Acting Under Secretary

BUREAU OF THE CENSUS
Harry A. Scarr, Acting Director

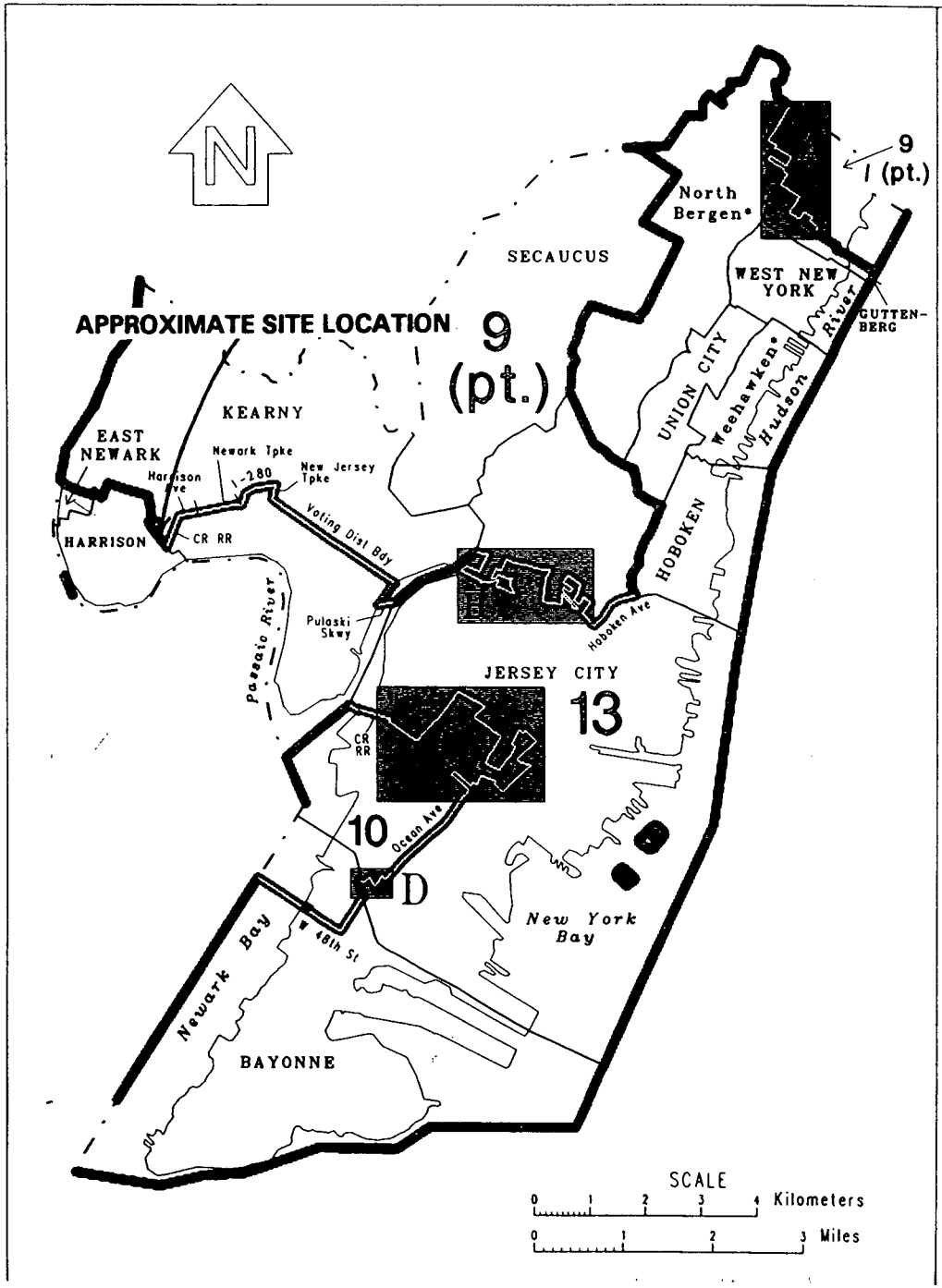
Ref. 2

p. 1

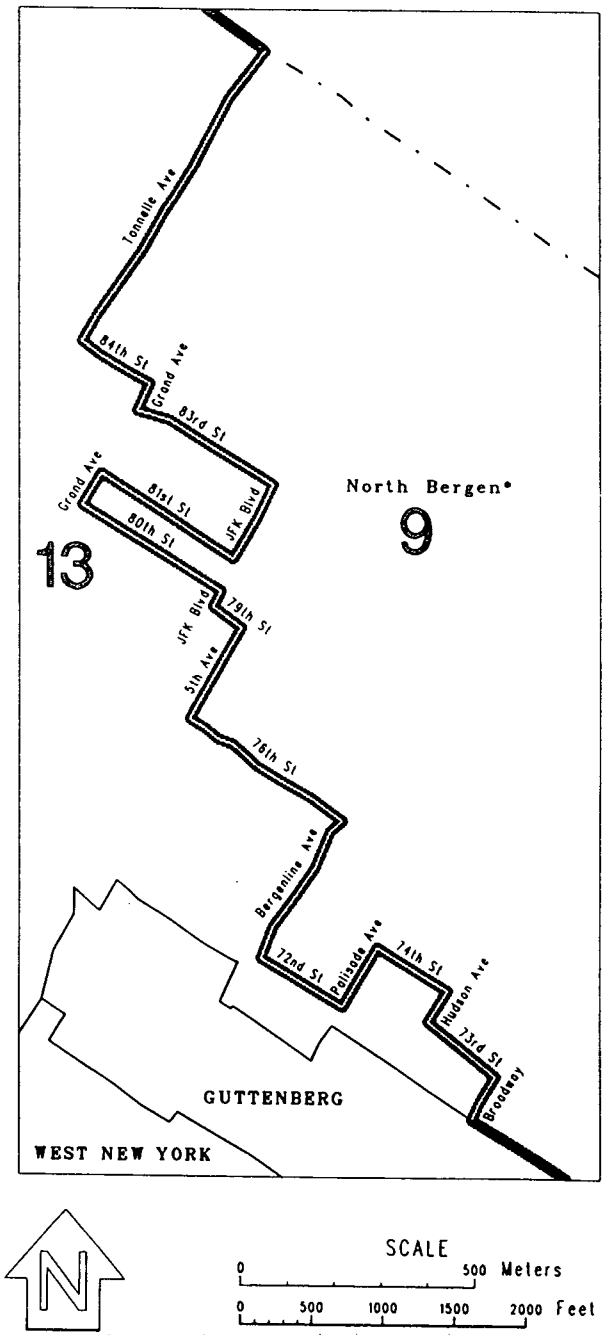
Table 1. **Places**

Place	County	Congressional district
Absecon city	Atlantic	2
Allamuchy-Panther Valley CDP	Warren	5
Allendale borough	Bergen	5
Allenhurst borough	Monmouth	6
Allentown borough	Monmouth	4
Alloway CDP	Salem	2
Alpha borough	Warren	5
Alpine borough	Bergen	5
Andover borough	Sussex	5
Annandale CDP	Hunterdon	12
Asbury Park city	Monmouth	6
Atlantic City city	Atlantic	2
Atlantic Highlands borough	Monmouth	6
Audubon borough	Camden	1
Audubon Park borough	Camden	1
Avalon borough	Cape May	2
Avenel CDP	Middlesex	7
Avon-by-the-Sea borough	Monmouth	6
Barnegat CDP	Ocean	3
Barnegat Light borough	Ocean	3
Barrington borough	Camden	1
Bay Head borough	Ocean	4
Bayonne city	Hudson	10,13
Beach Haven borough	Ocean	3
Beach Haven West CDP	Ocean	3
Beachwood borough	Ocean	3
Beattyestown CDP	Warren	5
Beckett CDP	Gloucester	1
Belleville CDP	Essex	8
Bellmawr borough	Camden	1
Belmar borough	Monmouth	6
Belvidere town	Warren	5
Bergenfield borough	Bergen	5
Berkeley Heights CDP	Union	7
Berlin borough	Camden	1
Bernardsville borough	Somerset	12
Beverly city	Burlington	3
Blackwood CDP	Camden	1
Bloomfield CDP	Essex	8
Bloomingdale borough	Passaic	11
Bloomsbury borough	Hunterdon	12
Bogota borough	Bergen	9
Boonton town	Morris	11
Bordentown city	Burlington	4
Bound Brook borough	Somerset	7
Bradley Beach borough	Monmouth	6
Branchville borough	Sussex	5
Brass Castle CDP	Warren	5
Brick Township CDP	Ocean	4
Bridgeton city	Cumberland	2
Brielle borough	Monmouth	4
Brigantine city	Atlantic	2
Brooklawn borough	Camden	1
Brown Mills CDP	Burlington	3
Budd Lake CDP	Morris	11
Buena borough	Atlantic	2
Burlington city	Burlington	4
Butler borough	Morris	11
Caldwell CDP	Essex	11
Califon borough	Hunterdon	12
Camden city	Camden	1
Cape May city	Cape May	2
Cape May Court House CDP	Cape May	2
Cape May Point borough	Cape May	2
Carlstadt borough	Bergen	9
Carneys Point CDP	Salem	2
Carteret borough	Middlesex	13
Cedar Glen Lakes CDP	Ocean	4
Cedar Glen West CDP	Ocean	4
Cedar Grove CDP	Essex	8
Chatham borough	Morris	11
Cherry Hill CDP	Camden	3
Chesilhurst borough	Camden	1
Chester borough	Morris	11
Cinnaminson CDP	Burlington	3
Clark CDP	Union	7
Clayton borough	Gloucester	2
Clearbrook Park CDP	Middlesex	12
Clementon borough	Camden	1
Cliffside Park borough	Bergen	9
Cliffwood Beach CDP	Monmouth	6
Clifton city	Passaic	8
Clinton town	Hunterdon	12
Closter borough	Bergen	5
Collings Lakes CDP	Atlantic	2
Collingswood borough	Camden	1
Colonia CDP	Middlesex	7
Concordia CDP	Middlesex	12
Corbin City city	Atlantic	2
Country Lake Estates CDP	Burlington	3
Crandon Lakes CDP	Sussex	5
Cranford CDP	Union	7
Cresskill borough	Bergen	5
Crestwood Village CDP	Ocean	4
Dayton CDP	Middlesex	12
Deal borough	Monmouth	6
Delanco CDP	Burlington	3
Demarest borough	Bergen	5
Dover town	Morris	11
Dumont borough	Bergen	5
Dunellen borough	Middlesex	6
East Brunswick CDP	Middlesex	12
East Freehold CDP	Monmouth	12
East Hanover CDP	Morris	11
East Newark borough	Hudson	13
East Orange city	Essex	10
East Rutherford borough	Bergen	9
Eatontown borough	Monmouth	12
Edgewater borough	Bergen	9
Edgewater Park CDP	Burlington	3
Edison CDP	Middlesex	6,7
Egg Harbor City city	Atlantic	2
Elizabeth city	Union	10,13
Elmer borough	Salem	2
Elmwood Park borough	Bergen	9
Elwood-Magnolia CDP	Atlantic	2
Emerson borough	Bergen	5
Englewood city	Bergen	9
Englewood Cliffs borough	Bergen	9
Englishtown borough	Monmouth	12
Erma CDP	Cape May	2
Estell Manor city	Atlantic	2
Ewing CDP	Mercer	12
Fairfield CDP	Essex	11
Fair Haven borough	Monmouth	12
Fair Lawn borough	Bergen	5,9
Fairton CDP	Cumberland	2
Fairview borough	Bergen	9
Fairview CDP	Monmouth	6,12
Fanwood borough	Union	7
Far Hills borough	Somerset	12
Farmingdale borough	Monmouth	4
Fieldsboro borough	Burlington	4
Flemington borough	Hunterdon	12
Florence-Roebling CDP	Burlington	4
Florham Park borough	Morris	11
Folsom borough	Atlantic	2
Fords CDP	Middlesex	7
Forked River CDP	Ocean	3
Fort Dix CDP	Burlington	3,4
Fort Lee borough	Bergen	9
Franklin borough	Sussex	5
Franklin Lakes borough	Bergen	5
Freehold borough	Monmouth	12
Frenchtown borough	Hunterdon	12
Garfield city	Bergen	9
Garwood borough	Union	7
Gibbsboro borough	Camden	1
Gibbstown CDP	Gloucester	1
Gilford Park CDP	Ocean	3
Glassboro borough	Gloucester	2
Glendora CDP	Camden	1
Glen Gardner borough	Hunterdon	12
Glen Ridge CDP	Essex	8
Glen Rock borough	Bergen	5
Gloucester City city	Camden	1
Great Meadows-Vienna CDP	Warren	5
Guttenberg town	Hudson	13
Hackensack city	Bergen	9
Hackettstown town	Warren	5
Haddonfield borough	Camden	3
Haddon Heights borough	Camden	1
Haledon borough	Passaic	8
Hamburg borough	Sussex	5
Hammonton town	Atlantic	2
Hampton borough	Hunterdon	12
Hanover Township CDP	Morris	11
Harrington Park borough	Bergen	5
Harrison town	Hudson	13
Harvey Cedars borough	Ocean	3
Hasbrouck Heights borough	Bergen	9
Haworth borough	Bergen	5
Hawthorne borough	Passaic	5
Heathcote CDP	Middlesex	12
Helmetta borough	Middlesex	12
High Bridge borough	Hunterdon	12
Highland Lake CDP	Sussex	5
Highland Park borough	Middlesex	6
Highlands borough	Monmouth	6
Hightstown borough	Mercer	4
Hillsdale borough	Bergen	5
Hillside CDP	Union	10
Hi-Nella borough	Camden	1
Hoboken city	Hudson	13
Ho-Ho-Kus borough	Bergen	5
Holiday City-Berkeley CDP	Ocean	3
Holiday City-Dover CDP	Ocean	3
Holiday City South CDP	Ocean	3
Holiday Heights CDP	Ocean	3
Hopatcong borough	Sussex	11
Hopewell borough	Mercer	12
Interlaken borough	Monmouth	12
Irvington CDP	Essex	8,10
Iselin CDP	Middlesex	7
Island Heights borough	Ocean	3
Jamesburg borough	Middlesex	12
Jersey City city	Hudson	9,10,13
Keansburg borough	Monmouth	6
Kearny town	Hudson	9,13
Kendall Park CDP	Middlesex	12

HUDSON COUNTY



INSET A



REFERENCE NO. 3

Preliminary Assessment

Interstate Metals Separating Corp.
275 Dukes St.
Kearny, Hudson County, NJ

EPA ID# NJD009717182

Ref. 3

PRELIMINARY ASSESSMENT

INTERSTATE METALS SEPARATING CORP.
AKA INTERSTATE CONCENTRATING CO.
275 DUKES ST.
KEARNY, HUDSON COUNTY, N.J.
EPA ID# NJD009717182

GENERAL INFORMATION AND SITE HISTORY

Interstate Metals Separating Corp. (IMSC) has operated a scrap metal reclamation facility at the subject site since 1943. The site covers 8.41 acres at the foot of Dukes Street (Block 252, Lots 7 and 8) and is bordered by wetland areas to the east and residential/industrial areas of Kearny on the remaining sides. The property is owned by Metals Realty Corp., which purchased the property from Johnson and Brothers File Co., in 1947. IMSC has operated at the site under a lease agreement since that time. Interstate Metals Separating Corp. may have operated under the following names during different periods of time as shown below:

Interstate Concentrating Co. (1946-1951)
Brown Metal Co. (1949-1956)
Alloys Trading Corp. (1956-1977).

SITE OPERATIONS OF CONCERN

IMSC facility operations included the following processes with approximate time periods shown below:

1. brass reclamation (late 1940's to present)
2. solder reclamation (1945 to present)
3. slag separation (1940's and 1950's)
4. nickel alloy processing (1950's)
5. mercury recovery (late 1950's to early 1960's)
6. copper recovery (1969 to 1976)

Operations currently active include brass and solder reclamation. Brass residues are recovered mechanically by a water process. Solder reclamation involves heating scrap gas meters in a rotary kiln for recovery of the melted solder. Metals handled in above processes include the following substances: antimony, chromium, copper, lead, mercury, tin, and zinc. Residues from past slag separation, brass reclamation, and mercury recovery were discharged into a vacant low-lying section of the property to the north. IMSC also received scrap aluminum from the U.S. military during the late 1940's, which was subsequently buried onsite.

During 1980 and 1981 the facility received 200-300 tons of waste rock, consisting of cement rock slabs from a factory floor of an industry in Maine which used mercury in their process. It was thought that the material contained large amounts of mercury so it was shipped to the Interstaste facility to recover the mercury. Based upon analyses of rock samples submitted by IMSC the EPA determined that the material was non-hazardous and it was shipped offsite for disposal.

Kearny Health Department files contain reports of open slag piles of metal-sand on the facility property during the 1970's. The slag piles were

subsequently removed during 1976 for use as landfill material (location unknown).

GROUNDWATER ROUTE

The site is underlain by 6-10 feet of fill material and about 30 feet of sands and silts. A clay layer of unknown extent was encountered at a depth of 38 feet during site investigations by the consulting firm J.H. Crow Company. The principal aquifer unit in the area is the Brunswick Formation, which occurs below depths of 100-200 feet in this area and is used for industrial purposes.

There are 8 monitoring wells at the site which range in depth from 12 to 38 feet. An environmental report submitted by J.H. Crow Company 9/8/87 on behalf of IMSC contains soil and groundwater sampling data. Groundwater samples were sent to Industrial Corrosion Management to be analyzed for selected metals (copper, cadmium, chromium, lead, mercury, zinc), pH and conductivity. Several metal contaminants were detected in groundwater beneath the site including low levels of copper, lead, and mercury.

Ground water in the area is not used for drinking. No public or private potable wells were identified within a 3 mile radius of the site. Several industrial supply wells are located within 1-2 miles and are on the order of 200-700 feet deep. The potential for further ground water contamination exists due to the extensive soil contamination which has been documented at the site.

SURFACE WATER ROUTE

The nearest downslope surface water is Frank Creek, which is located about 1/2 mile east of the site and flows south before emptying into the Passaic River about 1 mile away. The potential for contaminants at IMSC to affect the above-mentioned surface water is low due to the distance from the site. There is an onsite lagoon which is reportedly used for process water and a pond which receives stormwater runoff. Water and sediment samples collected from the lagoon and pond indicate heavy metal contamination. Samples collected by J.H. Crow were analyzed by Industrial Corrosion Management for metals, pH, and conductivity.

AIR ROUTE

Due to the nature of operations at the IMSC facility, air contamination with metal oxides and particulates may occur if the scrubber is not operating properly. The facility has an air permit for a scrubber which is used in the solder recovery process which involves heating scrap gas meters in a kiln. Windblown dust from the site may also present a potential for air contamination. Kearny Health Department files contain complaints from area residents concerning contaminated dust from motorbike activity on unfenced portions of the site.

SOIL

Soil sampling has been conducted on several occasions by NJDEP personnel during 1981 and 1985, and J.H. Crow Company in 1987. Analytical data show gross contamination of soil with heavy metals such as copper, cadmium, lead, mercury, and zinc to depths up to 8-12 feet. PAH and PCB contamination were also detected in soil samples collected onsite. A rough estimate of the contaminated area would be about 100,000 cubic yards, assuming all 8.4 acres were contaminated to a depth of 8 feet.

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DIRECT CONTACT
There have been no reported incidents of direct contact with contaminated areas onsite, however the potential exists since soil contamination has been identified in unfenced areas at the facility. A former employee of Interstate Metals has claimed to be a victim of mercury poisoning from exposure while working at the plant. The facility currently employs about 20 people; the potential exists for employees to become exposed to contaminated areas onsite.

FIRE AND EXPLOSION
Although smelting furnaces are used at the plant, the types of substances involved do not pose a potential for fire or explosive conditions.

ADDITIONAL CONSIDERATIONS
The potential for damage to flora and fauna exposure exists due to documented soil contamination and possible migration of contaminants into nearby wetland areas. Contamination of the food chain is also possible since heavy metals could impact wetland areas to the northeast. Soil contamination detected near the property border and migration of contaminated groundwater indicates a potential for damage to offsite property.

ENFORCEMENT ACTIONS
IMSC has hired the consulting firm J.H. Crow Company to investigate the extent of contamination, under the direction of NJDEP/DHWM Enforcement. A report containing soil and groundwater sampling data was submitted to NJDEP on 9/8/87. Additional sampling for EP Toxicity and offsite contamination has been requested by DHWM/Metro Regional Office.

RECOMMENDATIONS:
A high priority is assigned to the site due to the gross metal contamination which has been identified. Previous soil sampling and elevated OVA readings at several onsite locations warrant additional sampling for priority pollutants for soil and groundwater. NJDEP/DHWM Enforcement has requested EP Toxicity testing of onsite soils and an offsite investigation of contamination. The case is being transferred to the Bureau of Case Management.

Submitted By:

Ed Gaven, HSMS III
Bureau of Planning and Assessment
7-20-88

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Interstate Metals Separating Corp.	275 Dukes St.				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Kearny	NJ	07032	Hudson		
09 COORDINATES LATITUDE 40° 45' 07"	LONGITUDE 74° 08' 37"	Block 252	Lots 7 and 8	8.41 acres	

10 DIRECTIONS TO SITE (Starting from nearest public road)

NJ Turnpike north to Exit 15W; bear right onto Harrison Ave. Right at first light, Schuyler Ave., and right onto Dukes St. Facility is at the foot of Dukes St.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Metals Realty Corp.	275 Dukes St.		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Kearny	NJ	07032	(201) 998-7660
07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)		
Interstate Metals Separating Corp.	275 Dukes St.		
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Kearny	NJ	07032	(201) 998-7660

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ☒ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES DATE 2 / 2 / 88 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)

☐ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1946 (BEGINNING YEAR) Present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Metals including cadmium, chromium, copper, lead, mercury, nickel, and zinc.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Soil is contaminated with various metals including cadmium, chromium, copper, lead, mercury, nickel, and zinc. Metal contamination was also detected in groundwater and an onsite pond and lagoon. Soil contamination was detected in unfenced portions of facility.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☒ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NUMBER
Ed Phillips	NJDEP/DHWM Metro Region Enforcement			(201) 669-3960
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Ed Gaven	NJDEP	DHWM/BPA	(609) 292-4320	8 / 8 / 88 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- X A. SOLID
- B. POWDER, FINES
- X C. SLUDGE
- D. OTHER _____ (Specify)
- E. SLURRY
- F. LIQUID
- G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS: Unknown
CUBIC YARDS: Unknown
NO. OF DRUMS: Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- X A. TOXIC
- B. CORROSIVE
- C. RADIOACTIVE
- X D. PERSISTENT
- E. SOLUBLE
- F. INFECTIOUS
- G. FLAMMABLE
- H. IGNITABLE
- I. HIGHLY VOLATILE
- J. EXPLOSIVE
- K. REACTIVE
- L. INCOMPATIBLE
- M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSC	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Beryllium	~~7440-41-7~~		~~32.3~~	~~ppm~~
MES	Cadmium	7440-43-9		414	ppm
MES	Chromium	7440-47-3	Concentration shown	915	ppm
MES	Copper	7440-50-8	are the highest	70,800	ppm
MES	Lead	7439-92-1	levels detected in	38,600	ppm
MES	Mercury	~~7439-97-6~~	soil samples.	3,470	ppm
MES	Nickel	~~7440-02-0~~		18,800	ppm
MES	Selenium	7782-49-2		30	ppm
MES	Silver	7440-22-4		301	ppm
MES	Zinc	7440-66-6		514,000	ppm
SOL	Chloroform	~~67-66-3~~		2.74	ppb
SOL	Methylene chloride	~~75-09-2~~		79.2	ppb
SOL	Trichloroethylene	~~79-01-6~~		3.99	ppb
OCC	Anthracene	~~120-12-7~~		3000	ppb
OCC	Benzo(a)anthracene	~~56-55-3~~		665	ppb
OCC	Benzo(b)fluoranthene	205-99-2		1200	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
NJDEP Sampling Episode, ETC Analytical Data (Ref. C)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [x] A. SOLID
- [ ] B. POWDER, FINES
- [x] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [x] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [x] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS numbers) Continued

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Fluoranthene	86-73-7		1,590	ppb
OCC	Hexachlorobenzene	118-74-1	concentrations	989	ppb
OCC	Hexachloroethane	67-72-1	shown are the	1,200	ppb
OCC	Phenanthrene	85-01-8	highest levels	941	ppb
OCC	Pyrene	129-00-0	detected in	1,400	ppb
OCC	Arochlor-1254	11097-69-1	soil samples.	2,900	ppb

V. FEEDSTOCKS (See Appendix for CAS numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NJDEP Sampling Episode, ETC Analytical Data (Ref. C)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X A. GROUNDWATER CONTAMINATION — 02 X OBSERVED (DATE 9/8/87) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Groundwater samples show contamination with metals including copper (510 ppb), lead (290 ppb), and mercury (35 ppb).

Ref. A

01 X B. SURFACE WATER CONTAMINATION — 02 X OBSERVED (DATE 9/8/87) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Water and sediment samples from an onsite lagoon and pond indicate heavy metal contamination. The lagoon is reportedly used for process water by the facility. Frank Creek is located about 1/2 mile to the east.

Ref. A

01 X C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Due to the nature of operations air contamination with metal oxide particulates may occur if scrubber is not operating properly. Windblown dust from the site may also present a potential for air contamination.

Ref. T,U,X

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Although smelting furnaces are used at the plant, the substances involved do not pose a potential for fire/explosive conditions.

01 X E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Contamination has been identified in unfenced portions of the site, representing a potential for direct contact.

Ref. A

01 X F. CONTAMINATION OF SOIL — 02 X OBSERVED (DATE 9/8/87) — ☐ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED 8 4 — 04 NARRATIVE DESCRIPTION

Soil is contaminated with heavy metals to depths up to 8 feet. Soil samples have also shown PAH and PCB contamination.

Ref. A,C

01 X G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Potential for drinking water contamination is low since public water is supplied from outside sources, although vertical migration of contaminants may affect deeper aquifers.

01 X H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — X POTENTIAL — ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

A former employee of Interstate Metals has claimed to be a victim of mercury poisoning from exposure while working at the plant. The potential exists for employee exposure to heavy metal contamination onsite. Ref. I

01 X I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Access to the site is possible since a portion of facility is unfenced. Area residents have complained of contaminated dust in the air as a result of motorbike activity.

Ref. U,X

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] J. DAMAGE TO FLORA — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists due to extensive heavy metal contamination and nearby wetlands.

01 [X] K. DAMAGE TO FAUNA — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists due to documented heavy metal contamination and nearby wetland areas.

01 [X] L. CONTAMINATION OF FOOD CHAIN — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists due to documented heavy metal contamination and nearby wetland areas.

01 [X] M. UNSTABLE CONTAINMENT OF WASTES — 02 [X] OBSERVED (DATE 9/8/87) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Residues and tailings from brass reclamation and mercury recovery were dumped onsite during past operations. An unknown amount of alumium foil was also buried at the site. Ref. A

01 [X] N. DAMAGE TO OFFSITE PROPERTY — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists through surface runoff and possible migration of contaminated groundwater. Soil samples collected near the property border show high levels of heavy metals. Ref. A

01 [X] O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Sewer and storm drains which run through the property are reported to be damaged.

Ref. A,X

01 [X] P. ILLEGAL/UNAUTHORIZED DUMPING — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Hazardous materials generated as waste have been deposited throughout the site and used to fill in the marsh land.

Ref. A

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

During periods of heavy rainfall, raw sewage has been observed seeping to the surface from damaged sewer lines which run through the property.

Ref. A,X

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
NJDEP SAmpling Episode, ETC Sampling Data (Ref. C)
Trenton Dispatch Notification Report (Ref. I)
NJDEP Air Permit for Scrubber System (Ref. J)

EPA FORM 2070-13 (7-81)

Correspondence: Ecology International to Kearny Health Dept. (Ref. U)

Kearny Health Dept. Correspondence (Ref. X)

p.10

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A NPDES				
☐ B UIC				
☒ C AIR	Plant ID #10232	11/25/79	11/25/89	Metal roasters with scrubber
☐ D RCRA				
☐ E RCRA INTERIM STATUS				
☐ F SPCC PLAN				
☐ G STATE (Specify)				
☐ H LOCAL (Specify)				
☐ I OTHER (Specify)				
☐ J NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☒ B. PILES	Unknown	
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☒ E. TANK, BELOW GROUND	4,000	Gal.
☒ F. LANDFILL	Unknown	
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☒ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER
- ☒ A. BUILDINGS ON SITE

06 AREA OF SITE: 8.41 Acres

07 COMMENTS

01B. Slag piles containing metallic particles mixed with sand and piles of waste rock have been removed from the site.

01E. Two active 2,000-gallon tanks contain No. 2 fuel oil.

01F. Residues from brass reclamation and mercury recovery were discharged onto the ground at the site. An unknown amount of scrap aluminum is buried onsite.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)
- ☐ A. ADEQUATE, SECURE
- ☐ B. MODERATE
- ☒ C. INADEQUATE, POOR
- ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Documented soil contamination indicates unstable containment of wastes.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☒ YES ☐ NO

02 COMMENTS

Contaminated areas in an unfenced portion of the site have been identified.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

IMSC Environmental Report - J. H. Crow Co. (Ref. A)
NJDEP/DHWM Enforcement Inspection (Ref. F)
NJDEP Underground Storage Tank Questionnaire (Ref. J)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. X	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. X
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 20-25 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING
☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)
X C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)
☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER NA

03 DISTANCE TO NEAREST DRINKING WATER WELL >3 (mi)

04 DEPTH TO GROUNDWATER 2-4 (ft)

05 DIRECTION OF GROUNDWATER FLOW West

06 DEPTH TO AQUIFER OF CONCERN >100 (ft)

07 POTENTIAL YIELD OF AQUIFER _____ (gpd)

08 SOLE SOURCE AQUIFER ☐ YES X NO

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

There are no major public or private potable supply wells within 3 miles of the site. Several industrial supply wells are located within a 1-2 miles and are on the order of 200-700 feet deep, drawing from the Brunswick formation. The Town of Kearny receives water from the North Jersey District Water Supply Commission.

10 RECHARGE AREA ☐ YES ☐ NO COMMENTS

11 DISCHARGE AREA ☐ YES ☐ NO COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION, DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
X C. COMMERCIAL, INDUSTRIAL
☐ D. NOT CURRENTLY USED

02 AFFECTED, POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Onsite lagoon/pond	X	Onsite (mi)
Frank Creek	☐	0.5 (mi)
Passaic River	☐	1.0 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 17,800 NO. OF PERSONS	B. 57,800 NO. OF PERSONS	C. 155,300 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION < 0.10 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE Numerous

04 DISTANCE TO NEAREST OFF-SITE BUILDING < 0.10 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Site is located in an industrial area with residential areas of Kearny located a few hundred feet to the west. Population within 3 miles of site includes Kearny, Harrison, North Arlington, and portions of Belleville, Lyndhurst, and Newark.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one) — Fill material

☐ A. 10^{-1} – 10^{-6} cm/sec ☐ B. 10^{-4} – 10^{-6} cm/sec ☒ C. 10^{-4} – 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one) — Shale

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☒ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
>100 (ft)	8-12 (ft)	6.85-11.55

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
12 (in)	2.5 (in)	<1 %	East-northeast	<1 %

09 FLOOD POTENTIAL: NA

SITE IS IN ____ YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND COASTAL HIGH HAZARD AREA RIVERINE FLOODWAY NA

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A 0.25 (mi) OTHER: B ____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species): ____ (mi) NA

ENDANGERED SPECIES ____

13 LAND USE IN VICINITY

DISTANCE TO: COMMERCIAL/INDUSTRIAL — A <0.10 (mi); RESIDENTIAL AREAS/NATIONAL/STATE PARKS/FORESTS/OR WILDLIFE RESERVES — B <0.10 (mi); AGRICULTURAL LANDS: PRIME AG LAND — C NA (mi); AG LAND — D ____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is relatively flat. Surface runoff flows from higher elevations along Dukes St. and Tappan St. to the east across the site, and may collect in the onsite lagoon and pond. Elevations range from over 6 feet above MSL on the upland portion of the site to below sea level in the storm water pond and lagoon. The site is underlain by approximately 3 feet of fill material, 3-7 feet of organic material (meadowland mat), and sands and silts to depths of 30-40 feet. A clay layer was encountered at 38 feet during the J.H. Crow Co. investigation

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USGS Quad Map
IMSC: Environmental Report - J.H. Crow Co. (Ref. A)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	8	Industrial Corrosion Management Randolph, NJ	Available
SURFACE WATER	6	Same as above	
WASTE	2	Stablex-Reuter, Camden, NJ	Available
AIR			
RUNOFF			
SPILL			
SOIL	102 2	Industrial Corrosion Management Environmental Testing Corp., Edison, NJ	Available
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
pH, conductivity	Soil pH 6.85-11.55; lagoon water pH 10.0
OVA (soil gas)	OVA readings at soil headspace: copper processing building
	1000 ppm; between building and pond 70-300 ppm; eastern edge
	of pond 700 ppm.
Geiger Counter	Area between brass operations and lead smelting bldg: 21 micro R/Hr

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS NJDEP/DHWM Metro Region Office

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
NJDEP - Sampling Episode, ETC Sampling Data (Ref. C)
NJDEP Site Inspection, Sampling Data (Ref. O)
NJDEP/DHWM/BPA Pre-sampling Assessment (Ref. E)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
Metals Realty Corp.	NA

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
275 Dukes St.	NA

05 CITY	06 STATE	07 ZIP CODE
Kearny	NJ	07032

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

PARENT COMPANY (if applicable)

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER
Johnson & Brothers File Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER
Mendel Samuel & Sons, Inc.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER
Metals Realty Corp.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
275 Dukes St.	

05 CITY	06 STATE	07 ZIP CODE
Kearny	NJ	07032

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Kearny Tax Assessor's Office 201-991-2700

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME: Interstate Metals Separating Corp.	02 D+B NUMBER: 00-971-5079
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 275 Dukes St.	04 SIC CODE: 3341 5093
05 CITY: Kearny	06 STATE: NJ / 07 ZIP CODE: 08032
08 YEARS OF OPERATION: 1943-Present	09 NAME OF OWNER:

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME: NA	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE:
14 CITY	15 STATE / 16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME: None identified	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE:
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (List most recent first)

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NJDEP Information Resource Center 609-984-2249

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. ON-SITE GENERATOR

01 NAME	02 D-B NUMBER
NA	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D-B NUMBER	01 NAME	02 D-B NUMBER
NA			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D-B NUMBER	01 NAME	02 D-B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D-B NUMBER	01 NAME	02 D-B NUMBER
NA			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D-B NUMBER	01 NAME	02 D-B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. PAST RESPONSE ACTIVITIES NA

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES SUMP — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II PAST RESPONSE ACTIVITIES (continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING COVERING — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE 1976, 1981 03 AGENCY _____
04 DESCRIPTION

Waste slag piles containing metals mixed with sand were removed in 1976; waste rock which may have contained mercury removed in 1981.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Correspondence: Waste Pile Removal (Ref. W)
Kearny Health Department Correspondence (Ref. X)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

Interstate Metals Separating Corp. has hired a consulting firm, J.H. Crow Company to investigate the extent of contamination. An environmental report containing soil and groundwater sampling data was submitted to DHWM Enforcement in September 1987.

Additional sampling is ongoing at the request of DHWM Enforcement.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
Correspondence: NJDEP/DHWM Enforcement to IMSC (Ref. D)

EPA FORM 2070-13 (7-81)

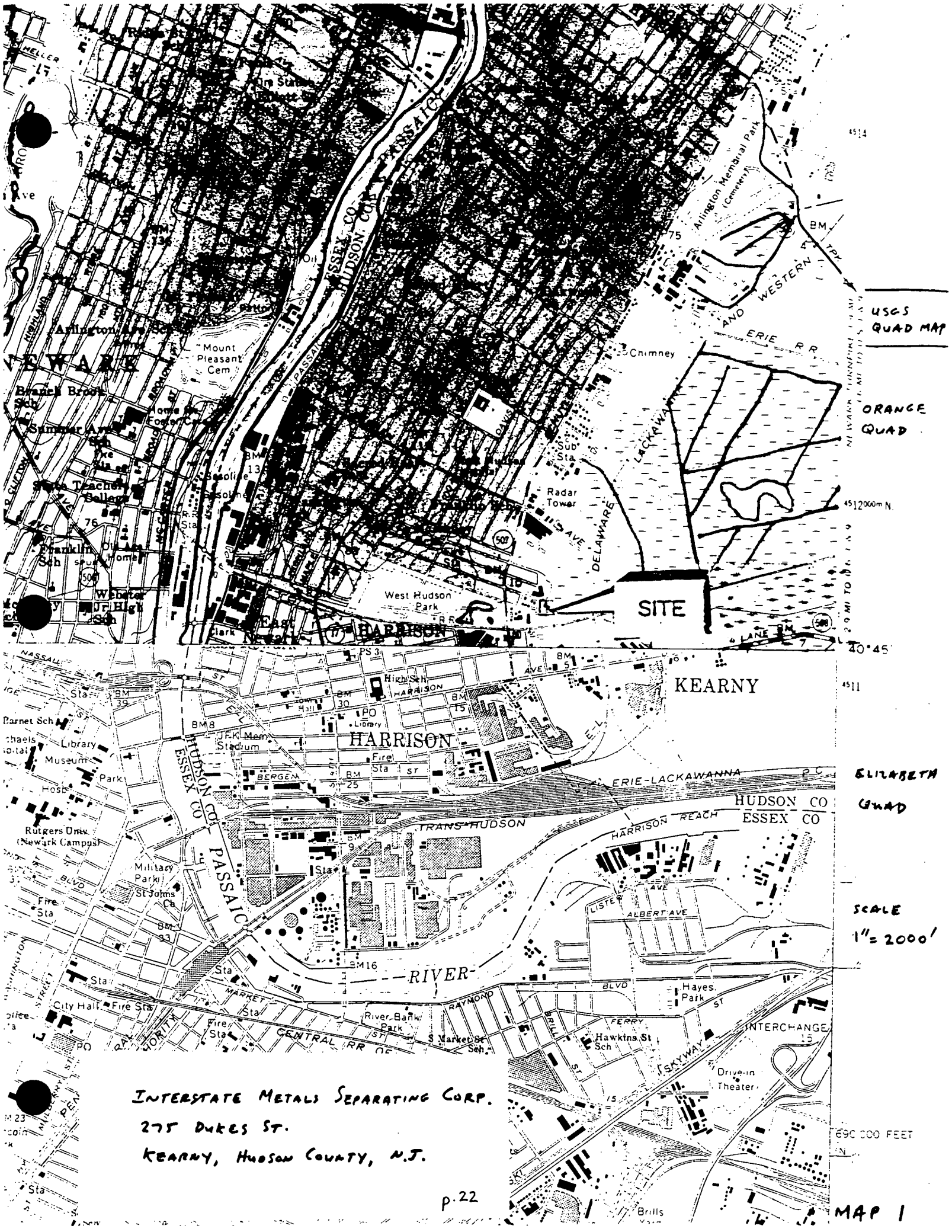
INTERSTATE METALS SEPARATING CORP.
REFERENCES

MAPS

1. USGS QUAD MAP
2. TOWN OF KEARNY TAX MAP
3. NJDEP/DWR WATER SUPPLY OVERLAY MAP #26
4. NJDEP/DWR GEOLOGIC OVERLAY MAP #26

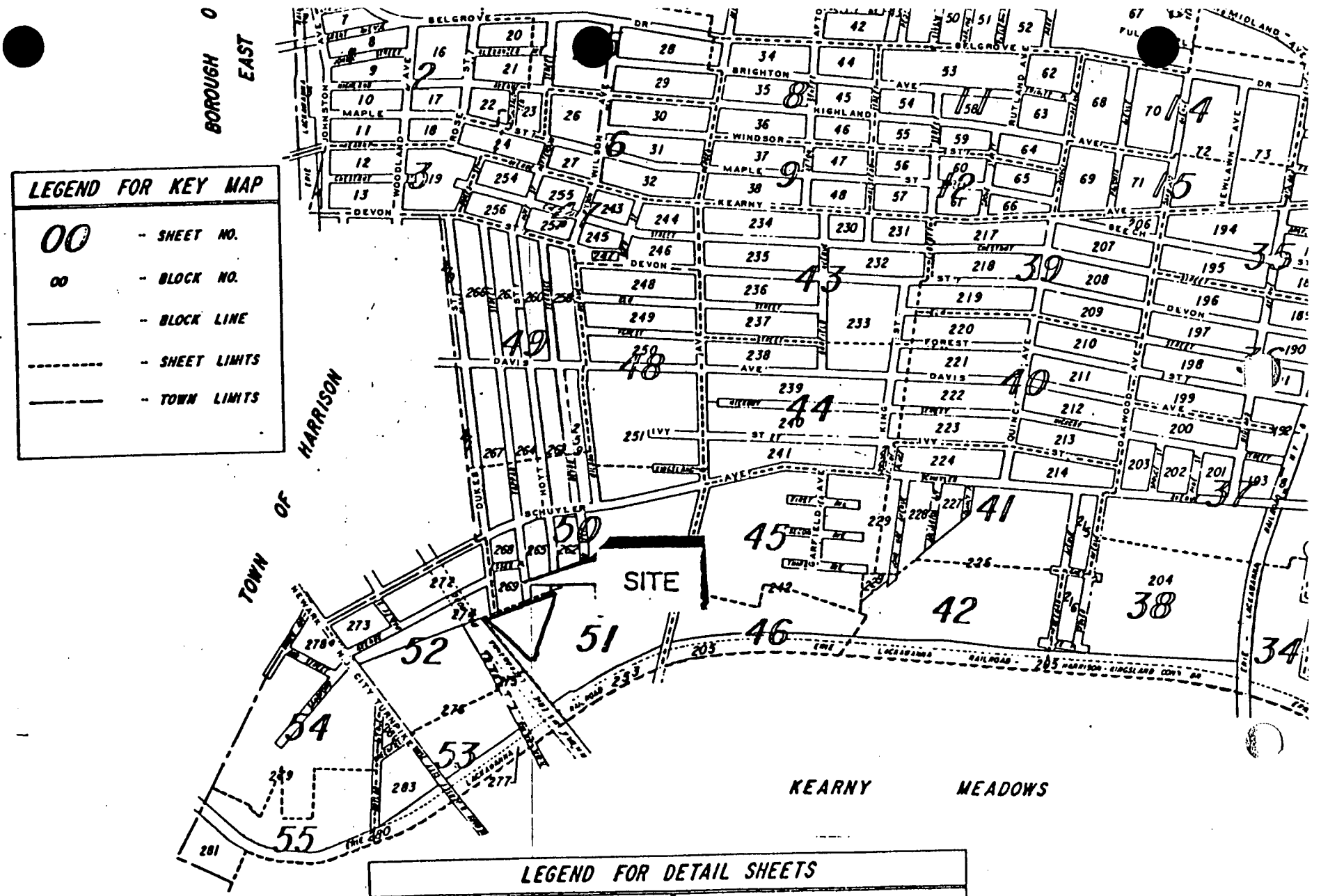
ATTACHMENTS

A.	IMSC ENVIRONMENTAL REPORT - J.H. CROW CO.	9/87
B.	IMSC SUPPLEMENTAL ENVIRONMENTAL REPORT - J.H. CROW CO.	3/88
C.	NJDEP SAMPLING EPISODE, ETC ANALYTICAL DATA	9/87
D.	CORRESPONDENCE: NJDEP TO IMSC	4/27/88
E.	NJDEP/DHWM/BPA PRE-SAMPLING ASSESSMENT	2/2/88
F.	NJDEP/DHWM ENFORCEMENT INSPECTION	11/24/87
G.	MEMO TO FILE: INTERVIEW WITH FORMER EMPLOYEE	11/13/87
H.	CORRESPONDENCE, DHWM ENFORCEMENT TO BPA REQUEST FOR PA.	9/16/87
I.	TRENTON DISPATCH NOTIFICATION REPORT	1/22/87
J.	NJDEP UNDERGROUND STORAGE TANK QUESTIONAIRE	8/87
K.	MEMO TO FILE: NJDEP/DHWM MEETING WITH IMSC	1/10/86
L.	NJDEP/BEERA MEMO: REVIEW OF SOIL DATA	8/20/85
M.	HUDSON REGIONAL HEALTH COMMISSION SOIL SAMPLING, CORRESPONDENCE.	7/85
N.	NJDEP SITE INSPECTION	5/14/81
O.	NJDEP SITE INSPECTION, SAMPLING DATA	3/24/81
P.	NJDEP CORRESPONDENCE: WASTE ROCK CLASSIFICATION	2/11/81
Q.	EPA CORRESPONDENCE: WASTE ROCK CLASSIFICATION	1/29/81
R.	CORRESPONDENCE: NJ DEPT. OF LABOR TO EPA	12/23/80
S.	INTERNATIONAL TESTING LABORATORIES SAMPLING DATA.	8/26/80, 12/3/80
T.	NJDEP AIR PERMIT - METAL KILN SCRUBBER	10/12/72
U.	CORRESPONDENCE: ECOLOGY INTERNATIONAL TO KEARNY HEALTH DEPT.	8/78
V.	HUDSON MUNICIPAL AIR POLLUTION COMMISSION FIELD INVESTIGATION REPORT.	2/6/73, 8/22/78
W.	CORRESPONDENCE: KEARNY HEALTH DEPT./IMSC	1976-1986
X.	NJDEP WELL RECORDS INFORMATION	



INTERSTATE METALS SEPARATING CORP.
275 DUKES ST.
KEARNY, HUDSON COUNTY, N.J.

MAP 1



INDEX MAP
TOWN OF KEARNY
HUDSON COUNTY, NEW JERSEY
1973 (70)

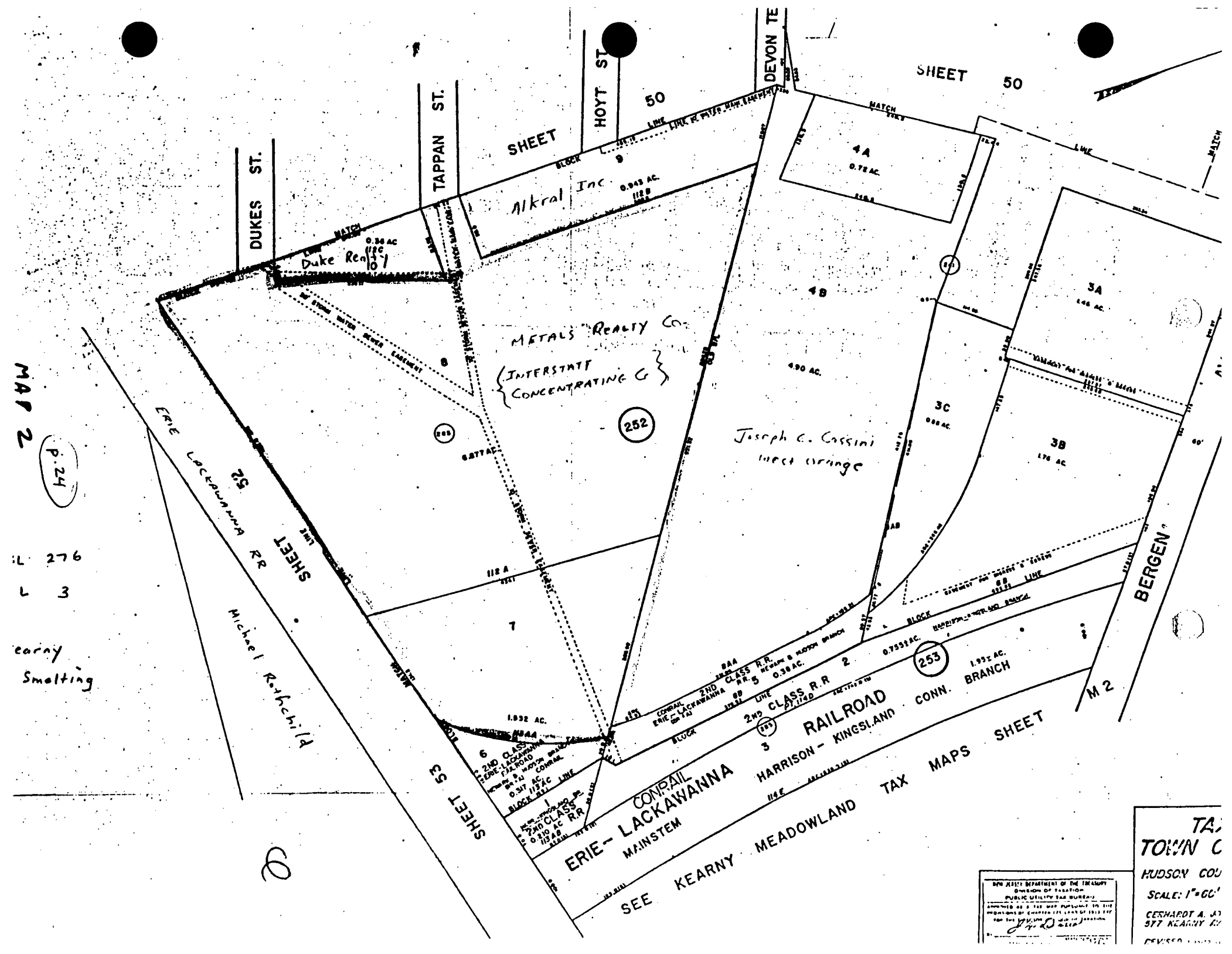
354A

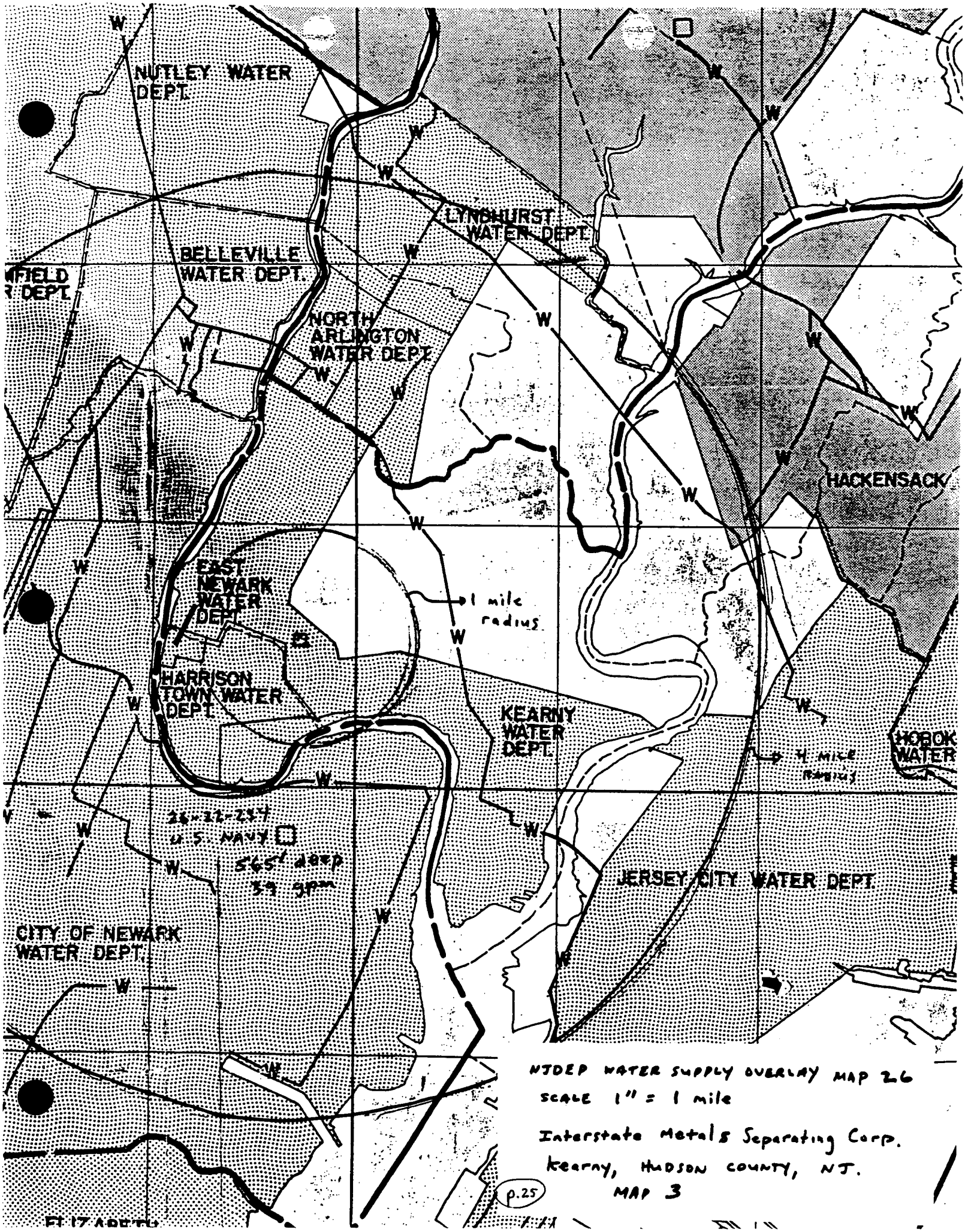
LEGEND FOR DETAIL SHEETS

00	- NEW BLOCK NO.
00	- OLD BLOCK NO.
(SLANTED NO.) 00 REAR OF LOT	- OLD LOT NO.
(VERTICAL NO.) 00 FRONT OF LOT	- NEW LOT NO.
B/L	- BLOCK LINE
	- OLD LOT LINE
	- NEW LOT LINE
	- EASEMENTS
	- BLOCK LINE
	- TOWN LIMITS

MAP 2

P. 23


SHEET 50
DUKES ST.
TAPPAN ST.
HOYT ST.
DEVON TE
Alkral Inc
Duke Rental
METALS REALTY CO.
(INTERSTATE CONCENTRATING C)
Joseph C. Cassini
West Orange
4A
4B
3A
3B
3C
252
253
SHEET 52
SHEET 53
ERIE LACKAWANNA RR
Michael Rothchild
Kearny Smelting
ERIE-LACKAWANNA RAILROAD
CONRAIL
MAINSTEM
HARRISON - KINGSLAND CONN. BRANCH
SEE KEARNY MEADOWLAND TAX MAPS SHEET
BERGEN
M2
MAP 2
P. 24
L 276
L 3
NEW JERSEY DEPARTMENT OF THE TREASURY
DIVISION OF TAXATION
PUBLIC UTILITY TAX BUREAU
HUDSON COU
SCALE: 1"=60'



NJDEP WATER SUPPLY OVERLAY MAP 26
SCALE 1" = 1 mile

Interstate Metals Separating Corp.
Kearny, HUDSON COUNTY, N.J.
MAP 3

BUREAU OF
KEMBLE WE

COMPILATIO

LEGEND

AREA SERVED BY PRIVATE WATER SERVICE COMPANIES

AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIES

AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIES

AREA NOT PRESENTLY SERVED BY WATER SERVICE

PUBLIC SUPPLY WELLS

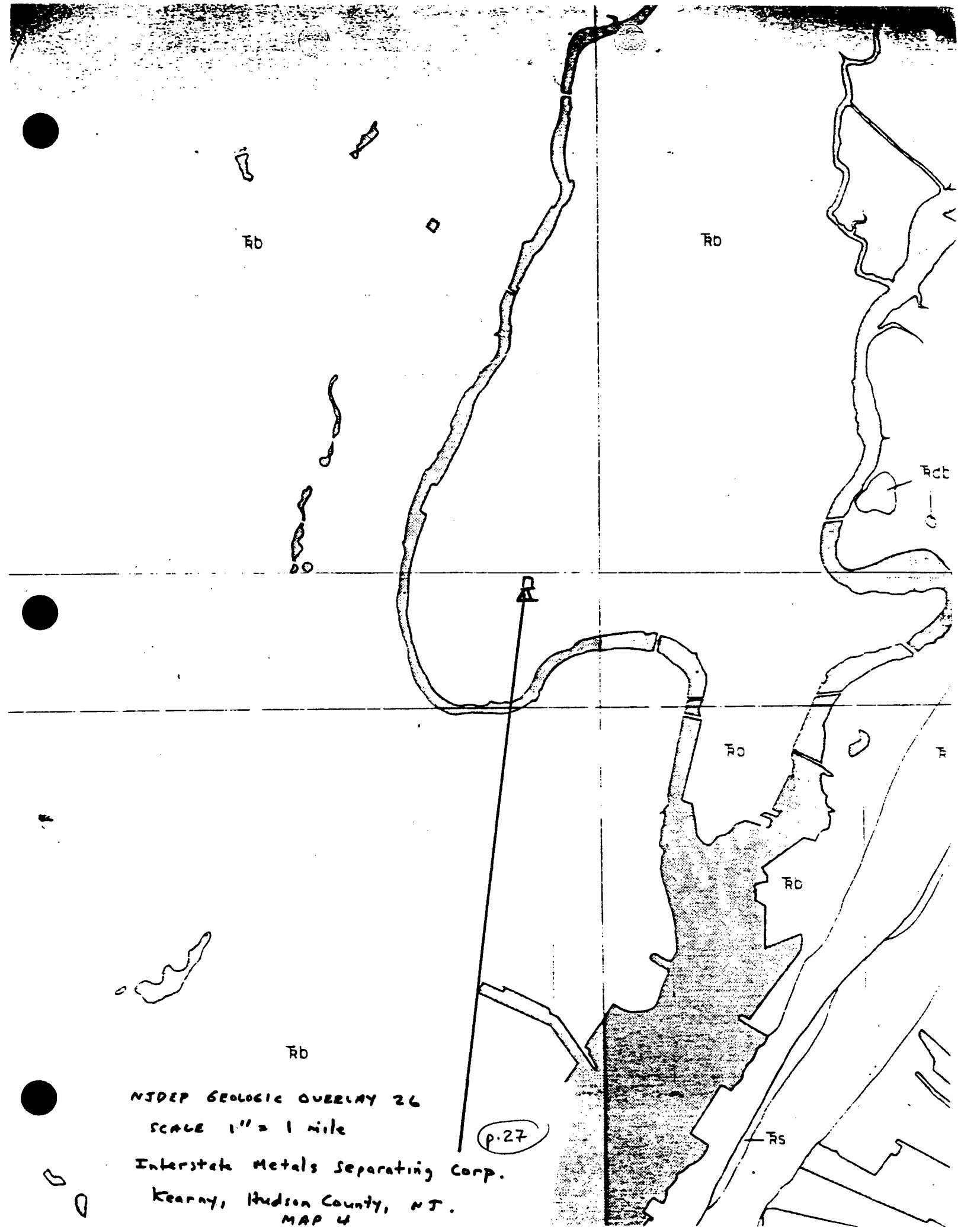
SURFACE WATER INTAKE

—W— MAJOR WATER MAINS

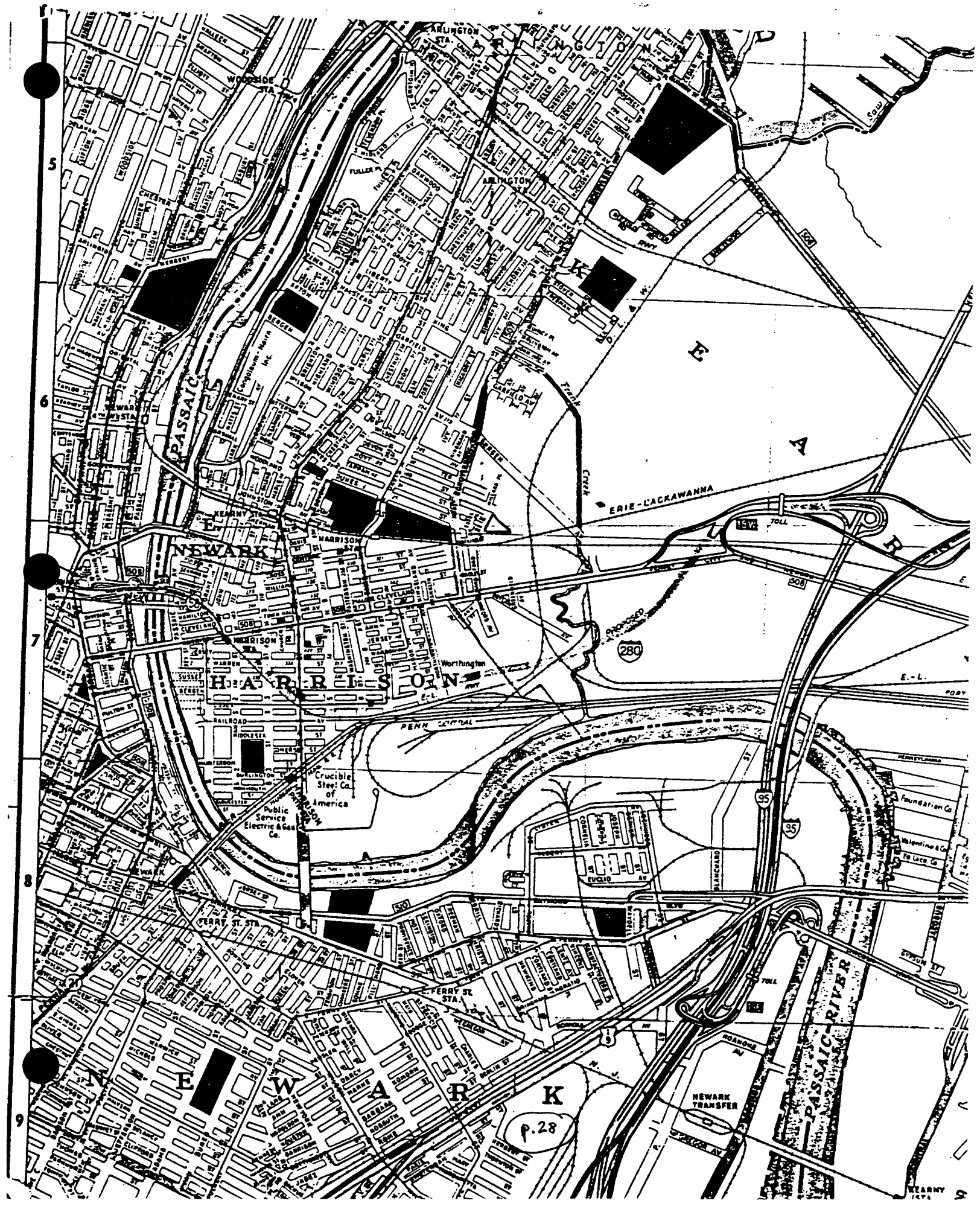
TOWNSHIP BOUNDARIES

COUNTY BOUNDARIES

STATE BOUNDARIES



NJDEP GEOLOGIC OVERLAY 26
SCALE 1" = 1 mile
Interstate Metals Separating Corp.
Kearny, Hudson County, NJ.
MAP 4



ARLINGTON STA.
WOODSIDE STA.
ARLINGTON STA.
PASSAIC
NEWARK
HARRISON
Worthington
Crucible Steel Co. of America
Public Service Electric & Gas Co.
FERRY ST. STA.
E. FERRY ST. STA.
ERIE-LACKAWANNA
PENN CENTRAL
Foundation Co.
Valentine & Co.
Fe Lace Co.
NEWARK TRANSFER
PASSAIC RIVER
NEWARK

INTERSTATE METALS SEPARATING CORP.

Environmental Report

September 2, 1987

Prepared by

John H. Crow, Ph.D.

Anne L. Kruger, Ph.D.

Timir Hore, Ph.D. (pending)

of

J. H. CROW COMPANY, INC.

365B HOFFMAN ROAD
PORT MURRAY, NEW JERSEY 07865
(201) 689-0332

INTERSTATE METALS SEPARATING CORP.
Environmental Report

EXECUTIVE SUMMARY

I. ACTIVITIES ON SITE 1
- A. INTRODUCTION 1
- B. PRESENT ACTIVITIES 2
  - 1. Brass Reclamation Operation 2
  - 2. Solder Reclamation Operation 3
- C. HISTORY OF OPERATIONS ON SITE 3
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INTERSTATE METALS SEPARATING CORP.

Environmental Report

EXECUTIVE SUMMARY

Interstate Metals Separating Corporation reclaims metals by physical processes, for instance, by mechanical and heat processes. It has been operating this business at the same site in Kearny since 1943. During early years some of the residuals from the recovery processes were deposited on the site. In recent years essentially all of the separated materials have been sold and removed from the site.

J. H. Crow Company conducted a comprehensive investigation of the site to learn what, if any, environmental hazards are present. The findings of this investigation, which are discussed in detail in this report, provide the basis for the conclusions given here.

Soil containing one or more toxic metals at levels above the New Jersey Department of Protection (NJDEP) guideline levels of concern was found throughout the site. In order to administer the Environmental Cleanup Responsibility Act (ECRA) the NJDEP has developed a list of contaminants in soil, which occur frequently, with concentrations at which they become of concern, and at which the NJDEP may require remedial or cleanup action. Most of the surface soil on the site is contaminated with one or more metals down to a depth of about four feet. Contamination does not extend much beyond twelve feet in depth. Contaminants include copper, lead, mercury and zinc.

The contaminants are very slightly soluble in surface water and groundwater with which they are in contact on the site. Furthermore, the movement of groundwater away from the site is virtually nil. The routes of dispersion of surficial contaminated soil by wind, water or biota are the only routes of exposure that may be cause for concern.

An additional source of contamination appears to be discharges from the stormwater/sanitary combined sewer of the Town of Kearny, which is located in the ground on the site. Remediation of this environmental problem needs to be addressed in cooperation with the Town of Kearny.

The J. H. Crow Company recommends remedial action which will minimize risks from the contaminated soil. It is recommended that portions of the site, which are not now covered with buildings or paving, be covered with asphalt, or with fabric, which will not pass clay size particles, topped by stones or sod. This mitigation will contain the contaminants in the soil; they will not be able to move via wind, water or biota, and, therefore, their presence will pose an acceptable risk.

INTERSTATE METALS SEPARATING CORP.
Environmental Report

I. ACTIVITIES ON SITE

A. INTRODUCTION

Interstate Metals Separating Corp. reclaims metals. It is in the recycling business. It has been in business at its site in Kearny since 1943. The location of the site is shown on Figure I(1). The site plan is shown in Figure II(1). The operations are described later on in this report.

The company has operated for most of its lifetime during the era before people had became fully aware of environmental concerns. In earlier times, it was an acceptable industrial practice for metal compounds to be used for filling land. The site is located in the Hackensack Meadowlands, close to the foot of the shale outcrop to the west. The site has both upland and marsh. Metal separating operations have been carried out on the upland since 1943 to today. In the early years, metal-bearing materials were washed onto a low-lying area. Then the water would evaporate or drain away, and the material would be shoveled up and sold. Residues were left, and gradually this practice made more dry land which was considered a beneficial effect. [It is well known that there are other areas in the Meadowlands which have been filled with metal-bearing waste materials.] - so this makes it ok!?

As the company has become aware of environmental problems that it might be creating by its processes, it has taken appropriate steps to correct the problems. Some of these actions are summarized in this section. These actions have been taken voluntarily, often before regulations have come into effect.

With a growing awareness of the broad ranging effects of current environmental regulations, including ECRA, on business operations, Interstate retained J. H. Crow Company, Inc., environmental consultants, in mid 1986 to assist them in ascertaining environmental conditions and in decisions about the future of the company and its land. The environmental findings show the cumulative effect of nearly a half century of industrial activities of a business that has been and continues to be necessary for the well-being of this society.] - Are we as a society not dependent upon our environment?

B. PRESENT ACTIVITIES

1. Brass Reclamation Operation

The primary operation at Interstate today reclaims brass and other metals from residues obtained from brass mills. Brass is an alloy containing essentially copper and zinc. The residues are fed via a hopper into a chute which feeds into a ball mill. Next the milled raw materials are separated mechanically by a water process into product of three different size particles: fine concentrates, medium concentrates, and large concentrates. The fine concentrates are generally 82-85% metallics, of which 58-60% is copper. The medium sized particles consist of pieces 1/4 inch to 1 inch in size; they contain 90-94% metallics. The large concentrates are 94-98% metallics, of which approximately 60-66% is copper; they range from ring sized to fist sized. Both the fine and medium concentrates go through a rotary dryer, which removes moisture. They then go through a magnet which separates the iron from the brass. Iron is separated out manually from the large concentrates. All these fractions, three sizes of brass pieces and iron, are sold.

Another product of the above process is middlings. These consist of 28-30% copper and 35-40% zinc. Middlings are an essential input material to the metal refining industry.

Yet another product of this process is zinc residues. Their composition is 45-50% zinc, 6-9% copper, various siliceous earth materials, and trace elements. These are fine, silt size particles. They are carried in the water phase. The zinc residues are separated from the water in a concrete settling basin. The supernatant water is released into a recirculating lagoon. The wet zinc residues are dried, and sold as an essential agricultural soil additive.

The water used in the separation operation, after passing through the settling basin, is temporarily stored in the lagoon and then recirculated through the process. The operation requires some make-up water for the water that is lost through evaporation.

Thus, the only wastes from this process are non-metallic materials that are manually removed from the raw materials before they enter the ball mill. They are ID 27 solid wastes. A small amount of material is lost as air-borne dust. The water used is recirculated. The six different types of separated metal-containing solids are all sold as products. For a reclamation process this operation generates remarkably little waste.

Interstate Metals has reduced its inventory to eliminate stockpiles of raw materials for the brass reclamation process. This was done, at substantial economic loss, specifically to minimize the potential risks to the environment through airborne vectoring of dusts.

2. Solder Reclamation Operation

The raw materials consist of scrap gas meters. These are fed manually into a rotary kiln, where they are heated. The melted solder drips into a pan set approximately a third of the way down the belt. The other components continue along the conveyor. Iron and brass are manually sorted out at the end of the conveyor. The following day, the solder is melted down in a crucible and is poured into pig molds. The composition of the solder is approximately 46% tin, 4% antimony, <1% copper. The remainder consists of lead. The solder pigs are sold to customers; the iron, brass, and other separated metal parts of the meters are also sold as product.

Dross from the melted solder is a product of this process. Dross consists of 35% tin and 37% lead. The dross is sold to a smelter or a refinery.

An air scrubber system for the solder sweating operation was installed in the 1960's when air pollution became a concern. It is still in use today. The scrubber system consists of a flooded elbow and a Venturi separator. The blower system forces air with smoke and gases from the furnace by vacuum into the flooded elbow. The system washes out pollutants and forces cleaned air up the stack. The system is cleaned out periodically. The water is recirculated.

The solder reclamation operation, like the brass reclamation operation, generates very little waste material.

C. HISTORY OF OPERATIONS ON SITE

1. Use of Site before Acquisition by Interstate Metals

Prior to 1943, the site was unused. In 1943 Interstate Metals leased the site. Operations on the site were begun in this period. The company has carried out various scrap metal reclamation operations since then. These operations are described below.

2. Solder Reclamation Operation

Sweating solder out of iron or steel equipment (e.g., meters) was started in 1945. At that time, it was run as a batch operation by putting meters mixed with wood shavings in the open top of a drum-shaped container placed in a tilted position. The wood chips were burned, creating a temperature of approximately 400°F. The solder melted from the equipment and dripped into a pan through a hole in the container. Each batch contained 50-70 meters and about 7 batches were run a day.

A new solder sweating system was installed in 1965. This system is still in use, and is described on page 3. Use of the old batch operation equipment ceased at this time, and the equipment was dismantled. At about the same time, an air scrubber system was added to the operation. This scrubber system is also still in operation. Air emissions from this operation have been permitted by the state of New Jersey since installation (current Certificate No. 7992).

3. Composition Slag Separation Process

Also during the 40's and 50's, Interstate separated composition slags. These slags contained approximately 15% of metallics. The composition of this fifteen percent was approximately 85% copper, 5% tin, 5% zinc, and 5% lead. The residue from this water separation was sluiced off to an empty, low-lying part of the property to the north. This sluicing action took place years ago, when environmental consequences were unanticipated. No such sluicing has been done for 30 years.

4. Brass Reclamation Operation

Brass reclamation operations, which continue to the present day, were started in the late 1940's. At that time the water containing the zinc residues was discharged onto the low-lying portion of the site. A berm was constructed around much of the property in the 1940's to help contain the standing water. When much of the water had been removed from the zinc residues by evaporation, draining off, or seeping into the ground, these residues were sold as a low-grade ore for further refining. This practice then became uneconomical, and unsold residues were removed from the site. Sluicing operations ceased in the mid 1960's.

5. Military Material

Around the end of World War II, Interstate Metals acquired aluminum foil which had been used for chaff. This was later buried on-site at the request of the U.S. military.

6. Nickel Alloy Operation

During the 1950's, Interstate processed nickel alloy material containing nickel, copper, and chromium which originated from a plant in Pennsylvania. A higher grade nickel alloy was obtained from another location. This operation was carried out at the Interstate facility in a joint venture by Interstate and another company in New Jersey.

7. Mercury Reclamation Operation

In the late 1950's or early 1960's, certain companies asked Interstate Metals if it could reclaim mercury from mercury-contaminated dirt. Interstate recovered the mercury and returned the residual soils and other wastes to the companies. Residuals from the operation were sluiced onto the vacant low-lying portion of the property. When, during the 1960's it became evident that environmental and health problems might be caused by this operation, the operation ceased.

Some concrete and other wastes containing mercury, which were owned by Interstate's customers, still remained on-site. Interstate asked its former environmental consultant, Total Environmental Services, to make arrangements to dispose of the remaining materials. These wastes were disposed of as solid waste ID 27. Receipts of this transaction are available.

Some mercury-contaminated soil remains on the site. The New Jersey Department of Environmental Protection has been aware of this situation since its inspection in June 1985.

8. Copper Recovery Operation

In 1969, a copper recovery operation was started in which the insulation was burned off copper wire, including ACSR and weather cable. Insulation was also burned off aluminum wire. The burning operation required some 500 gallons of oil per day, so in 1976, when oil prices rose rapidly, this operation was stopped.

D. PRESENT BUSINESS CONDITIONS

The metals which Interstate recycles are as essential to the U.S. economy and society today as they always have been. Natural ores containing these metals have been mined so extensively that the ores now being processed to obtain virgin metal contain much lower concentrations of metal than the ores that were mined when Interstate started operations in the 1940's. In the 1980's the input materials used by Interstate from which metals are separated contain much higher concentrations of metals than most

natural ores. The technology for processing low-grade natural ores has kept pace with declining concentrations, but the technology for reclaiming metals has changed very little in the past four decades. The recycling technology in use at Interstate today is "state of the art". The U.S. federal government has a policy of protecting stockpiles of strategic metals. Several of the metals being recycled by Interstate are strategic. Their business cannot but become more important economically in the future.

Also, the need for recycling to protect the environment is now widely recognized. There is evidence for this phenomenon in the recent passage of the Mandatory Recycling Act in New Jersey. For this reason alone, it would seem to be a reasonable public policy to try to maintain the viability of small recycling businesses, such as Interstate Metals Separating Corporation.

However, the U.S. economic structures have been sluggish in responding to what should be an increasing demand for recycled metals. Current sluggishness is indicated by the fact that, in recent years, Interstate has lost several markets in the U.S., and its principal market for brass is now India. If the U.S. pursues its strategic metals policy, then markets in the U.S. should improve in the future.

If Interstate's shipments of brass to India were to be cut off, then both the Indian economy and the U.S. balance of payments would be affected negatively. However, Interstate's profit margin on this operation is close to break even. If the company's costs of operation were to increase, the operation would no longer be economically viable.

If Interstate were to cease operations, risks to the U.S. environment would increase because the materials that are presently recycled by Interstate would become hazardous wastes requiring disposal by others. If Interstate were to close its business, the U.S. economy would also suffer, because there is a need for metal recycling operations, and starting up a new business is usually more expensive than retaining an existing viable business.

II. ENVIRONMENTAL FINDINGS

A. METHODS OF STUDY

Most of the site is barren of vegetation in spite of the fact that the hydrologic regime should be conducive to the growth of wetland and upland vegetation. This phenomenon is frequently evidence of soil contamination. In the first phase of the study, soil borings were taken in the low-lying part of the site. The locations of these borings are shown on Figure II(1), and are labeled A through H. Soil samples were taken at various depths down to eight feet at several locations. They were analyzed for the trace metal elements which have been routinely processed at Interstate since its early days -- copper, zinc, lead, and tin. Tests were also run for the highly toxic elements -- mercury and cadmium. The results of these analyses and more recent sampling are given in Table II(1), which is to be read in conjunction with Figure II(1). As described in section IIB, in all boring locations elevated concentrations of some or all the metals were found in the soil. Also, groundwater was encountered in all borings.

The next questions to be addressed were:

> How has the contamination in the soil affected the ground water quality?
>
> What are the potentials for the metal element contaminants to migrate away from the contaminated soil?

Six shallow and two deeper monitoring wells were installed. Soil samples were obtained from the well bore holes, and then water samples and water levels were taken. Soil borings were made in the upland portion of the site. Also, water samples and sediment samples were taken from the surface water bodies on site: the lagoon for recirculating process water and the pond. All samples were analyzed for copper, zinc, lead, mercury, pH, and specific conductance. Further analyses were not run for tin or cadmium because they were not major components of the first sampling of soils. Chromium analyses were run in some samples because the New Jersey Department of Environmental Protection (NJDEP) had raised a question about the possibility of this element being a contaminant of the site. The results of these investigations are described below.

B. SOIL CONTAMINATION

1. Areal Extent

At all locations on the site where soil samples were taken, concentrations of copper, zinc, lead, and mercury which were above NJDEP acceptable levels were found between the surface and a depth of four feet. All samples of soil taken from the surface down to four feet contained levels of copper in excess of 170 mg/kg, the current NJDEP level of concern, with the exception of boring E at a depth of four feet. The same is true for lead, which has a level of concern of 100 mg/kg. All samples at all locations down to a depth of five feet contained zinc at levels above the level of concern (350 mg/kg). More than three-quarters (78%) of the samples down to a four-foot depth contained mercury at levels above 1 mg/kg, which is the level of concern. The highest concentration of copper above five feet was 64 g/kg, that of lead was 39 g/kg, that of mercury was 35 g/kg, and that of zinc was 445 g/kg, which is 44.5% of the soil. The highest concentration of the four elements (Cu, Pb, Hg, and Zn) found in any soil sample was 60%, which was found at six feet in the boring for monitoring well 3. These data are tabulated in Table II(1). The locations of the borings are shown on Figure II(1). Figures II(2), II(3), II(4), II(5), and II(6) present the data in a different format.

Soil samples were taken from representative areas over most of the site, both the occupied and vacant portions. Thus, it is reasonable to expect that most soils on the site from the surface down to about four feet are contaminated with one or more metal elements. Possible exceptions are the northwest corner of the site and areas underneath the impervious surfaces.

2. Vertical Extent

Data from soil samples taken below four feet depth are also given in Table II(1). These same data are arranged by depth of sample in Table II(2). The means of concentrations for each element at each depth are shown in Table II(3). These averages are shown graphically in Figures II(7) through II(11). Monitoring well 6 was bored to 39 feet below the surface. The combined data from the cluster of wells 6, 7, and 8 are presented in Table II(4) and in Figures II(12) through II(16).

In general, the high levels of contamination taper off between six feet and eight feet deep. At 14 feet and deeper, four of the analyses (only 6%) show a concentration of metallic element above the NJDEP accepted level. These are about two times or less that of the accepted level. They are levels of copper and zinc, which are the least toxic elements of those measured. Three of these samples were from the bottom of the deep borehole for monitoring

well 6 where drilling was stopped because a dense clay material was encountered. Between 18 feet and 35 feet in this borehole no soil contamination was found, in spite of the fact that at the two feet depth the weight of the four elements, copper, zinc, lead and mercury, was 13% of the weight of the soil. The data indicate that, although the top six to eight feet of soil over most of the site is contaminated, the contaminants have not migrated much below the twelve-foot depth.

Statistically, there are sufficient data to assume that the copper and zinc levels found between 37 and 39 feet are natural to the native geologic material, clay. Higher levels of these elements are expected to be associated with the small particles of clay (which have greater surface area) than the larger particles of fine sand and silt (with less surface area) which were found between 18 to 35 feet deep. Also, the naturally occurring groundwater of this site is brackish, which has higher concentrations of these elements than fresh water. In summary, the contamination of the soil on site does not appear to extend much beyond twelve feet in depth.

C. HYDROGEOLOGY

1. Geology

The site is located in the Hackensack Meadowlands between the Passaic River and the Hackensack River. Figure I(1) shows its location. The soils from the soil borings were examined for texture and other physical features. Fill materials of various types, mostly inorganic in nature, were found at the surface down to three feet or more. At many locations between three and seven feet there were soils high in organic content, which are called Meadowland mat and are formed from the decomposing vegetation of the marsh. Beneath these were sands and silts of various grain sizes. Then, at the 38-foot depth in borehole 6, dense clay was found. Drilling was stopped at this depth to avoid penetration of a clay barrier to the passage of ground water. How far beneath the clay the shale bedrock lies is not known.

2. Topography

Figure II(17) shows the topography of the site. Elevations range from over six feet above mean sea level (MSL) on the upland portion of the site to below sea level in the storm water pond and lagoon. The minimal variation in elevation on the site (i.e. lack of relief) and its closeness to sea level are physical limitations that severely limit the range of possibilities for remediation of the contamination of the site.

3. Groundwater Elevations

Table II(5) gives the elevation of the water table in the monitoring wells on various dates. During February and March 1987 the elevation was consistently highest in well 2 and lowest in well 5 of the six shallow wells. These six wells (1, 2, 3, 4, 5, and 8) are screened between 2 to 12 feet or 4 to 14 feet, so these levels define the unconfined surface, that is the water table. The highest water elevation measured at monitoring well 2 was 2.2 feet above mean sea level (MSL). The highest at monitoring well 5 was 0.9 feet MSL . Water level contours estimated from these data, from the readings taken on March 9, are shown on Figure II(18). From these data it appears that the flow of groundwater on the site is in a westerly direction. However, there is a very shallow hydraulic gradient. Between monitoring wells 2 and 5 the gradient is 0.0025 vertical feet per horizontal foot. Also the flow is not towards a surface water or ground water outlet. It appears to be towards the uplands, in the direction of the upward trending shale bedrock, which appears to be a hydrogeologic anomaly.

The water levels taken on August 3 show a slightly different pattern. The level in monitoring well 2 was still the highest, followed by monitoring wells 3, 4 and 8, as before. However, the level in monitoring well 1 was lower than that in monitoring well 5. In fact, the level in monitoring well 1 was below sea level. From March to August the general water table dropped about 0.9 feet. This shift was expected because water levels are generally higher in the "wet" season in early spring and lower in the summer from the effects of evapotranspiration. The shift in the lowest level from monitoring well 5 to monitoring well 1, however, was unexpected. We have no explanation for this apparent shift in direction of flow. The August data are also mapped on Figure II(18).

Monitoring well 7 is screened between 15 and 25 feet, and monitoring well 6 from 27 to 37 feet. In spite of the fact that monitoring wells 6, 7, and 8 are placed close together in a cluster, the water elevation in each is different. On March 17, 1987, the level in 8 was 0.8 feet, in 7 it was 0.6 feet and in 6 it was 0.1 feet. This indicates that the three strata of water measured in these wells are not free to move rapidly from one level to another under a hydraulic, or pressure, gradient, whether upwards or downwards. This means that the water strata are separated from each other by geological material of low permeability. Therefore, even under pressure, water moves slowly between strata. In this case, the hydraulic gradient is downward. Groundwater on this site tends to move from the water table, which is the uppermost layer of groundwater, downwards, deeper into the ground. However, its movement downward is impeded effectively by clay layers in the ground. Logs from the various boreholes made on the site support this observation.

The cluster of monitoring wells (6, 7, and 8) was placed where it was hoped that the surface water elevation would be lower than that at monitoring well 5. It is not. But whether the nadir of the water table is closest to monitoring well 5, or 1, or 8, it appears to be in a depression. This means that all groundwater on the site is tending to flow into this depression and thence deeper into the ground. On August 3 the water levels in monitoring wells 7 and 6 were below sea level. This means that the site is hydraulically isolated from the estuary, and that this inflow is possible. If this is the case, then ground water is not migrating off the site at a significant rate. It is seeping very slowly downward. The actual direction of movement of ground water is still not known, but it is reasonable to conclude from the available data that ground water movement beneath the site is very slow.

4. Surface Water Drainage

Surface water moves onto the site from Dukes Street, Tappan Street, Hoyt Street, and Devon Terrace, and collects on the low-lying portions. There are sewers carrying overflows from combined storm water and sanitary sewers which enter the site from Dukes Street and Tappan Street in the subsurface. Figure II(19), which is derived from a map from the engineer of the Town of Kearny, shows two pipes, one of ten inch diameter and one of 24 inch diameter, flowing downhill towards the Interstate site on Tappan Street, and one pipe of ten inch diameter moving water uphill. Presumably, the two ten inch pipes are designed to carry sanitary wastewater, and the 24 inch pipe is for storm water. During dry periods most of the wastewater is pumped back up the hill into a pipe on Schuyler Avenue. During and after storms stormwater and raw sewage overflow into a pipe in the ground on the Interstate site. ~~Apparently, a similar piping structure is located where Dukes Street abuts the Interstate property~~. The map also shows the two 24 inch diameter pipes for overflow water crossing the Interstate site, coming together well within the site into a 30 inch diameter pipe, and then exiting the site underneath the railroad tracks.

However, during and following storms, it has been observed that water polluted with oil and other materials seeps up to the surface in the middle of the Interstate site along the sewer right-of-way where the pipe is 30 inches. It is apparent that oil and other pollutants are coming onto the site by way of the sewer. We assume that the pipe is not carrying all the storm water and sewage off of the site, that at least part of it empties onto the site. (It should be noted that this pollution is coming from off-site, and that the Town of Kearny is responsible for the maintenance of its sewerage system.)

Storm water also runs off the property to the northeast of Interstate (block 252, lot 4B) and from areas further north onto the Interstate property. The Conrail embankment to the east is a barrier that interferes with water running off the Interstate property to the east and south. There is piping through the embankment that allows the passage of some water from the site.

There may be an outflow for surface water from the Interstate site to the northeast via the channel indicated on the topographic map, Figure II(17). However, the bottom of that channel is not very many inches above sea level, and we have observed water moving onto the site towards the pond, instead of away from the pond. The direction water flows in that channel is probably determined by the difference between the elevation of storm water in the pond and the elevation of tidal water in the Meadowlands. Thus, there probably are times when water can only move onto the site. The flow of surface water appears to alternate between away from the site and onto the site. Because the site is so close to sea level there are problems with managing storm water that would not occur on sites at higher elevations. For some remedial solutions, there is the problem either that flooding would be worsened, or that storm water would have to be directed to a site lower than the Interstate site. Such a site might have to be below sea level where the sea is held back.

We have been informed that, when this site was first developed, there were sea flood gates which physically kept tidal water off the site. They held back the sea. However, these flood gates have not been maintained, and they are no longer functional. The sea is no longer held back, so, flooding at the Interstate site is now perennial.

D. GROUNDWATER QUALITY

Data from the analyses of ground water samples taken from the monitoring wells, as well as the data from the soils associated with the water in these samples, are given in Table II(6). Monitoring wells 1, 2, and 8 were screened at 4 to 14 feet. Monitoring wells 3, 4, and 5 were screened at 2 to 12 feet. Concentrations in water samples from these wells are an integrated function of the solubilities of the various materials with which the water is in contact over this distance. As the data show, the concentrations of a given element in the soils are highly variable throughout this distance. The data from the analysis of water from these wells indicate that the solubilities of the compounds which contain the contaminating elements are quite low, and that many of the levels are less than maximum contaminant levels required for potable water.

In the six monitoring well samples, all concentrations of copper (Cu), mercury (Hg), and zinc (Zn) were below the maximum contaminant levels of 1.0 mg/l, 0.002 mg/l, and 5.0 mg/l, respectively. However, lead (Pb) was above 0.05 mg/l in monitoring wells 1, 2, and 3. The highest level of lead was found in monitoring well 1; it was 290 mg/l, which is 5.8 times greater than permitted for potable water. Chromium (Cr) levels in five of the six wells were above the maximum contaminant level of 0.05 mg/l, but the highest level was only 4.9 times that of the permissible limit for drinking water.

The ratio of the concentration of a particular element in soil to that in water from samples taken in close proximity to each other is high in all but one of the 32 pairs of samples reported on Table II(6). In ten of the pairs of soil/water samples the element was not detected in the water sample. In 21 of the pairs the ratio ranged from 0.7 million to 250 times greater in soil than in water. In only one case, lead was not detected in the soil, but was detected in the water.

Thus, in spite of the high levels of the contaminants in the soils in which these water samples were in contact, about three quarters of the analyses showed levels indicating potability. None of the levels of lead or chromium above the potability standards, by themselves, would be toxic for humans. Furthermore, this water is not used for drinking water and probably never will be.

Water pumped from monitoring well 6, which is screened at the 27 to 37 feet depth, and well 7, which is screened between 15 and 25 feet, was clearer than the near surface samples. No analysis contained an element at a concentration above its standard.

Thus, groundwater from the interstices of highly contaminated soil was only minimally contaminated. The deeper groundwater was not contaminated at all. The data show that the contaminants are virtually immobile in the soil, are not migrating downward in the groundwater, and, therefore, are not contaminating the groundwater.

E. SURFACE WATER QUALITY

Data from six surface water samples taken from the lagoon, which is used for recirculating water used in the brass separation process, and from the storm water pond are also given in Table II(6). In two of the pond water samples, all concentrations measured were less than the standards. The pond sample taken in the area of very high soil contamination had slightly elevated concentrations of lead and mercury. Each of the three lagoon samples had elevated lead concentrations of six times the

standard or less. Although this water can not be considered to be uncontaminated, the concentrations in water are surprisingly low compared to those in the sediments (soil) of the lagoon and pond. The concentration of a particular element in a sediment sample compared to that in a water sample taken nearby is high in all cases. The range in 21 pairs of samples is from 9.5 thousand to 27 million times greater in soil than in water.

F. OTHER ENVIRONMENTAL IMPACTS

1. Air

a. Aeolian (Wind-blown) Transport of Contaminated Soil

The contaminated soils on the surface of the ground and the outdoor piles of raw materials and products are subject to being blown by the winds. The movement of solid particles by wind from raw material and product piles is minimized by wetting down the piles and limiting the number of piles on-site. In the open vacant areas of the site the aggregation of soil materials is good and blowing does not appear to be a significant problem.

b. Emissions from Solder Sweating Operation

Data from the Occupational Safety and Health Administration (OSHA) indicate that this operation is managed so that the low exposure of the workers to lead fumes is acceptable. Lead and other emissions from the stack are appropriately regulated by a New Jersey Department of Environmental Protection air quality permit.

2. Biota

At present the Interstate site presents relatively low risks to humans because exposure is low and the health effects are not acute. Exposure is low because it is a controlled industrial site with a few workers allowed on site. Obviously, people do not drink the water, or eat the soil on-site. The principal risks to people are from breathing contaminated particles or eating food that has come into contact with particles. These risks are minimized by the workers on the site taking appropriate precautions, which conform to OSHA (Occupational Safety and Health Administration) regulations and guidelines. Interstate has an active OSHA program. It has been inspected by OSHA personnel during 1987, and it is in compliance.

However, the risks to other types of biota, or organisms, are more extensive. There is virtually no vegetation on the site, which means that the soil is probably toxic to plants and, in all likelihood, most microorganisms. The climate, geology, topography and location of the site suggest that the site was, in the past, a rich marshland habitat with plentiful, and possibly diverse, wildlife. In fact there is marshland on the adjacent site to the northeast (Block 252, Lot 4B), and many types of birds are visitors to the pond area of the Interstate site. What the effects of the contamination on site have been to birds and other wildlife are not known. We would recommend that the use of this land, in so far as practicable, remain industrial, as it has been zoned for decades. ~~We see no need for its conversion back to a wildlife sanctuary~~. Suggested remediation will minimize the risks to whatever wildlife or domesticated life might visit the site and its environs in the future.

III. REMEDIAL ACTION

A. ENVIRONMENTAL HAZARDS REQUIRING REMEDIAL ACTION

The presence of soil contaminated with various toxic metallic compounds on much of the site makes remedial action advisable. If the site were allowed to remain as is, then air-borne and, possibly, water-borne migration of contaminants would persist. Workers, trespassers, birds, and mammals may be exposed to elevated levels of lead, cadmium, mercury, or other substances. The risks from the contamination would be reduced if the contaminants are restricted from migrating off-site and coming into contact with animals.

Interstate has already taken the precaution of installing a fence around the low-lying area including the pond. This greatly reduces the risk of trespassers entering the site. The upland area has been fenced for many years. There is at least one person on site as watchman for twenty-four hours per day and seven days per week.

The owners of Interstate recognize that the risks posed by the contaminated soil on site must be reduced, and have acted forthrightly to do so. J. H. Crow Company was retained to assess the risks and then to study and evaluate remedial actions to reduce these risks. In the next two sections a number of alternatives are discussed. Finally, one recommended alternative is described, and the reasons for its selection are given.

B. POSSIBLE REMEDIAL ACTIONS

1. Types of Alternatives

Other than the "laissez faire", that is the no action, alternative, which is less than satisfactory, there are three conceptually different remedial actions to consider. These are:

Removal of contaminated soil from site;

Removal of contaminating materials from soil;

Encapsulation of contaminating materials.

Each of these means of trying to reduce hazards is considered in this section.

2. Removal of Contaminated Soil from Site

To assure virtually complete removal of the contaminated soil from the site it would be necessary to strip the soil from the entire site of over eight acres down to a depth of twelve feet. That is about 160,000 cubic yards of soil. It would mean that the buildings now on site would have to be demolished. Digging up the soil and demolishing the buildings would stir up dust and cause some of the contaminants to be spread by air currents and by the equipment and workers on the site. Even if the soil were dry, there is no licensed waste depository in New Jersey which could accept this soil. It would have to be trucked out of state over long distances in many truckloads. The risk of escape of the contaminated soil into an uncontaminated environment caused by a truck accident while on the road is at least proportional to the number of miles traveled. Assuming that the contaminated soil could be safely trucked to a legal hazardous waste depository, the cost of this remedial action would be prohibitive (several millions of dollars).

Furthermore, since the water table is less than twelve feet below the surface at all points on the site, removal of the soil would entail excavation well into the water table to depths beneath sea level. Much of the soil would be wet, and there is no legal depository for wet soil. Drying the soil would add many millions of dollars to the cost, if it could be done.

Without filling the site afterward, it would be a lake with brackish water which would be completely unusable, and structures on surrounding properties would eventually be undermined. With filling, the site would be slightly usable, but primarily for water storage. This course of action is not recommended.

3. Removal of Contaminants from Soil

The value of the metals in the compounds which contaminate the soil would be high if they could be reacted and separated from the other components of the soil. ~~For instance, 44% zinc was found in one sample, and in another there was 6% copper.~~ Unfortunately, technologies are not now available for recovering the metals from the soil in any practical way.

Theoretically, the remedial action of choice would be to convert the wastes to resources. Soil contamination by metallic compounds is a common occurrence. It would be prudent for society to develop the necessary technologies to be able to clean up this site and others by removing the contaminants from the soil. In the hope that society will pursue this objective, we suggest that the remedial action chosen at this time be one which will allow recovery of the mineral resources in the soil at some future time.

Since neither removal of the contaminated soil nor removal of the contaminants is feasible, containment of the contaminants is the only viable conceptual alternative.

4. Encapsulation

a. Purposes of Encapsulation

The primary purposes of encapsulation, that is containment, of the contaminated soil would be:

To reduce release of contaminants to the environment by air-borne transport.

To reduce release of contaminants by surface water movement.

To reduce exposure of biota to contaminants.

Secondary purposes would be:

To allow some usage of the land.

EITHER to contain the contaminated soil so that the mineral resources in it are available in the future for reclamation;
OR to allow for a very gradual, long term process of dispersion into the environment so the ecologic consequences are minimized during transition, and so that the site eventually reaches a less contaminated, more usable state.
(As noted above, our preference is to contain the contaminants so that they may eventually be recycled.)

The familiar goal of reducing leaching of storm water through contaminated soils into groundwater was considered and not used. This goal was abandoned, because the analyses of water quality indicate that leaching of the contaminants into the groundwater is not posing significant increased environmental risk, and because the hydrology of the site makes achievement of this purpose very difficult. The hydrologic difficulties are discussed below.

b. Extent of Encapsulation

(i) Areal extent:

The contaminated soils on the surface should probably be capped over the entire site for reasons mentioned above. In this discussion the term "capping" means covering, and it does not specify any particular scheme or technical approach.

(ii) Vertical extent:

There is no need for vertical barriers in the ground to prevent migration of contaminants laterally off-site. This is because the flow of groundwater on the site is virtually nil in both horizontal and vertical directions, and the concentrations of contaminants below 12 feet depth are at acceptable levels. (See section II.)

c. Concerns with Encapsulation and the Hydrologic Regime

For the cap to inhibit the movement of storm water into ground water through the contaminated soil on site, the cap would have to be of low permeability, and the stormwater running onto the site and precipitated on the site would have to be prevented from seeping beneath the cap. Thus, a low permeability cap should be located at the bottom of an on-site stormwater detention basin. In order to be located above the water table on site, the bottom of this capping layer should be at least one foot above sea level and preferably two feet above sea level. The paving for the parking in the back of the box factory, the western end of the low-lying portion of the site, is less than two feet above sea level in the area near MW5.

The perpetual pond on the Interstate site now functions as a stormwater detention basin for runoff from an area of unknown size. The natural runoff area may extend as far west as Devon Street (which is west of Schuyler Avenue), an area of approximately 51 acres. Some of the runoff from the adjacent site to the northeast runs onto the Interstate site. The adjacent site is 4.9 acres; ~~the Interstate site is 8.4 acres~~. Thus, historically, the Interstate site could have handled run-off water from a drainage area as large as 64 acres. Currently, much of this water is diverted elsewhere through Kearny's combined sewer system, which carries both sewage and storm water. However, during sizable storms, the sewers, by design, overflow into sewer pipes in the ground of the Interstate site. See Figure II(19). Apparently one of these sewer pipes leaks, because polluted water comes to the surface of the site, above where a sewer pipe is supposed to be located, during and after storms.

As noted above, to separate surface water from ground water, the cap and the bottom of the water storage basin should be provided at or above two feet above MSL. Assuming that the bottom of the stormwater basin is located at an elevation of 2.5 feet, and assuming that only a portion of the site is to be inundated by water, the top of the stormwater storage basin probably might not be more than 4.5 feet above MSL. Further, assuming that about half of the Interstate property were to be used for a basin, the capacity of the basin would be about eight acre-feet. Such a stormwater detention basin could not contain the runoff in a hundred-year storm from 64 acres or even 20 acres.

Furthermore, there presently is uncertainty about how water outflows from the site. If the basin were to accept much more water than currently runs onto the site, a method for discharging the water from the basin might need to be found. One way to achieve this would be to pump the water through a pipe to a receiving body of water at an elevation lower than 2.5 feet. ~~The closest stream is the Passaic River, which at its closest point is approximately 0.7 miles from the site.~~ The route to this nearest point of the Passaic River would run south along the north-south Conrail line, which is adjacent to Interstate Metals Separating Corporation, and cross the east-west Conrail line, Harrison Avenue, Route I-280, and the main switching yards of Conrail.

The properties adjacent to Interstate to the west slope uphill to a high at Devon Street of about 60 feet. If the bottom of the storm water detention basin were to be above the water table, regardless of whether or not the basin were to be enclosed up to 4.5 feet on this western boundary, stormwater runoff would back up more than at present into the buildings on Dukes Street, Tappan Street, Hoyt Street, and Devon Terrace.

Unless blocked off, the sewers, that run down Dukes Street and Tappan Street and empty overflows of combined sanitary and storm water into sewers in the ground of the Interstate site, will continue to dump water into the contaminated soil beneath the cap. If the cap were of low permeability to prevent storm water from leaching the contaminated soil, this would defeat the purpose of the cap. This sewer water is contaminated itself, so its continued discharge into the Interstate site will further aggravate the contamination situation on site.

If the sewers were blocked, the water flow in these sewers could be discharged into the Interstate detention basin, or onto Dukes Street and Tappan Street. Diversion to the basin would exacerbate the problems with the detention basin. Diversion to the streets would further aggravate the flooding problems in this area. Interstate can not unilaterally remedy the problems created by the water management system of the Town of Kearny. How to address the bad flooding problems that presently exist on

the Interstate site and its environs, and the sewer problems need further study. This study needs the participation of the Town of Kearny and Hudson County.

C. EVALUATION OF ALTERNATIVE METHODS OF CAPPING SITE

1. Minimal Capping of Upland Portion of Site

The upland portion of the site, that is the area above four feet in elevation where the buildings and activities are located, could be capped. Capping would be done by the placement of macadam, or other low permeability material, which would hold the soil in place, on all areas of normal human access which are not already covered with buildings, concrete, or asphalt. Water from the paved areas would be directed towards the vacant area.

If the topography of the site were left unchanged, then water would run into and out of the pond as it now does, except that there would be some increased runoff from the active portion of the site because of the increase in impervious cover. The water level in the pond might be higher on average. During and following storms, flooding problems would be likely to increase. It is not anticipated that either surface water or ground water quality would be worsened by this alternative. The near surface ground water is minimally, if at all, contaminated now, and the deeper ground water appears to be protected from contamination by the overlying unconsolidated sediments in the formation underlying the meadowlands, and the relative insolubility of the inorganic contaminants in the soil. Capping of the developed area only would decrease the amount of sediment and solutes that run off into the pond. Thus, the rate of filling of the pond by sediments would be slower, and the carry-over of sediments and solutes into outflow from the site would be lower than at present.

The principal problem with this approach is the fact that contaminated soil would be left exposed so that it would be moved by wind and water, and so that it would impose risks for animals, including humans, which are on or near the unprotected portion of the site. In our view the greatest risks would be from breathing or ingesting contaminated dust particles. The risks from ingesting water are less. Because the site is so contaminated, vegetation does not grow appreciably, so the risks from ingestion of contaminated plants are minimal.

2. Capping of Upland Portion and Coverage with Water of Low-lying Portion

This option would require recontouring of portions of the property (primarily the open, undeveloped area). There would be no net removal of contaminated soil. The principal objectives of recontouring would be as follows:

> To create a pond with a flat bottom and berms where needed so that water is at a uniform depth at all points in the pond at any one time and so that there is water in the pond at all times.
>
> To develop manageable upland areas.

All areas of the site, except for the bottom of the pond, would then be capped with a material such as asphalt.

This method allows percolation of water into and out of the ground water through the pond. Because migration of contaminants in the ground water, both vertically and horizontally, is, according to our findings, very limited, and because the ground water is not used by humans directly, this alternative should be acceptable as far as ground water quality is concerned. Its advantage over the previous method of leaving contaminated soil exposed to the air is that air-borne routes of exposure to the contaminants are eliminated. Its disadvantage is that contaminants would still be able to migrate freely in the surface water.

3. Capping of Upland Portion with Wetland Formation in Low-lying Portion

This alternative is similar to that above (2), except in place of the pond a wetland environment would be created. If the soil on this site were not contaminated, the low-lying areas would now be wetlands with a smaller pond. In this scenario, the site would be recontoured as above with the flat bottom of the low-lying area at an elevation of 0 feet or, perhaps, a bit below sea level. Then the bottom of the low area, which probably would contain water, and part way up the sides of the slopes and berms would be covered with a layer of clean loam, perhaps a foot thick. This would cover the contaminated soil so that it would no longer be exposed to wind, surface water, humans, or wildlife.

This area would then be planted with hardy wetland species which grow readily in the meadowlands to get wetland propagation started. The area would need protective care for a few years until a natural succession is started, and, thereafter, to protect it from dumping and other human incursions. Although the subsoil would still be poisonous to plants, it is anticipated that with sufficient nutrients in the surface soil the number of

species able to survive would form a healthy wetland ecosystem. Please note that the net movements would be eluvial and the fresh soil should not become as contaminated as below.

The re-establishment of microbiota in the soil might increase the solubility and, thus, mobility of some of the heavy metals by the formation of metal/organic complexes. The free exchange between surface and ground water would continue, and the formation of metal/organic compounds would hasten the inevitable dispersion trend. We do not anticipate that this would cause an increase in environmental degradation as compared to that which is now occurring, and that the environmental effects on the environs of the site would probably be as salutary as capping the entire site with impervious material so that ground water and surface water are separated from each other. From a scientific perspective, whatever alternative is chosen, it would be useful to monitor the after-effects of that remedial action.

The particular advantages to this approach are as follows:

> Water would be removed from the site by evapotranspiration as well as by outflow into surface and ground water. Evaporated or transpired water would be clean of the heavy metal contaminants found on the site. In an actively growing wetland ecosystem, well over half of the water precipitated on or flowing into the system can be removed from the system by evapotranspiration.
>
> A variety of mechanisms in the ecosystem help to cleanse the water flowing through the system of pollutants, including heavy metals. Whether or not this created wetland would be able to assimilate the pollutants entering the site via storm water sewers is not known now. The land would have to be maintained as a conservation area.

As for the upland portion of the site, all remaining area not covered with clean soil or other type of capping could be capped with macadam or other impervious surfacing and used as at present or for some other industrial use.

Another alternative would be to cover the upland as well with good topsoil and then vegetate it. This would create an integrated conservation area in which the upland might be used for park land. However, the land uses surrounding the Interstate site would make this use of the land out of place. Because of its prime location with respect to transportation, and its proximity to urban centers, the upland portion of this site should continue in an industrial use, in our considered judgment.

The prime disadvantage to this alternative is the uncertainty of its outcome. Too little is known to predict how well such a created wetland would grow, and how much the contaminants would be mobilized by the biota in the wetland ecosystem.

4. Low-permeability Capping of Entire Site with Minimal Water Storage

To prevent further infiltration of surface water into the ground water in order to minimize future mobility of soil contaminants in the ground water and to prevent their entry into surface water, the entire site should be capped with impervious material. The recontouring of the site would be similar to that described previously for alternative 2. Then all exposed surfaces of the soil of the site would be covered with a material of low permeability, such as asphalt. In the low-lying area there would be a storm water detention basin, which could be either wet or dry. Asphalt would not be a good material for a wet basin because it would break up easily under conditions where water would be acting on the material from both above and beneath. For the basin to be dry, its bottom would need to be located above the water table, that is about 2.5 feet above sea level. Assuming that the upland elevation is 4.5 feet or more, then there would be about 2.0 feet of storage capacity in the basin. Minimal storage capacity implies that only precipitation on the site itself would be stored temporarily in the basin. If half the site were to be detention basin, then it could hold 1.0 foot of rain, which is more than enough to contain the 100 year storm.

However, at present this site receives storm runoff from a much larger area than the site itself. The water flows onto the site from Dukes Street, Tappan Street, Hoyt Street, and Devon Terrace. This water can be kept off the site by berming the site, where necessary, to a height of about 5 feet along the western property boundary. This should not have a major impact on Dukes Street. The berm from Tappan Street to Devon Terrace could be made wide enough to accommodate some car parking spaces. Such a berm would cause storm water to back up onto these streets and into the neighboring buildings.

Storm water also runs off onto the site from Block 252, lot 4B, which lies to the northeast of the site, and water sometimes flows off the Interstate site onto this adjoining property. It would be prudent not to berm the northeastern property line. This adds an additional drainage area into the detention basin of about 4 acres. This would diminish the storage capacity of the basin to a storm of about 8 inches.

There is another outside source of storm water which enters the site: the in-ground storm sewers that run down Dukes Street and Tappan Street, which are combined on site and then empty into the ground water of the site. (Sanitary and storm water sewer plans

for this area show a pipe leading away from the site. However, debris from the sewers has been known to accumulate on-site after rainfall).

This alternative is based on the premise that all remedial action will be undertaken by the owners of the site without recourse to requests for action by public agencies, such as the Town of Kearny which is responsible for the storm sewers. Given that premise, then nothing would be done to alter the storm water sewer system on site. It would continue to function as at present. It would introduce new surface water into the ground where contaminated soils are located, thus dispersing the contaminants. This partially defeats the purpose of the impermeable layer of material between surface and ground water.

Furthermore, the water from the storm sewers would continue to flow to the surface on the Interstate site during or following heavy storms. This would probably cause buckling and break up of the macadam surface of the detention basin. This deterioration of the detention basin would be hastened by the dissolving action of petroleum hydrocarbons frequently found in the storm sewer runoff.

The additional water from the storm sewers would increase the amount of storm water to be stored in the detention basin. What its actual capacity would be, probably can not be predetermined. However, it is reasonable to assume that the basin, in order to contain the 100 year storm, would have to have a considerably larger capacity than the 8.4 acre-feet, which was assumed at the start of this discussion to be more than adequate. A larger basin could be designed, but it would not solve the qualitative problems of the 8.4 acre-feet design.

Another problem might arise. Whether or not the outflow of the basin would be sufficient to keep the basin dry is not known. If water were to accumulate so the basin were continually wet, then asphalt would be an inadequate membrane material, and water levels in the surrounding buildings and streets would be higher than they are at present.

In order for water to evaporate from the basin, the basin could not be covered over with a structure. This means that only about one third of the land would be usable.

5. Low-permeability Capping of Entire Site with Moderate Water Storage

This alternative attempts to correct most of the deficiencies of the previous alternative (4) by using the following techniques:

Creation of a detention basin with a larger capacity;

Creation of a wet basin instead of a dry basin;

Separation of ground water from surface water through use of a more flexible membrane material;

Piping storm water sewer flows to the surface.

The basin would be made larger by lowering the bottom of the basin to about 0.5 feet above mean sea level, raising the elevation of the upland portion to about 6 feet above sea level, and using the land to the east of the solder sweating operation for basin. For calculation purposes we assume that two-thirds of the site would be used for detention basin, that is 5.6 acres.

The basin would be designed to be wet so that it could be cut down into the present water table. If surface water no longer percolated from the site into ground water then the ground water table would decline to about sea level. The impermeable membrane between the bottom of the basin and the ground water might be set as low as from 0 to 0.5 feet above MSL. If the bottom of the outlet weir were to be set at 1.0 feet above MSL, then the basin would usually have six inches of water in it. If the rest of the perimeter of the basin were built at 6 feet, then the detention capacity of the basin would be 28 acre-feet. This might be enough capacity to accommodate the runoff from all present sources onto the site in a 100 year storm. Another advantage of a wet basin is that water removal from the site would occur by the process of evaporation during a greater part of the year than it would in a dry basin.

The encapsulation material used in this alternative to separate the surface water from the ground water would have to be flexible enough to withstand water pressures from both beneath and above the low permeability membrane, and would have to be thin enough to maximize the basin capacity. Asphalt does not have these properties. A fiber-reinforced plastic material that would resist deterioration by petroleum hydrocarbons might be used. To protect the plastic from shear forces and from abrasion from below, the plastic might be placed atop a layer of a type of clay which would have a low permeability when saturated with the ground water on the site, which has a relatively high ionic content. To protect the plastic from abrasion and shear forces from above, perhaps an upper layer of clay would work. The capping material on all upland areas and on areas in the basin which are usually dry could still be asphalt.

To avoid radical alteration of the topography of the western boundary of the site and the adjacent streets, a ditch could be constructed on the western side of the basin berm to collect the runoff from the streets. The water collecting in the ditch would then be pumped over the berm into the basin.

With cooperation from the Town of Kearny, the water in the storm water sewers would be piped so that it would empty into the wet detention basin. The pollutants in this water would be a problem because they would increase sedimentation in the basin and would probably augment algal and plant growth in the basin. The filling of the basin with sediment would decrease its capacity. The growth of plants with tap roots puncturing the plastic would slowly increase the exchange of water between surface and ground. If these were considered to be problems, then they could be corrected by the following remedies:

> The sedimentation problem could be corrected by periodic removal of the sediments in the bottom of the basin and maintenance of the clay and plastic membrane bottom.
>
> Plant growth in the basin could be inhibited by coverage of the basin so that light would not get to plants. Coverage of the basin could be done by constructing a structure above it built on stilt piles. The structure could be used for parking, warehousing, or any other industrial use. A cheaper but less useful means of coverage of the water in the basin would be to float black plastic on the water surface. Coverage of the basin would, of course, decrease the amount of water that would exit by evaporation.

If the consequences of sedimentation and plant growth were not considered to be problems, then gradually the membrane would become porous and the basin would become a vegetated wetland. If this is the ultimate goal, then it should be directly encouraged by using alternative 2, rather than this one. We do not believe that the interim effects on the environs of the Interstate site would differ very much.

In order to cover two-thirds of the site with a water detention basin, then there would be substantially less usable land than with other alternatives. Another disadvantage of this alternative is its high cost both for construction and maintenance. Furthermore, it is not certain that it could be maintained satisfactorily.

6. Low-permeability Capping of Entire Site with Water Removal

If water were to be pumped away from the surface of the site, then storm water runoff could be managed on-site in a much smaller volume than required in the passive removal systems envisaged in alternatives described above. Any such mechanical system would, however, have several disadvantages which are described below:

> It would require large expenditures for equipment and operation. A major expense in the operation of an active system is for energy.
>
> It would require on-going maintenance to a much greater extent than any other option described.
>
> It would require a place to which the water could be displaced.

The detention basin could be designed in any of the ways previously described. A pump in the basin would automatically start operating when water reached a predetermined elevation. The water would then be pumped through pipes to wherever it would be discharged. The pump system might not be very expensive, but the piping system, depending upon its length and the terrain through which it would have to pass, could be extremely costly.

The runoff onto this site would not be clean water. It would be polluted with petroleum hydrocarbons, dirt, and other debris from urban streets, and many other materials. Thus, the pump and pipes would require periodic cleaning and maintenance. Breakdown of equipment during a storm would also be a problem.

However, where to discharge the water is the fundamental problem with this alternative. The Passaic River to the south, where it is at a slightly lower elevation than the site, is more than two-thirds of a miles away. The nearest creek to the northeast can flow towards the site as well as away from it, as already noted. Perhaps, if the water were pumped through the railroad embankment, its backward flow towards the site would be slow enough for effective removal, but a complex hydrologic study would be needed to confirm this. Pumping the water into the ground on site would, of course, defeat the purpose of putting down a barrier of low permeability between the surface water and the ground water.

Finally, the costs of this alternative would be exorbitant, and there would be no redeeming social benefits.

D. RECOMMENDED REMEDIAL ACTION

Consideration of the encapsulation alternatives described in section C, and others, leads to the conclusion that none of them would adequately meet the purposes for capping set forth in section III.B.3.1. There is, however, an alternative which satisfactorily meets those objectives. This remedial action is impervious capping of heavily used upland portion of the site and porous capping of low-lying and lesser used areas.

The problem of capping the low-lying areas of the site with material of low permeability, such as clay or asphalt, is alluded to in the descriptions of alternatives 4, 5, and 6. The problem is that an impervious layer of material where water occurs both above and below the layer does not allow for equalization of hydrostatic pressures across the layer. For instance, during and after storms, when the detention basin contains water, there would be a net downward pressure on the impervious layer which would tend to be disruptive of the impervious layer. If the layer were placed so that it would be in the ground water part of the time, then during dry periods the net water pressure would be upwards. This would also place unbalanced forces on the layer. The forces on the membrane layer would be highly variable and would eventually cause any material to break up and to lose its low permeability.

This problem is an inevitable consequence of choosing a capping material with low permeability. If a material with moderate permeability were chosen, then the hydrostatic forces would become balanced in relatively short periods of time. This would eliminate the problem. The reason for suggesting that low permeability material be used was to prevent percolation of storm water through the contaminated soil. However, where the soil is already saturated with water it has been shown that the water contains low levels of the contaminants. These levels would be unlikely to cause increased risks to ecosystems into which the water might move, such as the meadowlands and the Passaic/Hackensack estuarine waters. Furthermore, the data on ground water elevations indicate that movement of water off site or deeper into the subsurface material is minimal. Most of the water that presently percolates into the contaminated soil from the pond or lagoon probably remains on site, unless evaporated. Therefore, in areas which are not heavily trafficked, there is no need for capping with low-permeability material. (Where there is heavy traffic the capping material used would be of low permeability because the high strength materials needed have low permeabilities.) What is needed in the other areas is a material through which silt and clay size soil particles do not pass. Such a material would severely limit the movement of even the smallest contaminated soil particles by wind or water or animals; it can be porous to water and air; it would allow rapid

equalization of hydrostatic forces and barometric pressures; it would be useful in protecting the environment by holding the contaminated soil on this site.

This type of cap would allow water to move through it but would restrict the movement of contaminated soil into surface water and into air. Some of the advantages of this type of cap follow:

Hydrostatic forces are equalized;

Volume required for control of storm water is less than would be required with impervious cap because storm water can percolate into ground water;

Detention basin bottom can be lower than ground water table elevation, so brim, that is upper, elevation can be lower than would be required with impervious cap;

Greater amount of site would be upland portion, and, therefore, available for use;

Flooding of surrounding sites, as well as this site, would not be increased;

It would be relatively maintenance free.

In our opinion this approach would minimize all relevant environmental risks.

The firm of Willis & Paul Engineers was consulted to aid in the design of a remedial plan for the site using this approach. Our joint plan recognizes four types of areas which we propose to treat individually. These areas are shown on Figure III(1). They are as follows:

	Type of Area	Approximate Site Acreage
1.	Existing buildings and appurtenances	0.5
2.	Inundated area of brackish water (pond)	1.5
3.	Area reserved for parking, loading and circulation of vehicles	1.6
4.	All other areas not included in 1, 2 and 3 above	4.9
	Total site acreage	8.5

As stated in the report by Willis & Paul Engineers, we recommend that these areas be treated as follows:

> Area #1 (existing buildings and appurtenances) needs no treatment. These areas act in a containment fashion in their current existence.
>
> Area #2 (inundated area of brackish water), which is the largest area of the pond normally inundated, should be sealed with a porous filter fabric overlaid with riprap (a blanket of stone), for anchorage and erosion control. This riprap should be of a size which will remain stable under tidal influence. The filter fabric should have a fabric weight of approximately 8 ounces per square yard and be resistant to oxidation, bacteria and the contaminated soil (e.g. copper, mercury, zinc, lead and chromium). The placement of this fabric and stone would be most efficient after berming the inlets/outlets of the basin and dewatering. Nominal grading could occur at this time if necessary.
>
> Area #3 (parking, driveway, etc.) might best be sealed by performing some minor grading, followed by paving with bituminous concrete. The Town of Kearny typically requires 2 inches of Bituminous Concrete Surface Course Mix I-4 over 2 inches of Bituminous Stabilized Base Course Mix I-2 over 6 inches of Dense Graded Aggregate Base Course. This method will both prevent soil migration and stabilize the area for parking, driveways and loading of heavy trucks.
>
> Area #4 (areas other than #1, 2 and 3), the remaining area, consists of open space on the site not occupied by buildings, parking, driveways or water bodies. This area should be regraded to provide for free drainage, overlaid by a filter fabric whose weight exceeds 4.2 ounces per square yard, then covered with a minimum of 4 inches of topsoil from an off-site source further stabilized by fertilizing, seeding and straw mulching.

The recirculating lagoon is not included in the areas described above. It does not require capping.[1] <u>The problems posed by the municipal combined sewer which runs through the site need to be addressed.</u>

There are a few minor environmental concerns which this method of capping the site would introduce. These concerns, which are described below, would need to be addressed.

> The capping in areas #2, 3 and 4 require adding material on top of the existing contaminated soil. This will add about 3.5 acre-feet of volume to the site. The impacts of this addition should be considered from the point of view of stormwater management.
>
> Area #3 to be covered with bituminous concrete, an area of about 1.6 acres, will be less permeable than at present. Thus runoff from this area will increase.
>
> In area #2, the pond, the fabric will be covered with stones. Gradually the sediment from runoff will accumulate in the interstices of the stones, and plants may start to grow. If plants put roots through the fabric into the contaminated soil, then they may disrupt the fabric or pick up toxic elements into themselves. [A maintenance program, to keep plant growth down, needs to be developed.] interesting idea
>
> In area #4 (remaining areas) sod is to be placed atop the fabric to protect the fabric from abrasion and the elements of weather, particularly sunlight. To reduce the potential problems with plants mentioned above, the soil layer needs to be thick enough so the grass roots do not penetrate the fabric, and the grass needs to be well maintained so that other plants with deeper roots do not grow.

In our professional opinion these environmental concerns can be more readily addressed satisfactorily than the concomitant concerns for any of the other alternatives. Furthermore, we feel that this remedial alternative, both in the short term and long term, will provide overall the best environmental benefits for the state of New Jersey.

<u>We recommend this alternative as the remedial action of choice.</u>

NOTE

[1] According to the data from the deep monitoring wells (Table II(1)B on page 5 of the tables), which are close to the lagoon, the recirculating lagoon is not a source of groundwater contamination. Capping the lagoon would appear to be unnecessary. The only outlet for liquid water from the lagoon is back into the brass separating operation, and not into surface water. Seepage into groundwater is unlikely because hydrostatic forces across the water-soil interface of the lagoon are equal, and because the soil part of that interface is composed of very fine particles of clay and silt size which have a low permeability. To lay fabric in the lagoon would be without benefit, because suspended solids in the recirculating water would continue to settle out in the lagoon and cover the top of the fabric with the same material that would be beneath it.

IV. CONCLUSIONS AND RECOMMENDATION

From our environmental findings we make the following conclusions:

1. Most soils on the site from the surface down to about four feet are contaminated with one or more metal elements. The most prevalent contaminants are zinc, copper and lead.

2. The metal contaminants in the soil are not found at levels of concern much below 12 feet below the surface.

3. The ground water table beneath the surface of the site is essentially flat with slopes on the order of 0.25%. This means that groundwater moves very slowly.

4. The predominant direction of flow of the groundwater is westerly.

5. There are pressure differentials which cause the groundwater to move downward, but it moves very slowly because it is impeded by layers of low permeability silty clay.

6. The groundwater moves very slowly in a direction that tends to be westerly and downwards towards the impervious bedrock. To the best of our knowledge there is no place where this water can outflow away from beneath the site. Therefore, we conclude that the groundwater beneath the site essentially remains there, stagnant.

7. The flow of surface water appears to alternate between away from the site and onto the site due to tidal action.

8. There is a discharge of polluted water from the combined storm water and sanitary water sewer system of the Town of Kearny onto the surface of the Interstate site.

9. Groundwater taken from wells, which are screened down to 12 or 14 feet deep, was only minimally contaminated based on drinking water regulations.

10. Groundwater taken from deeper levels was not contaminated according to the standards for potable water.

11. Surface water samples were either not contaminated or minimally contaminated.

12. There is a minor amount of air-borne migration of the contaminated soil.

13. There may be some risk to animals on the site from the contaminated soil.

Based on these findings, we recommend that remedial action be taken. The only feasible type of remediation, which will not increase environmental risks, is a form of partial encapsulation.

Our proposal is to cover heavily trafficked areas, which are not now covered with impervious surfacing, with asphalt. We propose to cover the remaining areas of the site with polyester filter-fabric. This fabric cover would help hold even the contaminated clay particles in place. These covers on the soil surface would virtually eliminate migration of contaminated soil particles by air or animals. Since the contaminants are almost insoluble in water, and since little water leaves the site, migration of the contaminants in water is very slight at present. The covers will restrict water migration even further. The fabric covers will be held in place under water by stone rip-rap, and on land by sod.

This remedy will effectively limit environmental risks from the soil contaminated with metallic materials. However, it will not solve the problems posed by the pollution coming from the town's stormwater/wastewater management system. We recommend that Interstate cooperate with the Town of Kearny and Hudson County, so that a remedy can also be found for this environmental risk.

We find that the proposed remedial action will provide the most environmental benefits of any alternative.

TABLE II(1)

INTERSTATE METALS SEPARATING CORP.:
A. SOIL DATA

MAP SITE	SAMPLE ID	SAMPLE DATE	DEPTH in.	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	PHC mg/kg	Cr, mg/kg
1	MW1-0	21-Jan-87	24	7.40	240	1550.0	7400.0	7.560	48500.0	57458				
1	MW1-2	21-Jan-87	48	7.63	285	272.0	757.0	1.790	2720.0	3751				
1	MW1-6	21-Jan-87	72	7.48	180	59.5	32.6	U	2200.0	2292				
1	MW1-8	21-Jan-87	96	8.01	150	9.2	6.1	U	25.9	41				
1	MW1-10	21-Jan-87	120	7.91	135	30.8	38.3	U	58.5	128				
1	MW1-12	21-Jan-87	144	7.83	100	9.3	6.5	U	31.2	47				
1	MW1-14	21-Jan-87	168	7.78	130	12.1	6.2	U	59.5	78				
2	MW2-0	22-Jan-87	6	7.84	880	47200.0	18360.0	39.300	123000.0	188599				
2	MW2-3	22-Jan-87	36	9.72	1300	4870.0	1400.0	2.620	28900.0	35173				
2	MW2-4	22-Jan-87	48	10.94	840	11900.0	3490.0	0.310	61800.0	77190				
2	MW2-6	22-Jan-87	72	8.79	720	22900.0	9850.0	3.640	98000.0	130754				
2	MW2-10	22-Jan-87	120	8.69	510	539.0	302.0	0.124	5120.0	5961				
2	MW2-12	22-Jan-87	144	8.36	390	242.0	109.0	U	2410.0	2761				
2	MW2-14	22-Jan-87	168	8.33	285	39.6	14.9	U	152.0	207				
3	MW3-2	28-Jan-87	24	10.83	5000	18700.0	12600.0	159.000	77000.0	108459				
3	MW3-4	28-Jan-87	48	9.67	1300	10700.0	3970.0	3.490	21600.0	36273				
3	MW3-6	28-Jan-87	72	9.40	900	64300.0	20700.0	0.892	514000.0	599001				
3	MW3-8	28-Jan-87	96	7.85	300	62.0	24.8	U	460.0	547				
3	MW3-10	28-Jan-87	120	7.80	350	135.0	56.2	U	515.0	706				
3	MW3-12	28-Jan-87	144	7.89	420	11.9	8.2	U	38.9	59				
4	MW4-4	28-Jan-87	48	7.76	400	18700.0	4700.0	11.100	45200.0	68611				
4	MW4-5	28-Jan-87	60	7.46	350	190.0	672.0	1.860	1630.0	2494				
4	MW4-6	28-Jan-87	72	6.85	590	1700.0	314.0	1.780	3770.0	5786				
4	MW4-8	28-Jan-87	96	7.60	300	215.0	54.7	0.116	894.0	1164				
4	MW4-10	28-Jan-87	120	8.45	400	58.7	15.7	0.108	1970.0	2045				
4	MW4-12	28-Jan-87	144	8.14	310	520.0	93.0	0.230	1890.0	2503				
5	MW5-2	29-Jan-87	24	8.14	400	6060.0	2880.0	0.580	29500.0	38441				
5	MW5-3	29-Jan-87	36	8.38	300	10200.0	3530.0	7.350	39600.0	53337				
5	MW5-4	29-Jan-87	48	8.51	440	5600.0	1130.0	1.150	34400.0	41131				
5	MW5-6	29-Jan-87	72	8.74	400	29.1	16.5	U	241.0	287				

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INTERSTATE METALS SEPARATING CORP.:
A. SOIL DATA

MAP SITE	SAMPLE ID	SAMPLE DATE	DEPTH in.	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	PHC mg/kg	Cr mg/kg
5	MW5-8	29-Jan-87	96	8.93	410	126.0	41.0	U	796.0	963				
5	MW5-10	29-Jan-87	120	8.56	425	12.7	12.2	U	79.1	104				
5	MW5-12	29-Jan-87	144	8.38	475	182.0	61.8	U	883.0	1127				
6	MW6-2	03-Mar-87	24	7.67	300	14700.0	4900.0	55.300	110000.0	129655				106.0
6	MW6-4	03-Mar-87	48	9.17	410	7300.0	7800.0	0.322	22100.0	37200				68.1
6	MW6-6	03-Mar-87	72	8.18	900	1960.0	460.0	0.46	9650.0	12070				24.7
6	MW6-8	03-Mar-87	96	8.55	440	18.6	4.7	U	63.5	87				8.4
6	MW6-10	03-Mar-87	120	8.51	590	120.0	5.6	U	320.0	446				7.6
6	MW6-14	03-Mar-87	168	8.52	440	130.0	8.6	U	270.0	409				9.1
6	MW6-16	03-Mar-87	192	7.96	610	34.4	U	U	580.0	614				4.2
6	MW6-18	03-Mar-87	216	8.55	600	25.5	U	U	79.5	105				7.0
6	MW6-20	03-Mar-87	240	8.46	460	23.2	U	U	45.8	69				4.4
6	MW6-24	03-Mar-87	288	8.14	590	15.0	U	U	44.0	59				4.6
6	MW6-28	03-Mar-87	336	8.44	570	25.3	3.7	U	104.0	133				9.9
6	MW6-35	03-Mar-87	420	8.27	500	66.6	7.4	U	308.0	382				5.1
6	MW6-40C	03-Mar-87	444	9.37	680	130.0	14.0	U	490.0	634				9.8
6	MW6-40B	03-Mar-87	456	9.30	660	50.7	8.5	0.13	180.0	239				11.2
6	MW6-40A	03-Mar-87	468	9.10	550	210.0	22.1	U	710.0	942				8.7
7	MW7-12	04-Mar-87	144	8.65	450	120.0	21.9	U	600.0	742				8.2
7	MW7-14	04-Mar-87	168	8.37	580	29.6	6.2	U	160.0	196				8.5
8	MW8-14	04-Mar-87	168	8.36	560	28.5	5.2	U	140.0	174				8.5
A	5A	03-Sep-86	6	8.41	250	291.0	242.0	0.782	800.0	1334	1.06	U	43	
A	5B	03-Sep-86	24	8.19	300	398.0	163.0	1.650	540.0	1103	0.65	U		
A	5C	03-Sep-86	48	9.02	675	347.0	264.0	1.350	2290.0	2902	1.59	U		
A	5D	03-Sep-86	72	8.15	300	12.7	U	U	34.4	47	U	U		
B	12A	03-Sep-86	6	8.79	700	13400.0	8500.0	390.000	59000.0	81290	8.91	215		
B	12B	03-Sep-86	24	9.21	775	16000.0	3600.0	118.000	40000	59718	10.10	75		
B	12C	03-Sep-86	48	8.23	1600	1520.0	830.0	17.800	7860	10228	4.67	U		
B	12D	03-Sep-86	72	8.70	650	8.6	U	U	35.6	44	U	U		
B	12E	03-Sep-86	96	8.81	750	104.0	39.4	2.000	481	626	U	U		

INTERSTATE METALS SEPARATING CORP.:
A. SOIL DATA

MAP SITE	SAMPLE ID	SAMPLE DATE	DEPTH in.	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	PHC mg/kg	Cr mg/kg
C	11A	03-Sep-86	6	9.61	2100	35500.0	5560.0	2240.000	72300.0	115600	15.60	420		
C	11B	03-Sep-86	24	9.22	900	39900.0	21100.0	2160.000	69600.0	132760	25.40	275		
C	11C	03-Sep-86	48	9.83	1100	17900.0	38600.0	4.500	116000.0	172505	32.30	87		
C	11D	03-Sep-86	72	8.52	825	45.2	9.9	0.654	198.0	254	0.30	U		
C	11E	03-Sep-86	96	8.64	550	1950.0	309.0	134.000	14300.0	16693	2.57	U		
D	4A	03-Sep-86	6	10.16	1550	17400.0	3700.0	33.400	50000.0	71133	50.60	217		
D	4B	03-Sep-86	24	9.72	1020	4700.0	15800.0	U	445000.0	465500	414.00	71		
D	4C	03-Sep-86	48	9.64	1300	64000.0	8300.0	0.478	320000.0	392300	173.00	150		
D	4CD	03-Sep-86	60	8.64	1700	512.0	80.0	0.648	28500.0	29093	53.30	U		
D	4E	03-Sep-86	96	8.45	400	32.6	4.5	U	207.0	244	U	U		
E	6A	03-Sep-86	6	11.03	1300	11800.0	3180.0	63.900	19000.0	34044	7.57	233	U	
E	6B	03-Sep-86	24	11.55	1000	3600.0	1145.0	2.750	11500.0	16248	7.63	69		
E	6BC	03-Sep-86	36	10.23	550	3500.0	1100.0	1.590	16900.0	21502	6.68	52		
E	6C	03-Sep-86	48	10.59	500	110.0	48.8	0.396	750.0	909	3.60	U		
E	6D	03-Sep-86	72	6.99	320	238.0	524.0	5.660	1380.0	2148	2.62	U		
E	6E	03-Sep-86	96	7.63	410	83.2	22.0	1.080	340.0	446	U	U		
F	8A	03-Sep-86	6	8.93	1500	37300.0	7000.0	178.000	119000.0	163478	117.00	500		
F	8B	03-Sep-86	14	8.59	800	3800.0	1240.0	4.900	64400.0	69445	1.89	200		
F	8C	03-Sep-86	22	7.95	1100	5260.0	1620.0	0.521	63600.0	70481	7.31	170		
F	8D	03-Sep-86	24	6.88	3000	20900.0	7600.0	8.210	119000.0	147508	97.10	114		
F	8E	03-Sep-86	30	8.00	1650	14300.0	7130.0	4.140	157000.0	178434	180.00	367		
G	9B	03-Sep-86	24	8.78	1150	8100.0	1660.0	12.100	65000.0	74772	10.10	345		
G	9C	03-Sep-86	48	7.75	1700	297.0	538.0	4.270	1790.0	2629	6.28	U		
G	9D	03-Sep-86	72	7.10	1000	18.8	8.9	U	180.0	208	0.41	U		
G	9E	03-Sep-86	96	8.06	1000	6.8	U	U	207.0	214	U	U		
H	10A	03-Sep-86	6	8.63	450	20700.0	3200.0	3470.000	56200.0	83570	8.12	1015		
H	10B	03-Sep-86	24	9.11	850	2050.0	1100.0	7.560	13500.0	16658	17.70	85		
H	10C	03-Sep-86	48	9.11	500	19100.0	4500.0	1.850	98100.0	121702	7.40	72		
H	10CD	03-Sep-86	60	7.95	300	205.0	230.0	3.020	950.0	1388	U	U		
H	10D	03-Sep-86	72	7.67	800	1100.0	170.0	5.840	2400.0	3676	2.45	U		

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INTERSTATE METALS SEPARATING CORP.:
A. SOIL DATA

MAP SITE	SAMPLE ID	SAMPLE DATE	DEPTH in.	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	PHC mg/kg	Cr mg/kg
H	10E	03-Sep-86	96	8.65	500	1450.0	324.0	11.400	7120.0	8905	5.47	26		
I	B1-2	29-Jan-87	24	9.00	640	938.0	13800.0	3.450	4270.0	19011				
I	B1-4	29-Jan-87	48	8.14	710	1470.0	464.0	0.412	5630.0	7564				
I	B1-6	29-Jan-87	72	8.16	490	830.0	613.0	0.526	3040.0	4484				
I	B1-8	29-Jan-87	96	8.10	510	345.0	1670.0	0.345	2930.0	4945				
I	B1-10	29-Jan-87	120	7.99	330	11.6	12.0	U	41.1	65				
J	B2-2	29-Jan-87	24	8.13	1010	1380.0	2480.0	3.120	2580.0	6443				
J	B2-4	29-Jan-87	48	8.20	1400	363.0	2630.0	0.440	1410.0	4403				
J	B2-6	29-Jan-87	72	8.24	1150	1700.0	2320.0	0.799	2570.0	6591				
J	B2-7	29-Jan-87	84	7.88	300	10.7	18.5	U	37.1	66				
J	B2-8	29-Jan-87	96	7.80	350	15.2	30.0	U	67.2	112				
J	B2-10	29-Jan-87	120	8.21	410	49.7	52.0	U	169.0	271				
U	LS-1	04-Mar-87	6	9.63	2000	45000.0	14000.0	190	290000.0	349190				90.8
V	LS-2	04-Mar-87	6	9.89	1500	92000.0	11000.0	56.2	300000.0	403056				38.2
W	LS-3	04-Mar-87	6	9.48	1510	38000.0	5200.0	61.3	270000.0	313261				45.4
X	PS-1	04-Mar-87	6	8.68	900	1800.0	6000.0	780	68000.0	76580				87.4
Y	PS-2	04-Mar-87	6	9.43	450	30000.0	11000.0	11.4	21000.0	62011				41.6
Z	PS-3	04-Mar-87	6	8.69	590	20000.0	6700.0	41.6	62000.0	88742				160.0

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INTERSTATE METALS SEPARATING CORP.:
B. WATER DATA

MAP SITE	SAMPLE ID	SAMPLE DATE	pH su	CONDUCT. umhos/cm	Cu mg/L	Pb mg/L	Hg mg/L	Zn mg/L	TOTAL mg/L	Cd mg/L	Cr mg/L
1	MW1	05-Feb-87	7.45	630	U	0.290	U	0.270	0.560		0.127
2	MW2	05-Feb-87	8.41	1280	0.050	0.062	U	0.820	0.932		0.112
3	MW3	05-Feb-87	9.87	1800	0.510	0.055	U	0.150	0.715		0.166
4	MW4	05-Feb-87	7.63	1750	0.070	0.042	U	2.100	2.212		0.243
5	MW5	05-Feb-87	8.04	2200	0.110	0.042	U	0.280	0.432		0.122
6	MW6	17-Mar-87	8.29	2500	U	0.016	U	0.320	0.336	0.003	U
7	MW7	17-Mar-87	8.18	2400	0.080	0.041	U	0.750	0.871	0.003	U
8	MW8	17-Mar-87	8.27	2500	0.080	0.017	U	0.320	0.417	0.001	U
U	LW-1	04-Mar-87	10.02	3500	0.300	0.237	U	0.070	0.607		U
V	LW-2	04-Mar-87	10.08	3600	0.410	0.304	U	0.070	0.784		U
W	LW-3	04-Mar-87	10.07	3500	0.260	0.141	U	0.010	0.411		U
X	PW-1	04-Mar-87	8.48	790	0.130	0.136	0.004	0.480	0.750		U
Y	PW-2	04-Mar-87	8.69	400	0.070	0.027	0.001	0.170	0.268		U
Z	PW-3	04-Mar-87	8.68	400	0.430	0.044	0.001	0.070	0.545		U

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INTERSTATE METALS SEPARATING CORP.:
SOILS DATA SORTED BY DEPTH

MAP SITE	DEPTH in.	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	Cr mg/kg
2	6	7.84	880	47200.0	18360.0	39.300	123000.0	188599			
A	6	8.41	250	291.0	242.0	0.782	800.0	1334	1.06	U	
B	6	8.79	700	13400.0	8500.0	390.000	59000.0	81290	8.91	215	
C	6	9.61	2100	35500.0	5560.0	2240.000	72300.0	115600	15.60	420	
D	6	10.16	1550	17400.0	3700.0	33.400	50000.0	71133	50.60	217	
E	6	11.03	1300	11800.0	3180.0	63.900	19000.0	34044	7.57	233	
F	6	8.93	1500	37300.0	7000.0	178.000	119000.0	163478	117.00	500	
H	6	8.63	450	20700.0	3200.0	3470.000	56200.0	83570	8.12	1015	
U	6	9.63	2000	45000.0	14000.0	190	290000.0	349190			90.8
V	6	9.89	1500	92000.0	11000.0	56.2	300000.0	403056			38.2
W	6	9.48	1510	38000.0	5200.0	61.3	270000.0	313261			45.4
X	6	8.68	900	1800.0	6000.0	780	68000.0	76580			87.4
Y	6	9.43	450	30000.0	11000.0	11.4	21000.0	62011			41.6
Z	6	8.69	590	20000.0	6700.0	41.6	62000.0	88742			160.0
F	14	8.59	800	3800.0	1240.0	4.900	64400.0	69445	1.89	200	
F	22	7.95	1100	5260.0	1620.0	0.521	63600.0	70481	7.31	170	
1	24	7.40	240	1550.0	7400.0	7.560	48500.0	57458			
3	24	10.83	5000	18700.0	12600.0	159.000	77000.0	108459			
5	24	8.14	400	6060.0	2880.0	0.580	29500.0	38441			
6	24	7.67	300	14700.0	4900.0	55.300	110000.0	129655			106.0
A	24	8.19	300	398.0	163.0	1.650	540.0	1103	0.65	U	
B	24	9.21	775	16000.0	3600.0	118.000	40000	59718	10.10	75	
C	24	9.22	900	39900.0	21100.0	2160.000	69600.0	132760	25.40	275	
D	24	9.72	1020	4700.0	15800.0	U	445000.0	465500	414.00	71	
E	24	11.55	1000	3600.0	1145.0	2.750	11500.0	16248	7.63	69	
F	24	6.88	3000	20900.0	7600.0	8.210	119000.0	147508	97.10	114	
G	24	8.78	1150	8100.0	1660.0	12.100	65000.0	74772	10.10	345	
H	24	9.11	850	2050.0	1100.0	7.560	13500.0	16658	17.70	85	
I	24	9.00	640	938.0	13800.0	3.450	4270.0	19011			
J	24	8.13	1010	1380.0	2480.0	3.120	2580.0	6443			
F	30	8.00	1650	14300.0	7130.0	4.140	157000.0	178434	180.00	367	
2	36	9.72	1300	4870.0	1400.0	2.620	28900.0	35173			
5	36	8.38	300	10200.0	3530.0	7.350	39600.0	53337			
E	36	10.23	550	3500.0	1100.0	1.590	16900.0	21502	6.68	52	
1	48	7.63	285	272.0	757.0	1.790	2720.0	3751			
2	48	10.94	840	11900.0	3490.0	0.310	61800.0	77190			
3	48	9.67	1300	10700.0	3970.0	3.490	21600.0	36273			
4	48	7.76	400	18700.0	4700.0	11.100	45200.0	68611			
5	48	8.51	440	5600.0	1130.0	1.150	34400.0	41131			
6	48	9.17	410	7300.0	7800.0	0.322	22100.0	37200			68.1
A	48	9.02	675	347.0	264.0	1.350	2290.0	2902	1.59	U	
B	48	8.23	1600	1520.0	830.0	17.800	7860	10228	4.67	U	
C	48	9.83	1100	17900.0	38600.0	4.500	116000.0	172505	32.30	87	
D	48	9.64	1300	64000.0	8300.0	0.478	320000.0	392300	173.00	150	
E	48	10.59	500	110.0	48.8	0.396	750.0	909	3.60	U	
G	48	7.75	1700	297.0	538.0	4.270	1790.0	2629	6.28	U	

INTERSTATE METALS SEPARATING CORP.:
SOILS DATA SORTED BY DEPTH

MAP SITE	DEPTH in.	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	Cr mg/kg
H	48	9.11	500	19100.0	4500.0	1.850	98100.0	121702	7.40	72	
I	48	8.14	710	1470.0	464.0	0.412	5630.0	7564			
J	48	8.20	1400	363.0	2630.0	0.440	1410.0	4403			
4	60	7.46	350	190.0	672.0	1.860	1630.0	2494			
D	60	8.64	1700	512.0	80.0	0.648	28500.0	29093	53.30	U	
H	60	7.95	300	205.0	230.0	3.020	950.0	1388	U	U	
1	72	7.48	180	59.5	32.6	U	2200.0	2292			
2	72	8.79	720	22900.0	9850.0	3.640	98000.0	130754			
3	72	9.40	900	64300.0	20700.0	0.892	514000.0	599001			
4	72	6.85	590	1700.0	314.0	1.780	3770.0	5786			
5	72	8.74	400	29.1	16.5	U	241.0	287			
6	72	8.18	900	1960.0	460.0	0.46	9650.0	12070			24.7
A	72	8.15	300	12.7	U	U	34.4	47	U	U	
B	72	8.70	650	8.6	U	U	35.6	44	U	U	
C	72	8.52	825	45.2	9.9	0.654	198.0	254	0.30	U	
E	72	6.99	320	238.0	524.0	5.660	1380.0	2148	2.62	U	
G	72	7.10	1000	18.8	8.9	U	180.0	208	0.41	U	
H	72	7.67	800	1100.0	170.0	5.840	2400.0	3676	2.45	U	
I	72	8.16	490	830.0	613.0	0.526	3040.0	4484			
J	72	8.24	1150	1700.0	2320.0	0.799	2570.0	6591			
J	84	7.88	300	10.7	18.5	U	37.1	66			
1	96	8.01	150	9.2	6.1	U	25.9	41			
3	96	7.85	300	62.0	24.8	U	460.0	547			
4	96	7.60	300	215.0	54.7	0.116	894.0	1164			
5	96	8.93	410	126.0	41.0	U	796.0	963			
6	96	8.55	440	18.6	4.7	U	63.5	87			8.4
B	96	8.81	750	104.0	39.4	2.000	481	626	U	U	
C	96	8.64	550	1950.0	309.0	134.000	14300.0	16693	2.57	U	
D	96	8.45	400	32.6	4.5	U	207.0	244	U	U	
E	96	7.63	410	83.2	22.0	1.080	340.0	446	U	U	
G	96	8.06	1000	6.8	U	U	207.0	214	U	U	
H	96	8.65	500	1450.0	324.0	11.400	7120.0	8905	5.47	26	
I	96	8.10	510	345.0	1670.0	0.345	2930.0	4945			
J	96	7.80	350	15.2	30.0	U	67.2	112			
1	120	7.91	135	30.8	38.3	U	58.5	128			
2	120	8.69	510	539.0	302.0	0.124	5120.0	5961			
3	120	7.80	350	135.0	56.2	U	515.0	706			
4	120	8.45	400	58.7	15.7	0.108	1970.0	2045			
5	120	8.56	425	12.7	12.2	U	79.1	104			
6	120	8.51	590	120.0	5.6	U	320.0	446			7.6
I	120	7.99	330	11.6	12.0	U	41.1	65			
J	120	8.21	410	49.7	52.0	U	169.0	271			
1	144	7.83	100	9.3	6.5	U	31.2	47			
2	144	8.36	390	242.0	109.0	U	2410.0	2761			
3	144	7.89	420	11.9	8.2	U	38.9	59			
4	144	8.14	310	520.0	93.0	0.230	1890.0	2503			

TABLE II(2)

INTERSTATE METALS SEPARATING CORP.:
SOILS DATA SORTED BY DEPTH

MAP SITE	DEPTH in.	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	Cr mg/kg
5	144	8.38	475	182.0	61.8	U	883.0	1127			
7	144	8.65	450	120.0	21.9	U	600.0	742			8.2
1	168	7.78	130	12.1	6.2	U	59.5	78			
2	168	8.33	285	39.6	14.9	U	152.0	207			
6	168	8.52	440	130.0	8.6	U	270.0	409			9.1
7	168	8.37	580	29.6	6.2	U	160.0	196			8.5
8	168	8.36	560	28.5	5.2	U	140.0	174			8.5
6	192	7.96	610	34.4	U	U	580.0	614			4.2
6	216	8.55	600	25.5	U	U	79.5	105			7.0
6	240	8.46	460	23.2	U	U	45.8	69			4.4
6	288	8.14	590	15.0	U	U	44.0	59			4.6
6	336	8.44	570	25.3	3.7	U	104.0	133			9.9
6	420	8.27	500	66.6	7.4	U	308.0	382			5.1
6	444	9.37	680	130.0	14.0	U	490.0	634			9.8
6	456	9.30	660	50.7	8.5	0.13	180.0	239			11.2
6	468	9.10	550	210.0	22.1	U	710.0	942			8.7

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INTERSTATE METALS SEPARATING CORP.:
A. SOIL STATISTICS BY DEPTH AND MEDIUM

SAMPLE TYPE	DEPTH inches	STATISTIC	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	PHC mg/kg	Cr mg/L
SOIL	6	N	14	14	14	14	14	14	14	7	7	2	6
		MEAN	9.23	1120.00	29313.64	7403.00	539.71	107878.57	145134.92	29.84	371.43	21.50	77.23
		STD	0.79	573.90	22576.38	4644.68	993.71	98922.18	119725.40	38.66	302.02	21.50	42.71
		STD/MEAN	0.09	0.51	0.77	0.63	1.84	0.92	0.82	1.30	0.81	1.00	0.55
SOIL	24	N	16	16	16	16	16	16	16	10	10		1
		MEAN	8.77	1155.31	9252.25	6193.00	159.04	72749.38	88353.67	59.19	140.40		106.00
		STD	1.17	1167.73	10216.33	6143.08	518.62	102457.04	107359.78	121.27	101.03		0.00
		STD/MEAN	0.13	1.01	1.10	0.99	3.26	1.41	1.22	2.05	0.72		0.00
SOIL	36	N	4	4	4	4	4	4	4	2	2		
		MEAN	9.08	950.00	8217.50	3290.00	3.93	60600.00	72111.43	93.34	209.50		
		STD	0.92	546.58	4312.41	2406.83	2.18	56232.86	62415.58	86.66	157.50		
		STD/MEAN	0.10	0.58	0.52	0.73	0.55	0.93	0.87	0.93	0.75		
SOIL	48	N	15	15	15	15	15	15	15	7	7		1
		MEAN	8.95	877.33	10638.60	5201.45	3.31	49443.33	65286.70	32.69	44.14		68.10
		STD	1.00	463.50	15872.12	9288.62	4.74	80383.43	99934.04	58.09	55.57		0.00
		STD/MEAN	0.11	0.53	1.49	1.79	1.43	1.63	1.53	1.78	1.26		0.00
SOIL	60	N	3	3	3	3	3	3	3	2			
		MEAN	8.02	783.33	302.33	327.33	1.84	10360.00	10991.51	26.65			
		STD	0.48	648.50	148.38	251.29	0.97	12829.92	12807.40	26.65			
		STD/MEAN	0.06	0.83	0.49	0.77	0.53	1.24	1.17	1.00			
SOIL	72	N	14	14	14	14	14	14	14	6			
		MEAN	8.07	658.93	6778.71	2501.35	1.45	45549.93	54831.43	0.96			
		STD	0.73	280.10	16960.40	5633.39	1.99	132257.51	154474.70	1.12			
		STD/MEAN	0.09	0.43	2.50	2.25	1.38	2.90	2.82	1.16			

INTERSTATE METALS SEPARATING CORP.:
A. SOIL STATISTICS BY DEPTH AND MEDIUM

SAMPLE TYPE	DEPTH inches	STATISTIC	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg	Cd mg/kg	Sn mg/kg	PHC mg/kg	Cr mg/L
SOIL	96	N	14	14	14	14	14	14	14	6	6		
		MEAN	8.21	455.00	316.31	182.05	10.64	1994.91	2503.90	1.34	4.33		
		STD	0.43	203.81	579.96	425.44	34.34	3874.29	4613.25	2.07	9.69		
		STD/MEAN	0.05	0.45	1.83	2.34	3.23	1.94	1.84	1.55	2.24		
SOIL	120	N	8	8	8	8	8	8	8				
		MEAN	8.27	393.75	119.69	61.75	0.03	1034.09	1215.56				
		STD	0.31	125.62	164.20	92.60	0.05	1656.36	1893.95				
		STD/MEAN	0.04	0.32	1.37	1.50	1.74	1.60	1.56				
SOIL	144	N	6	6	6	6	6	6	6				
		MEAN	8.21	357.50	180.87	50.06	0.04	975.52	1206.49				
		STD	0.29	126.42	173.42	40.62	0.09	895.60	1078.69				
		STD/MEAN	0.04	0.35	0.96	0.81	2.24	0.92	0.89				
SOIL	168	N	5	5	5	5	5	5	5				3
		MEAN	8.27	399.00	47.96	8.20		156.30	212.46				8.68
		STD	0.25	170.72	41.96	3.53		67.22	108.08				0.32
		STD/MEAN	0.03	0.43	0.87	0.43		0.43	0.51				0.04
SOIL	192-468	N	9	9	9	9	9	9	9				9
		MEAN	8.62	580.00	64.52	6.19	0.01	282.37	353.09				7.22
		STD	0.48	66.33	61.26	7.31	0.04	238.39	295.35				2.58
		STD/MEAN	0.06	0.11	0.95	1.18	2.83	0.84	0.84				0.36

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TABLE II(3)

INTERSTATE METALS SEPARATING CORP.:
B. WATER STATISTICS BY DEPTH

SAMPLE TYPE	DEPTH inches		pH su	CONDUCT. umhos/cm	Cu mg/L	Pb mg/L	Hg mg/L	Zn mg/L	TOTAL mg/L	Cd mg/L	Sn mg/L	PHC mg/L	Cr' mg/L
WATER	SURFACE	N	6	6	6	6	6	6	6				
		MEAN	9.34	2031.67	0.27	0.15	0.00	0.15	0.56				
		STD	0.72	1507.65	0.13	0.10	0.00	0.16	0.18				
		STD/MEAN	0.08	0.74	0.50	0.66	1.27	1.08	0.32				
WATER	WELL TO 168 IN. MAX	N	6	6	6	6		6	6				6
		MEAN	8.28	1693.33	0.14	0.08		0.66	0.88				0.13
		STD	0.79	608.76	0.17	0.09		0.68	0.62				0.07
		STD/MEAN	0.10	0.36	1.25	1.10		1.03	0.71				0.56
WATER	WELL, DEEP	N	2	2	2	2		2	2				
		MEAN	8.24	2450.00	0.04	0.03		0.54	0.60				
		STD	0.06	50.00	0.04	0.01		0.22	0.27				
		STD/MEAN	0.01	0.02	1.00	0.44		0.40	0.44				

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TABLE II(3)

INTERSTATE METALS SEPARATING CORP.:
C. SUMMARY OF MEANS OF SOILS DATA BY DEPTH

DEPTH feet	pH su	CONDUCT. umhos/cm	Cu mg/kg	Cu Cu/170	Pb mg/kg	Pb Pb/100	Hg mg/kg	Hg Hg/1	Zn mg/kg	Zn Zn/350	TOTAL mg/kg	TOTAL g/kg
0.5	9.23	1120.00	29313.64	172.43	7403.00	74.03	539.71	539.71	107878.57	308.22	145134.92	145.13
2	8.77	1155.31	9252.25	54.43	6193.00	61.93	159.04	159.04	72749.38	207.86	88353.67	88.35
3	9.08	950.00	8217.50	48.34	3290.00	32.90	3.93	3.93	60600.00	173.14	72111.43	72.11
4	8.95	877.33	10638.60	62.58	5201.45	52.01	3.31	3.31	49443.33	141.27	65286.70	65.29
6	8.07	658.93	6778.71	39.87	2501.35	25.01	1.45	1.45	45549.93	130.14	54831.43	54.83
8	8.21	455.00	316.31	1.86	182.05	1.82	10.64	10.64	1994.91	5.70	2503.90	2.50
10	8.27	393.75	119.69	0.70	61.75	0.62	0.03	0.03	1034.09	2.95	1215.56	1.22
12	8.21	357.50	180.87	1.06	50.06	0.50	0.04	0.04	975.52	2.79	1206.49	1.21
14	8.27	399.00	47.96	0.28	8.20	0.08		0.00	156.30	0.45	212.46	0.21

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TABLE II(3)

INTERSTATE METALS SEPARATING CORP.:
C. SUMMARY OF MEANS OF SOILS DATA BY DEPTH

DEPTH feet	Cd mg/kg	Sn mg/kg	PHC mg/kg	Cr mg/L
0.5	29.84	371.43	21.50	77.23
2	59.19	140.40		106.00
3	93.34	209.50		
4	32.69	44.14		68.10
6	0.96			
8	1.34	4.33		
10				
12				
14				8.68

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TABLE II(4)

INTERSTATE METALS SEPARATING DATA:
SOILS DATA FROM DEEP WELL CLUSTER (MW6, MW7, MW8)

SAMPLE ID	DEPTH feet	Cu mg/kg	Cu Cu/170	Pb mg/kg	Pb Pb/100	Hg mg/kg	Hg Hg/1	Zn mg/kg	Zn Zn/350	TOTAL mg/kg
MW6-2	2	14700.0	86.5	4900.0	49.0	55.3	55.3	110000.0	314.3	129655
MW6-2	2	14700.0	86.5	4900.0	49.0	55.3	55.3	110000.0	314.3	129655
MW6-4	4	7300.0	42.9	7800.0	78.0	0.3	0.3	22100.0	63.1	37200
MW6-6	6	1960.0	11.5	460.0	4.6	0.5	0.5	9650.0	27.6	12070
MW6-8	8	18.6	0.1	4.7	0.0	U	U	63.5	0.2	87
MW6-10	10	120.0	0.7	5.6	0.1	U	U	320.0	0.9	446
MW7-12	12	120.0	0.7	21.9	0.2	U	U	600.0	1.7	742
MW6-14	14	130.0	0.8	8.6	0.1	U	U	270.0	0.8	409
MW7-14	14	29.6	0.2	6.2	0.1	U	U	160.0	0.5	196
MW8-14	14	28.5	0.2	5.2	0.1	U	U	140.0	0.4	174
MW6-16	16	34.4	0.2	U	U	U	U	580.0	1.7	614
MW6-18	18	25.5	0.2	U	U	U	U	79.5	0.2	105
MW6-20	20	23.2	0.1	U	U	U	U	45.8	0.1	69
MW6-24	24	15.0	0.1	U	U	U	U	44.0	0.1	59
MW6-28	28	25.3	0.1	3.7	0.0	U	U	104.0	0.3	133
MW6-35	35	66.6	0.4	7.4	0.1	U	U	308.0	0.9	382
MW6-40C	37	130.0	0.8	14.0	0.1	U	U	490.0	1.4	634
MW6-40B	38	50.7	0.3	8.5	0.1	0.1	0.1	180.0	0.5	239
MW6-40A	39	210.0	1.2	22.1	0.2	U	U	710.0	2.0	942

INTERSTATE METALS SEPARATING CORP.:
GROUNDWATER LEVEL MEASUREMENTS IN FEET

WELL	TOP OF CASING ELEVATION	TOP OF CASING TO GROUND	GROUND ELEVATION
MW1	7.19	2.00	5.19
MW2	6.85	2.40	4.45
MW3	6.18	2.80	3.38
MW4	7.54	3.60	3.94
MW5	5.89	3.70	2.19
MW6	6.42	2.42	4.00
MW7	6.14	2.29	3.85
MW8	5.98	2.00	3.98

WELL	DATE	TIME	TOP OF CASING TO WATER	WATER ELEVATION
MW1	05-Feb-87	9:45	6.30	0.89
MW1	04-Mar-87	7:55	5.95	1.24
MW1	09-Mar-87	8:10	5.97	1.22
MW1	17-Mar-87	8:45	6.50	0.69
MW1	03-Aug-87	8:50	7.88	-0.68
MW1	21-Aug-87	8:51	8.31	-1.12
MW2	05-Feb-87	11:50	4.95	1.90
MW2	04-Mar-87	8:07	4.70	2.15
MW2	09-Mar-87	8:22	4.62	2.23
MW2	17-Mar-87	12:56	4.92	1.93
MW2	03-Aug-87	8:53	5.58	1.27
MW2	21-Aug-87	8:47	5.67	1.18
MW3	05-Feb-87	12:37	4.55	1.63
MW3	04-Mar-87	8:09	4.35	1.83
MW3	09-Mar-87	8:25	4.28	1.90
MW3	17-Mar-87	12:53	4.55	1.63
MW3	03-Aug-87	8:55	5.09	1.09
MW3	21-Aug-87	8:45	5.23	0.95
MW4	05-Feb-87	13:23	6.05	1.49
MW4	04-Mar-87	8:12	5.65	1.89
MW4	09-Mar-87	8:30	5.64	1.90
MW4	17-Mar-87	12:49	5.94	1.60
MW4	03-Aug-87	8:56	6.52	1.02
MW4	21-Aug-87	8:35	6.58	0.96
MW5	05-Feb-87	14:03	5.05	0.84
MW5	04-Mar-87	8:15	5.03	0.86
MW5	09-Mar-87	8:32	4.98	0.91
MW5	17-Mar-87	12:45	5.32	0.57
MW5	03-Aug-87	9:00	5.83	0.06
MW5	21-Aug-87	8:23	6.02	-0.13
MW6	09-Mar-87	8:36	5.86	0.56
MW6	17-Mar-87	8:50	6.33	0.09
MW6	03-Aug-87	9:04	7.25	-0.83
MW6	21-Aug-87	8:30	7.69	-1.27
MW7	09-Mar-87	8:39	5.10	1.04
MW7	17-Mar-87	8:50	5.55	0.59
MW7	03-Aug-87	9:06	6.38	-0.24
MW7	21-Aug-87	8:29	6.71	-0.57
MW8	09-Mar-87	8:40	4.75	1.23
MW8	17-Mar-87	8:51	5.20	0.78
MW8	03-Aug-87	9:15	5.87	0.11
MW8	21-Aug-87	8:25	6.27	-0.29

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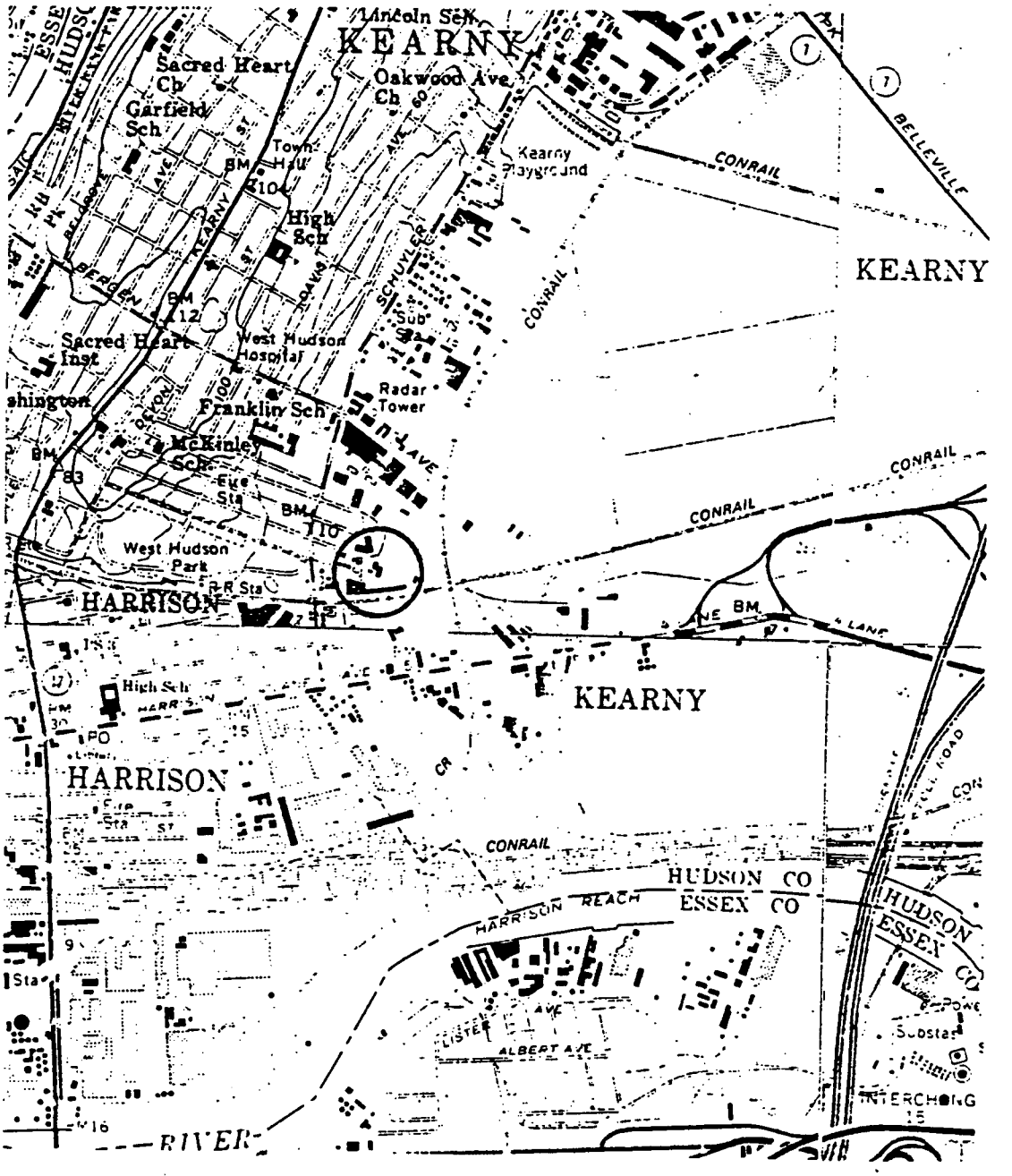
INTERSTATE METALS SEPARATING CORP.:
SOIL VS. WATER CONCENTRATIONS

MAP SITE	SAMPLE ID	SAMPLE TYPE	pH su	CONDUCT. umhos/cm	Cu mg/kg	Pb mg/kg	Hg mg/kg	Zn mg/kg	TOTAL mg/kg
1	MW1	SOIL	7.72	174.3	277.6	1178.1	1.34	7656.4	9113
2	MW2	SOIL	8.95	703.6	12527.2	4789.4	6.57	45626.0	62949
3	MW3	SOIL	8.91	1378.3	15651.5	6226.5	27.23	102269.0	124174
4	MW4	SOIL	7.71	391.7	3564.0	974.9	2.53	9225.7	13767
5	MW5	SOIL	8.52	407.1	3172.8	1095.9	1.30	15071.3	19341
6	MW6	SOIL	8.90	592.0	96.5	11.1	0.03	358.4	466
7	MW7	SOIL	8.28	565.0	24.5	0.0	0.00	187.3	212
8	MW8	SOIL	8.45	516.7	3468.8	1885.6	8.01	20417.6	25780
U	LS-1	SOIL	9.63	2000.0	45000.0	14000.0	190.00	290000.0	349190
V	LS-2	SOIL	9.89	1500.0	92000.0	11000.0	56.20	300000.0	403056
W	LS-3	SOIL	9.48	1510.0	38000.0	5200.0	61.30	270000.0	313261
X	PS-1	SOIL	8.68	900.0	1800.0	6000.0	780.00	68000.0	76580
Y	PS-2	SOIL	9.43	450.0	30000.0	11000.0	11.40	21000.0	62011
Z	PS-3	SOIL	8.69	590.0	20000.0	6700.0	41.60	62000.0	88742
					mg/l	mg/l	mg/l	mg/l	mg/l
1	MW1	WATER	7.45	630	0.000	0.290	0.0000	0.270	0.560
2	MW2	WATER	8.41	1280	0.050	0.062	0.0000	0.820	0.932
3	MW3	WATER	9.87	1800	0.510	0.055	0.0000	0.150	0.715
4	MW4	WATER	7.63	1750	0.070	0.042	0.0000	2.100	2.212
5	MW5	WATER	8.04	2200	0.110	0.042	0.0000	0.280	0.432
6	MW6	WATER	8.29	2500	0.000	0.016	0.0000	0.320	0.336
7	MW7	WATER	8.18	2400	0.080	0.041	0.0000	0.750	0.871
8	MW8	WATER	8.27	2500	0.080	0.017	0.0000	0.320	0.417
U	LW-1	WATER	10.02	3500	0.300	0.237	0.0000	0.070	0.607
V	LW-2	WATER	10.08	3600	0.410	0.304	0.0000	0.070	0.784
W	LW-3	WATER	10.07	3500	0.260	0.141	0.0000	0.010	0.411
X	PW-1	WATER	8.48	790	0.130	0.136	0.0035	0.480	0.750
Y	PW-2	WATER	8.69	400	0.070	0.027	0.0012	0.170	0.268
Z	PW-3	WATER	8.68	400	0.430	0.044	0.0012	0.070	0.545

INTERSTATE METALS

FIGURE I.(1)



J.H. CROW CO., INC.

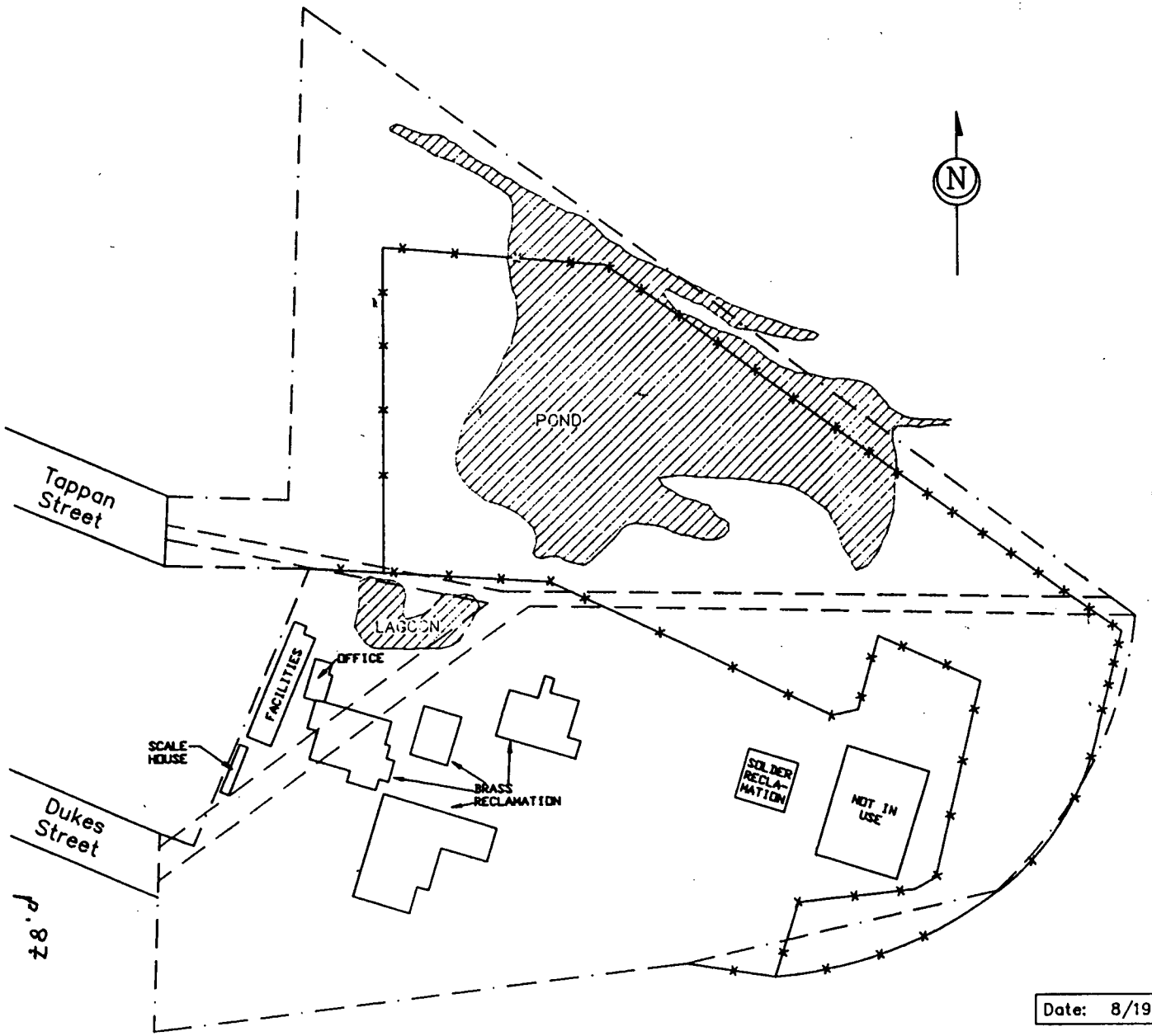
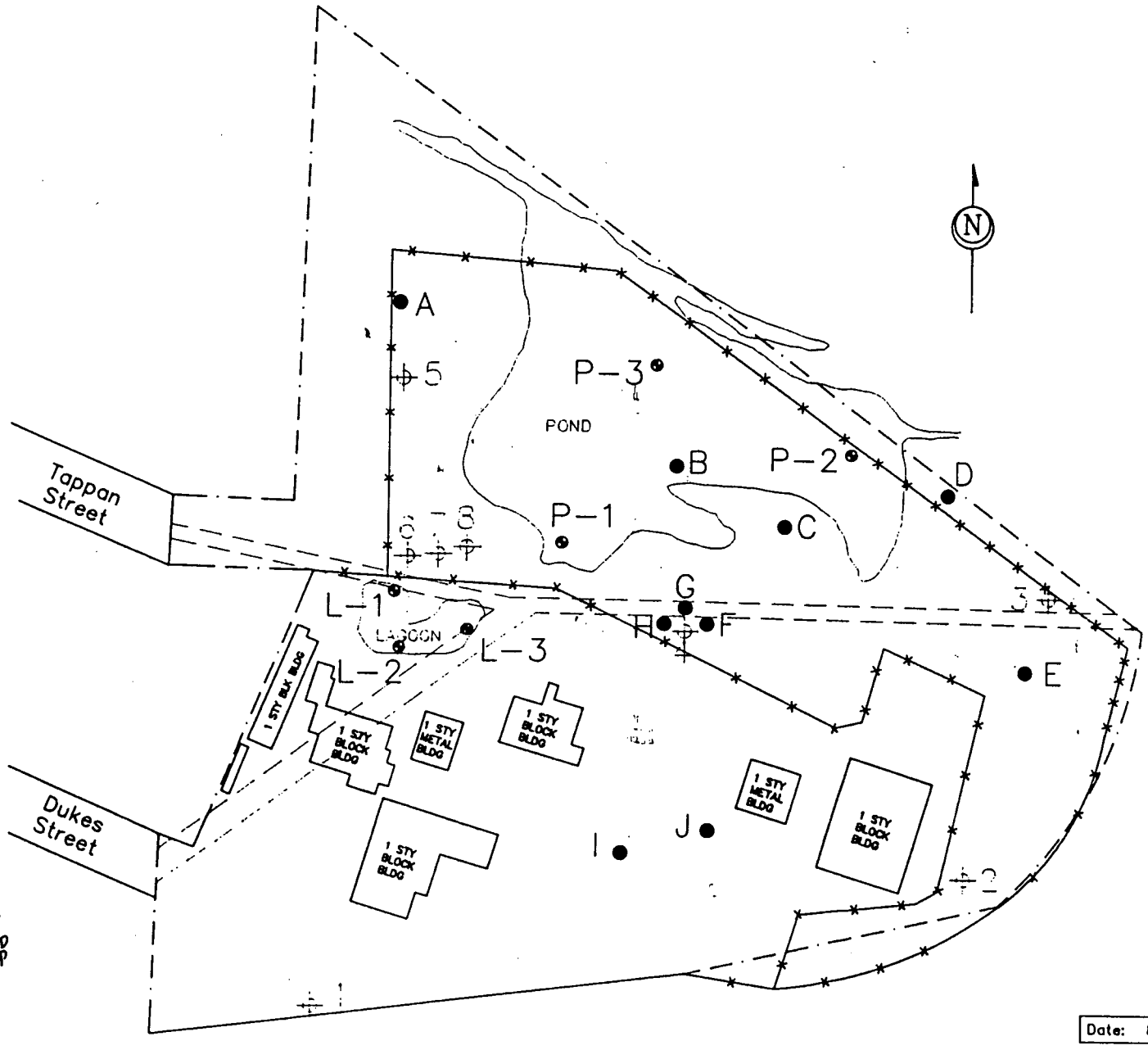


FIGURE I(2)

	INTERSTATE METALS TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY
	SITE PLAN WITH CURRENT OPERATIONS
Date: 8/19/87	J. H. CROW CO., INC. - PORT MURRAY, NJ



Key

- Property Boundary
- Easement
- Chainlink Fence
- Monitoring Well/Soil Boring
- Soil Boring
- Water/Sediment Sample Locations
- Surface Water

0 200
Scale feet

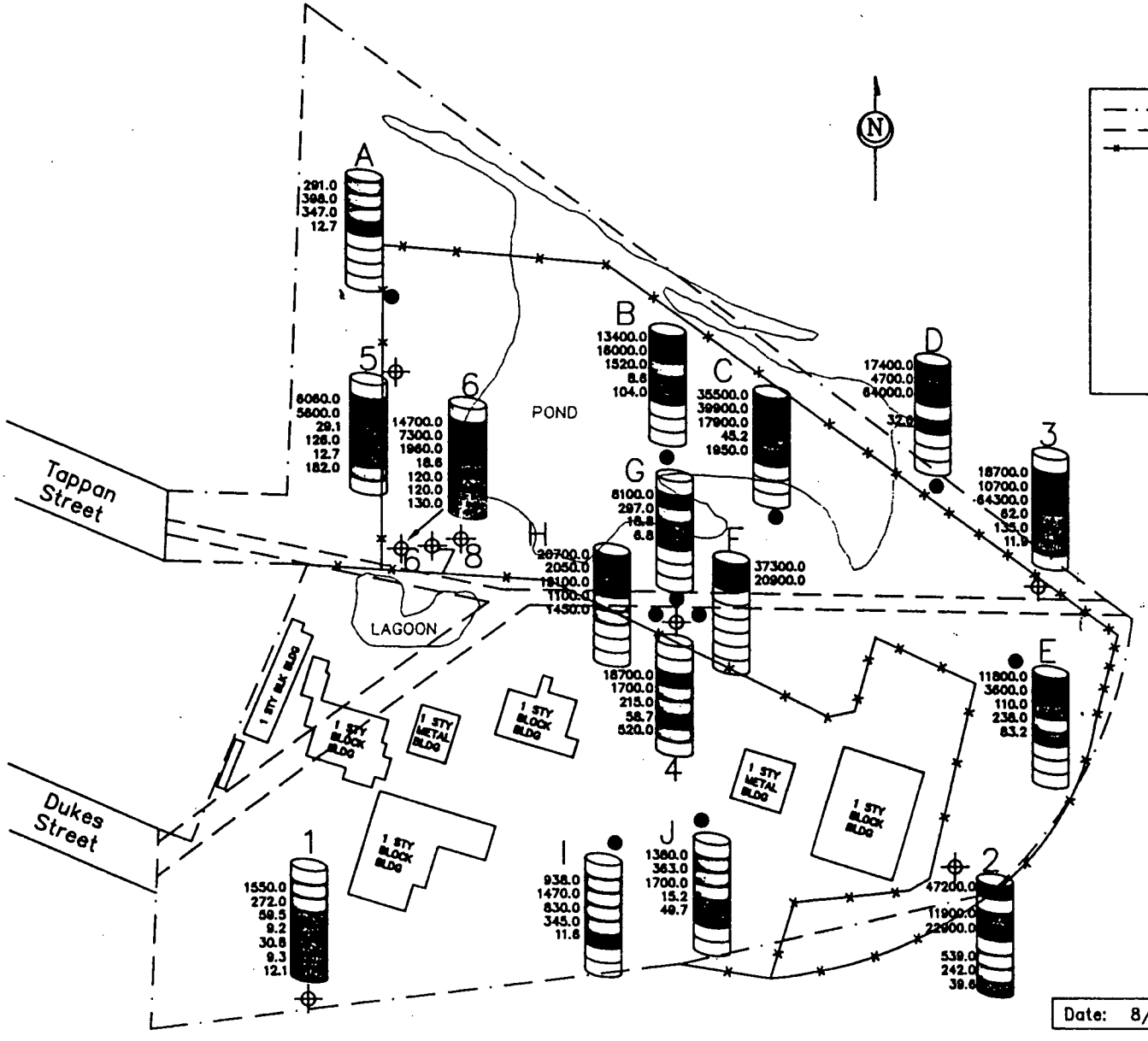
FIGURE II(1)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

SITE PLAN

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ



Key

- Property Boundary
- Easement
- Chainlink Fence
- Monitoring Well/Soil Boring
- Soil Boring
- Surface Water
- 100–1000x DEP Level of Concern for Cu*
- 10–100x DEP Level of Concern for Cu*
- 1–10x DEP Level of Concern for Cu*
- Below DEP Level of Concern
- No Sample Analysis Available

*170 mg/kg

Values Reported are mg/kg

NOTE: The cylinders represent the stratification of the analytical results for the various sampling locations. Soil depths correspond to the adjacent figure.

0 — 200
Scale — feet

FIGURE II(2)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

COPPER (Cu) LEVELS

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

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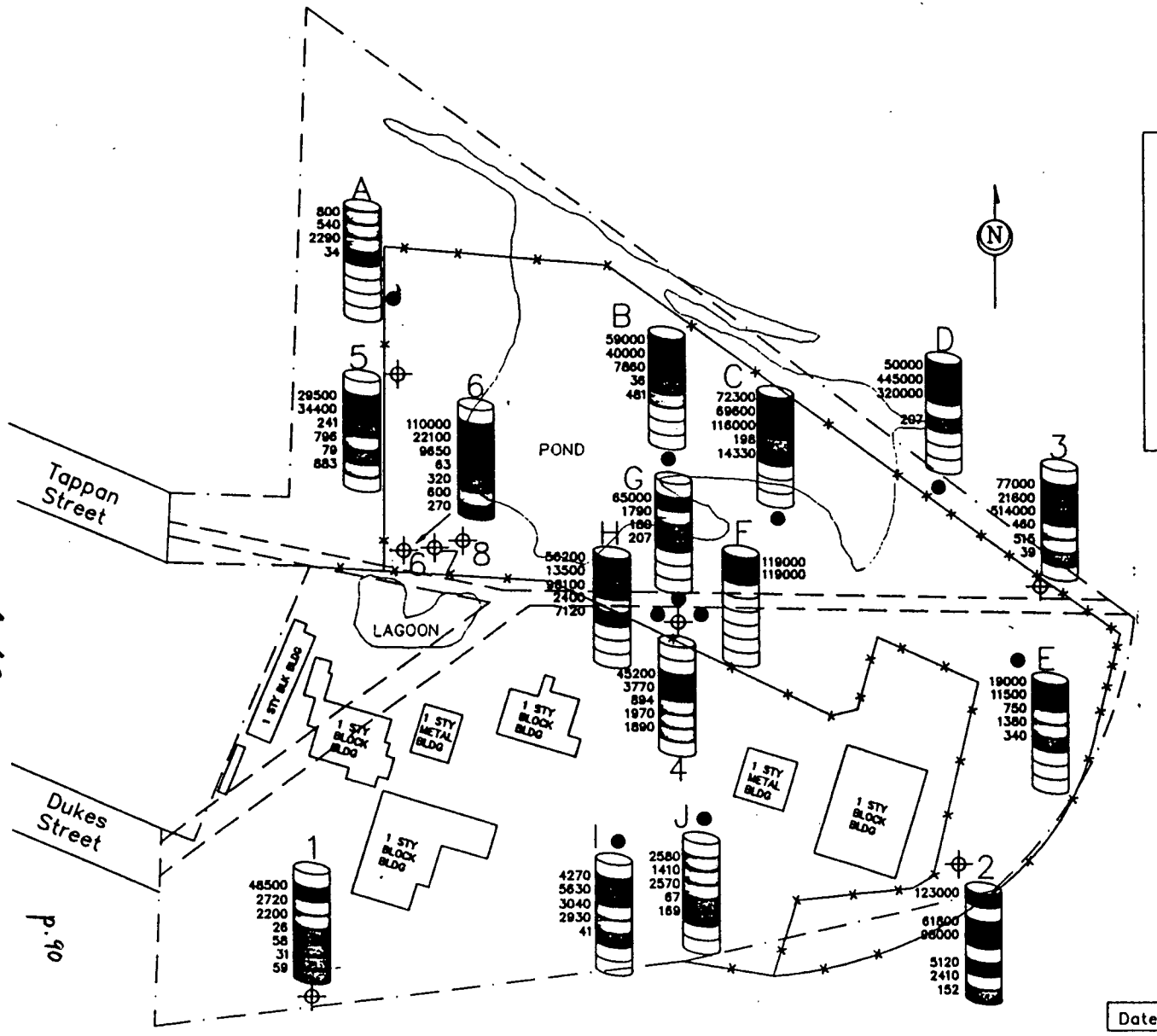

Key

- Property Boundary
- Easement
- Chainlink Fence
- Monitoring Well/Soil Boring
- Soil Boring
- Waterbound Areas
- >100x DEP Level of Concern for Zn*
- 10–100x DEP Level of Concern for Zn*
- 1–10x DEP Level of Concern for Zn*
- Below DEP Level of Concern*
- No Sample Analysis Available

*350 mg/kg

Values Reported are mg/kg

0 — 200
Scale — feet

NOTE: The cylinders represent the stratification of the analytical results for the various sampling locations. Soil depths correspond to the adjacent figure.

FIGURE II(3)

	INTERSTATE METALS TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY
	ZINC (Zn) LEVELS
Date: 8/19/87	J. H. CROW CO., INC. - PORT MURRAY, NJ

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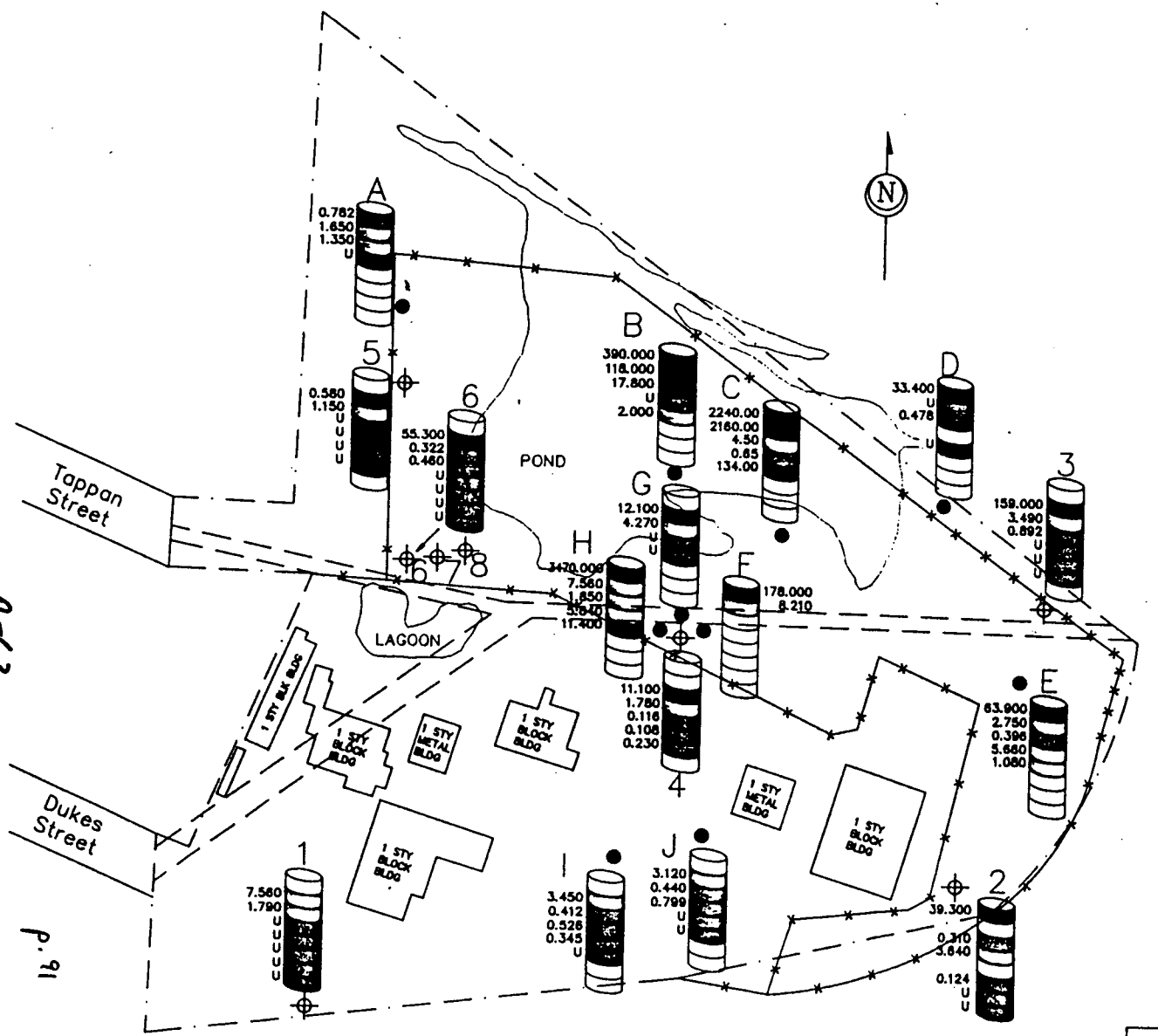

Key

- Property Boundary
- Easement
- Chainlink Fence
- Monitoring Well/Soil Boring
- Soil Boring
- Surface Water
- >100x DEP Level of Concern for Hg*
- 10–100x DEP Level of Concern for Hg*
- 1–10x DEP Level of Concern for Hg*
- Below DEP Level of Concern* (U indicates undetected levels)
- No Sample Analysis Available

*1 mg/kg

Values Reported are mg/kg

0 — 200 Scale feet

NOTE: The cylinders represent the stratification of the analytical results for the various sampling locations. Soil depths correspond to the adjacent figure.

FIGURE II(4)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

MERCURY (Hg) LEVELS

Date: 8/18/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

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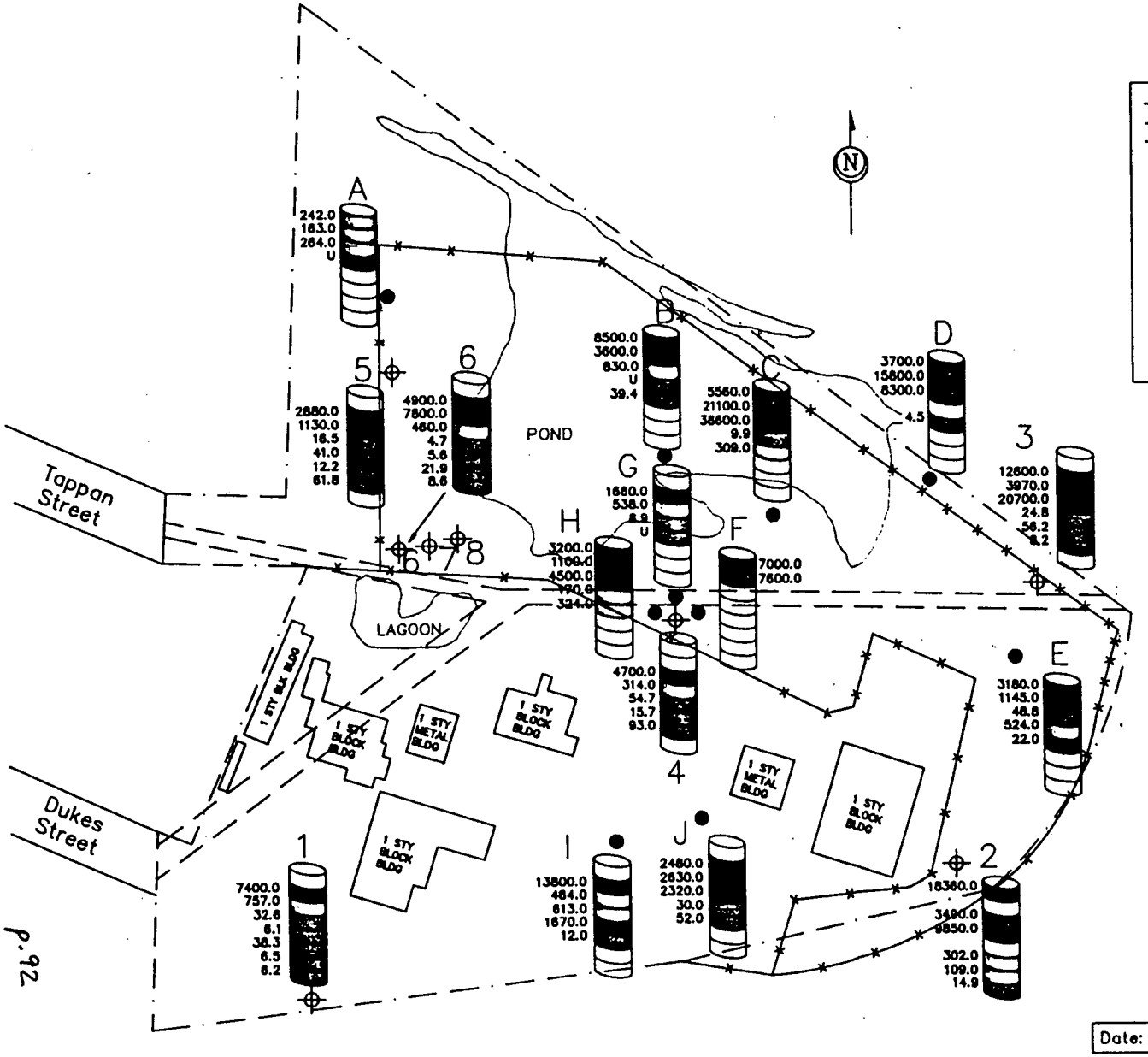

Key

- Property Boundary
- Easement
- Chainlink Fence
- Monitoring Well/Soil Boring
- Soil Boring
- >100x DEP Level of Concern for Pb*
- 10–100x DEP Level of Concern for Pb*
- 1–10x DEP Level of Concern for Pb*
- Below DEP Level of Concern* (U indicates undetected levels)
- No Sample Analysis Available
- * 100 mg/kg

Values Reported are mg/kg

0 — 200 Scale feet

NOTE: The cylinders represent the stratification of the analytical results for the various sampling locations. Soil depths correspond to the adjacent figure.

FIGURE II(5)

INTERSTATE METALS

TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

LEAD (Pb) LEVELS

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

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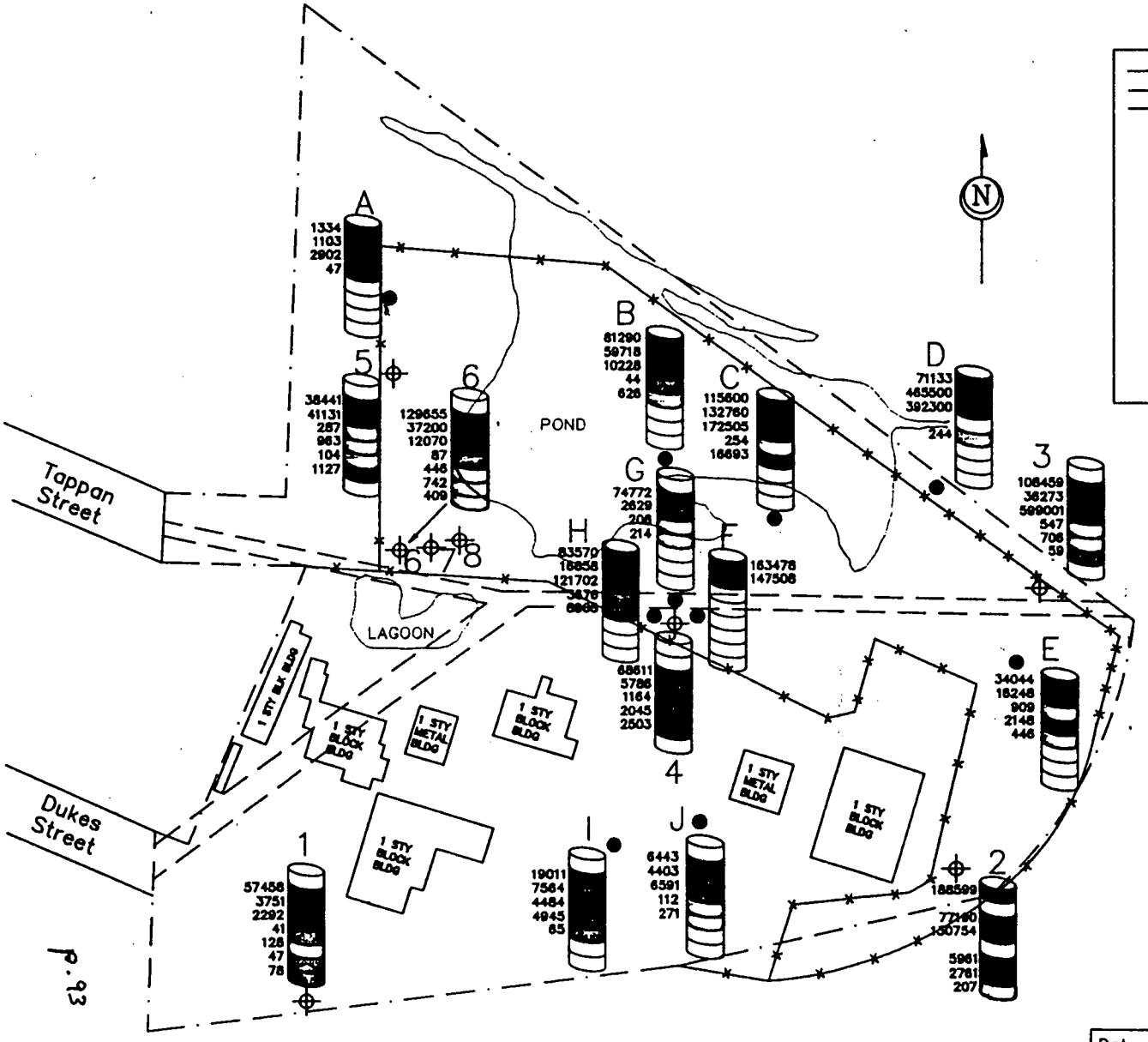

Key

- Property Boundary
- Easement
- Chainlink Fence
- Monitoring Well/Soil Boring
- Soil Boring
- Surface Water
- 100–600 g/kg Total Concentration*
- 10–100 g/kg Total Concentration*
- 1–10 g/kg Total Concentration*
- 100–1000 mg/kg Total Concentration*
- <100 mg/kg Total Concentration*
- No Sample Analysis Available

* Copper+Zinc+Mercury+Lead Levels

Values Reported are mg/kg

0 — 200
Scale — feet

NOTE: The cylinders represent the stratification of the analytical results for the various sampling locations. Soil depths correspond to the adjacent figure.

FIGURE II(6)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

TOTAL CONCENTRATION OF Cu Zn, Hg, Pb

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

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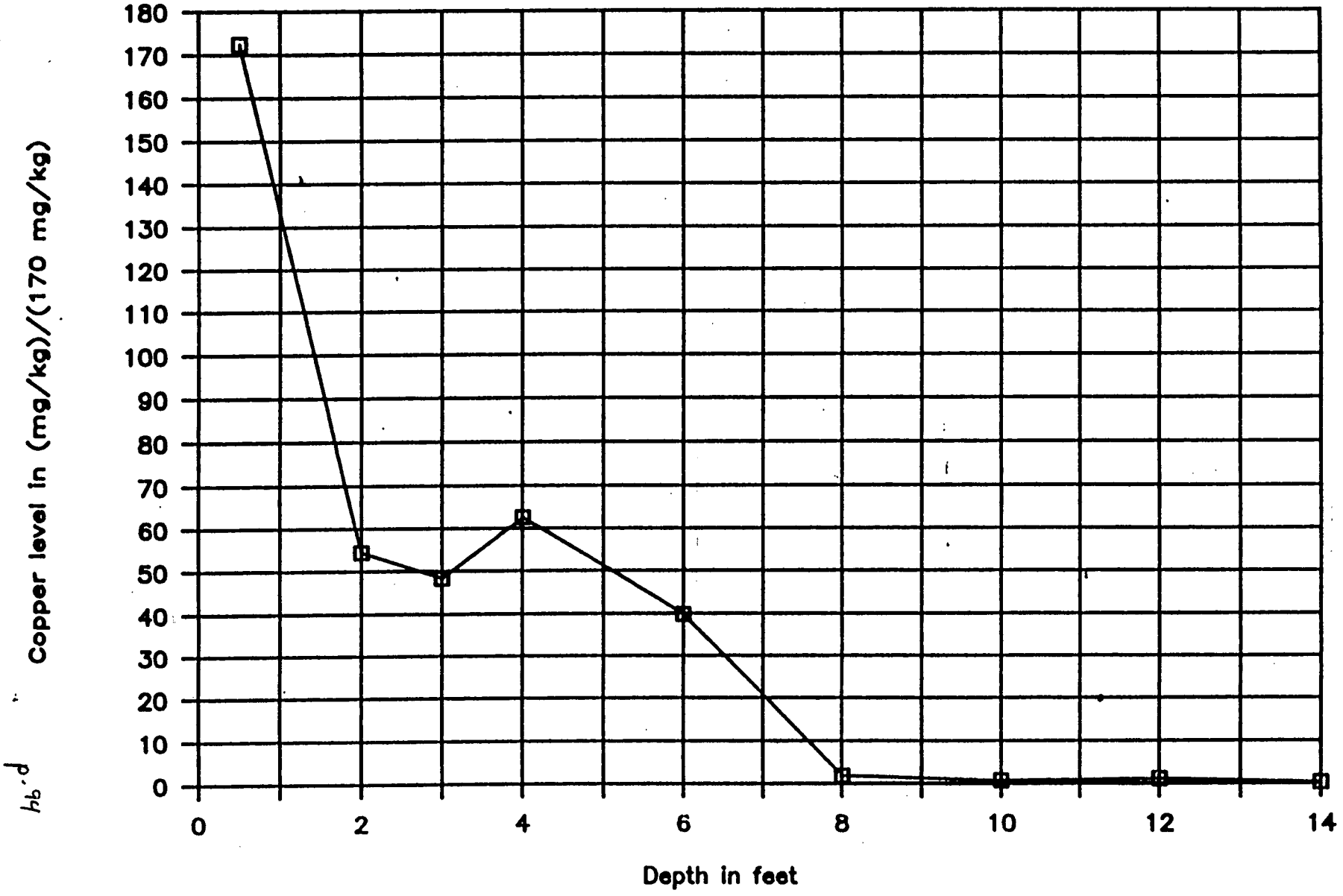
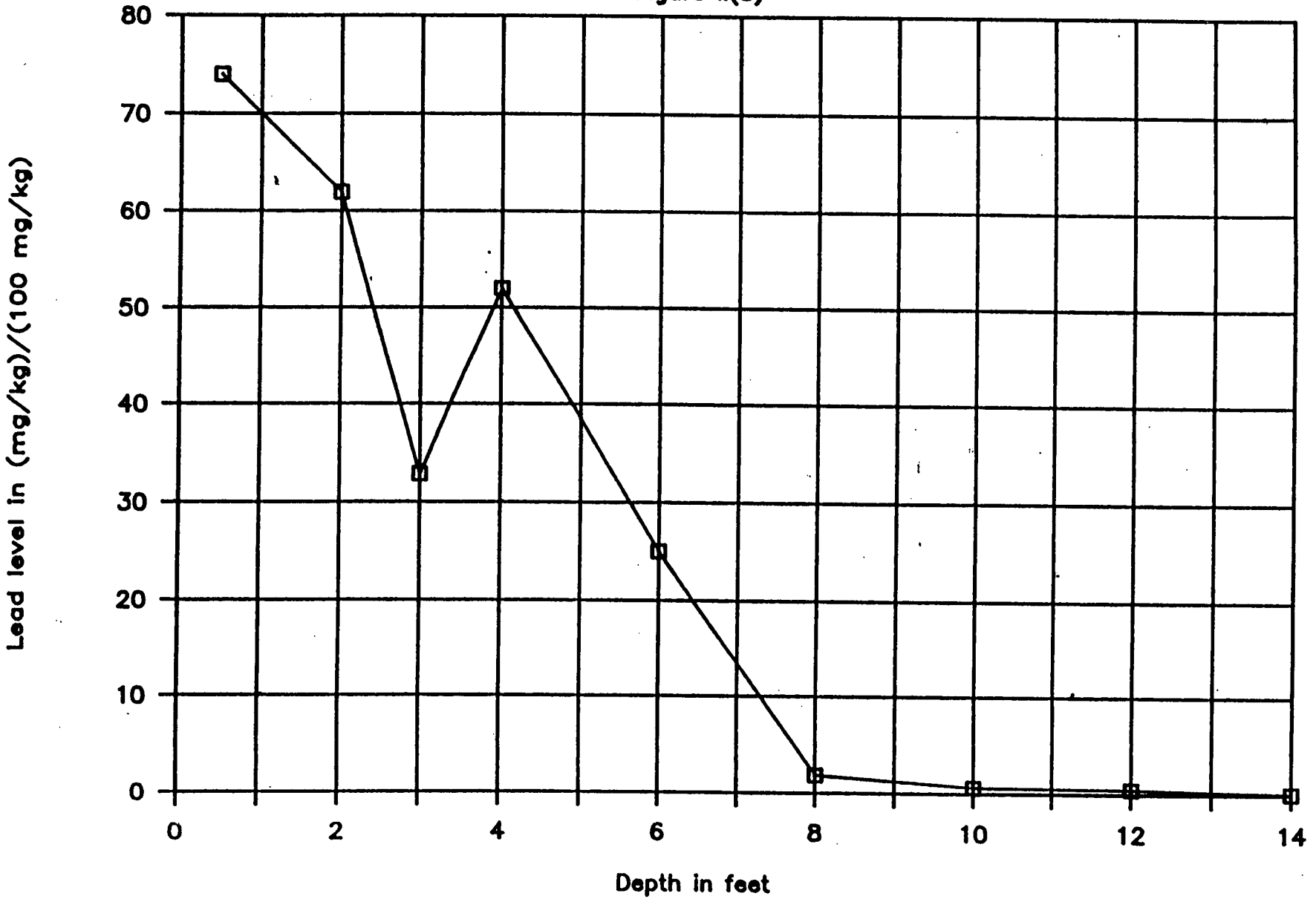
MEAN COPPER LEVELS IN SOILS

Figure II(7)



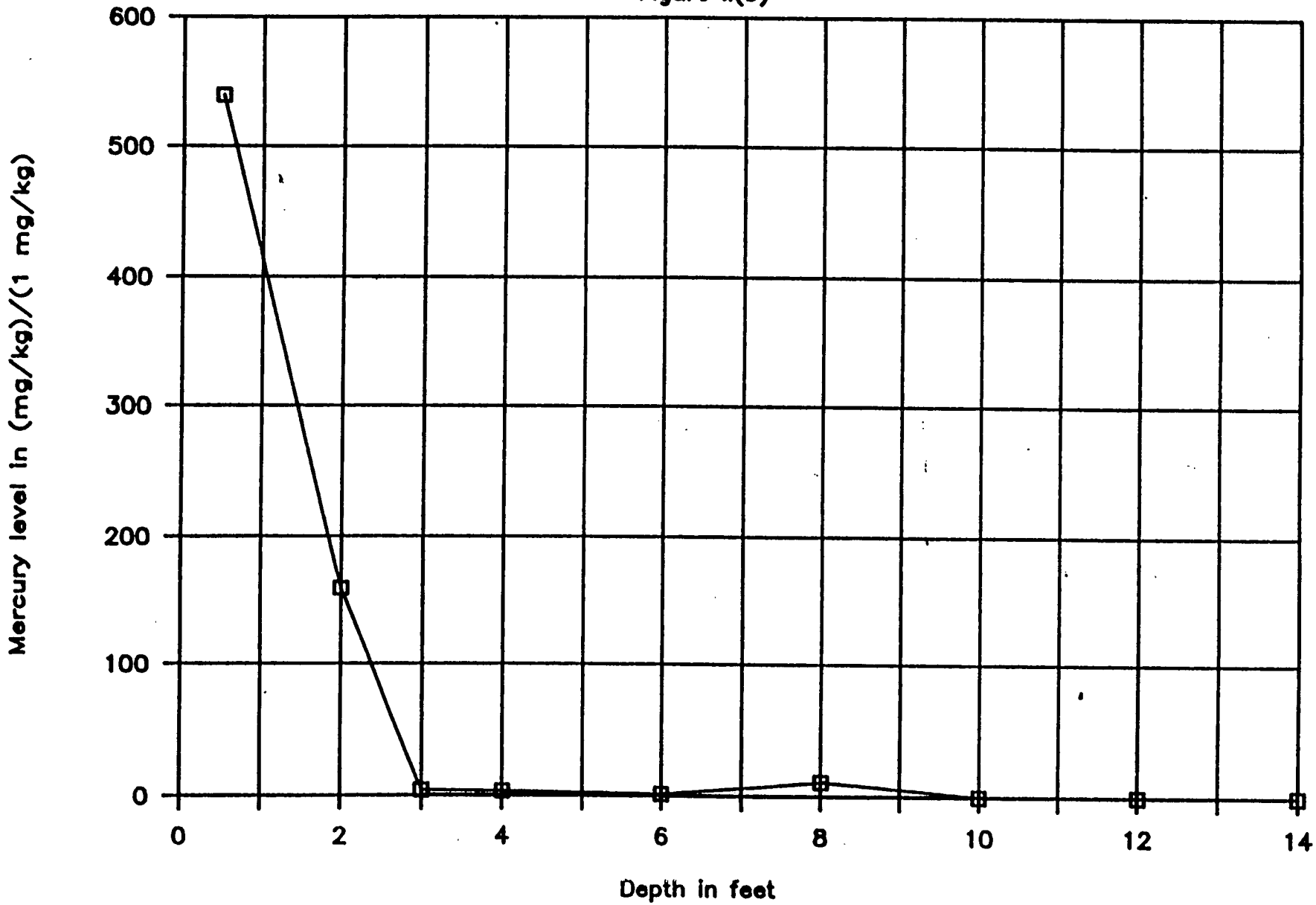
MEAN LEAD LEVELS IN SOILS

Figure II(8)



MEAN MERCURY LEVELS IN SOILS

Figure II(9)



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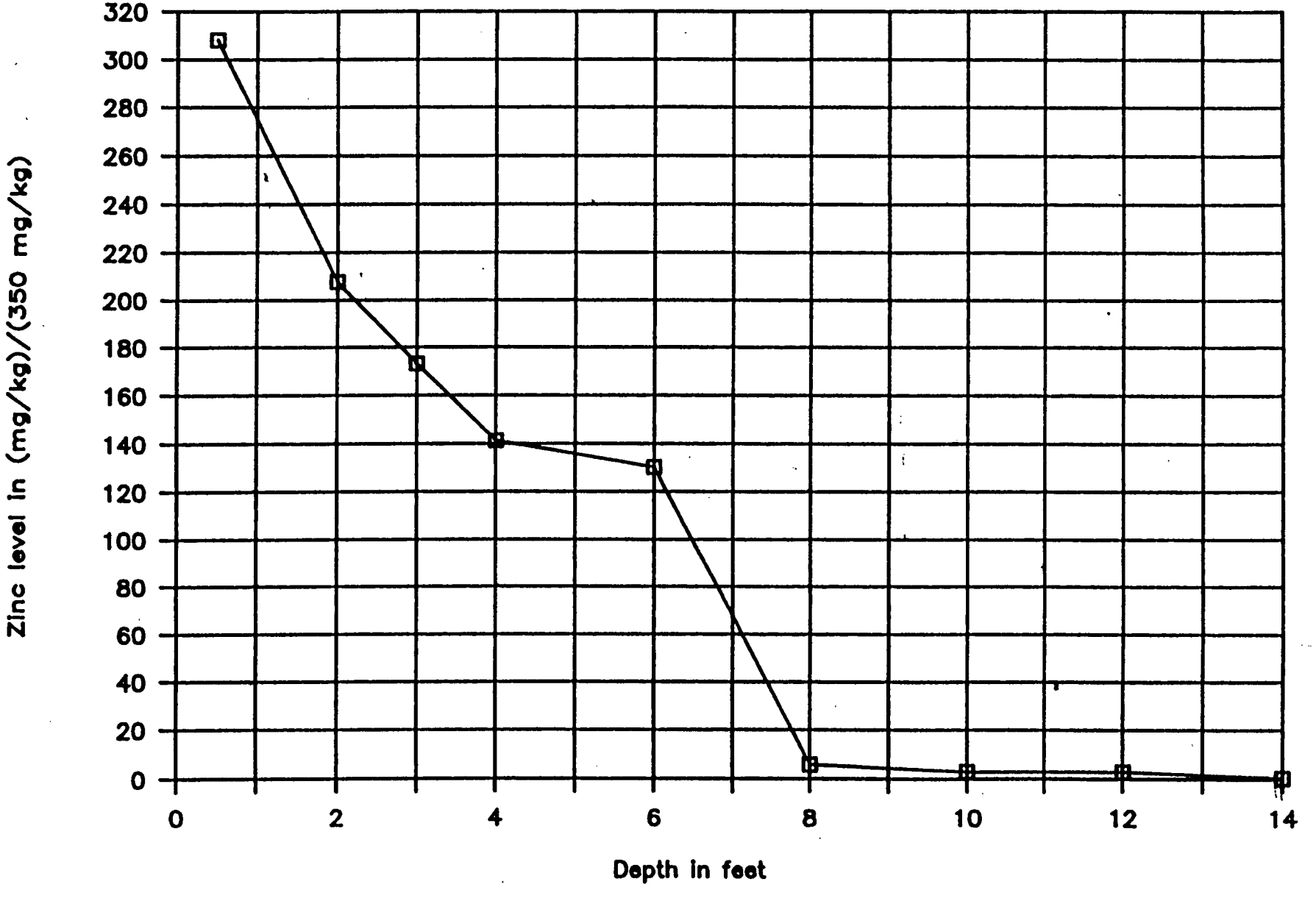
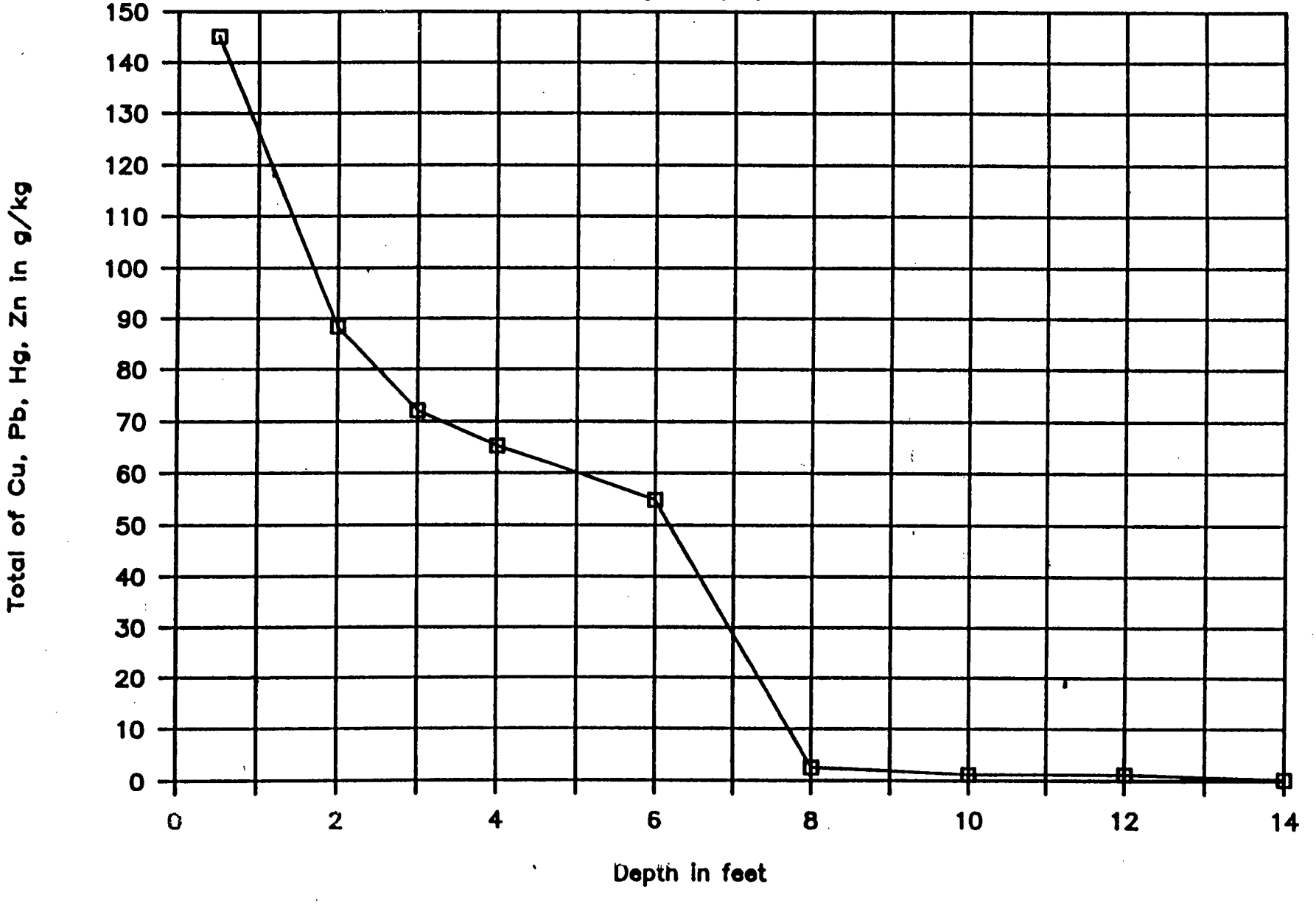
MEAN ZINC LEVELS IN SOILS

Figure II(10)



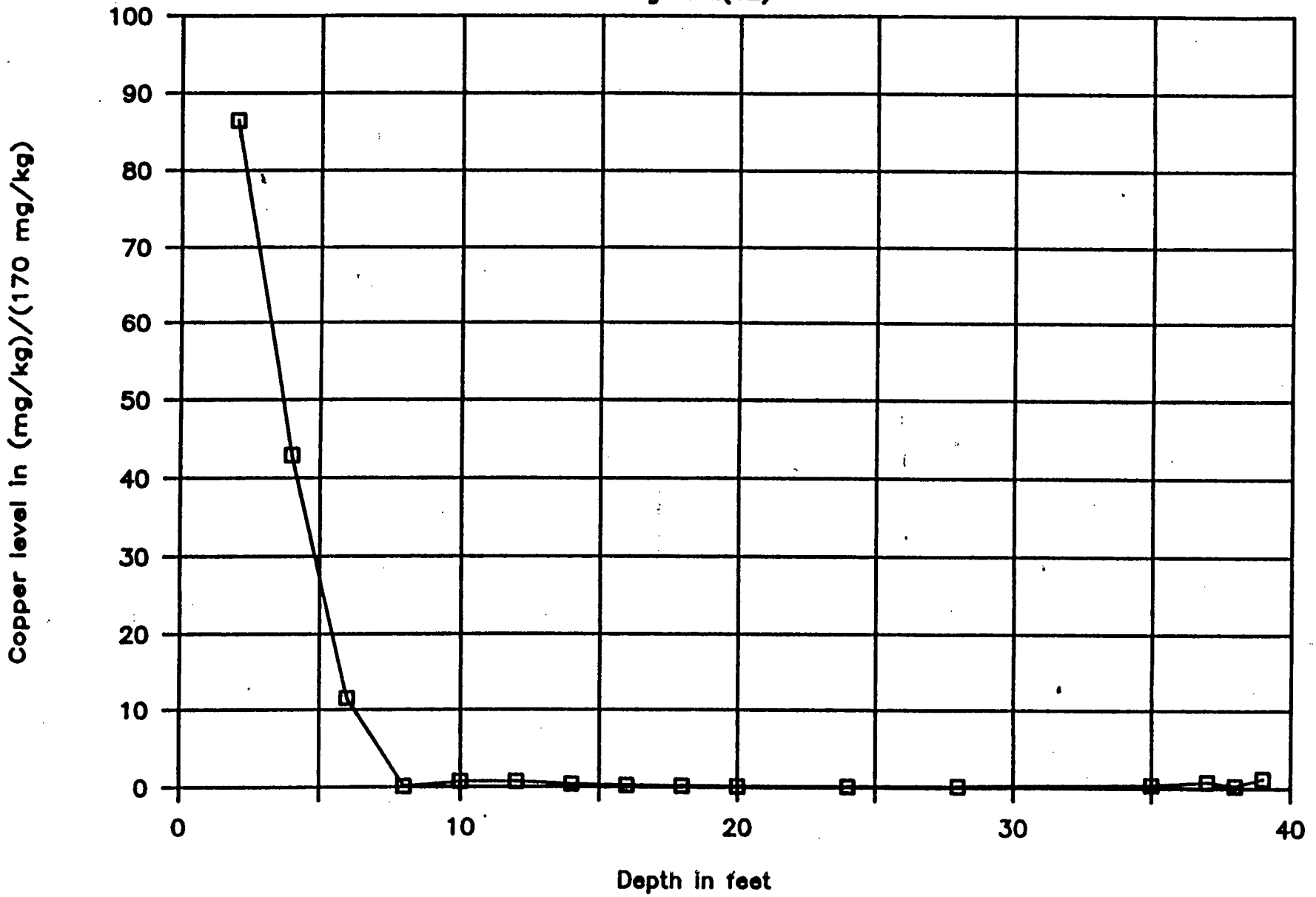
MEAN TOTAL OF CU, PB, HG, ZN IN SOILS

Figure II(11)



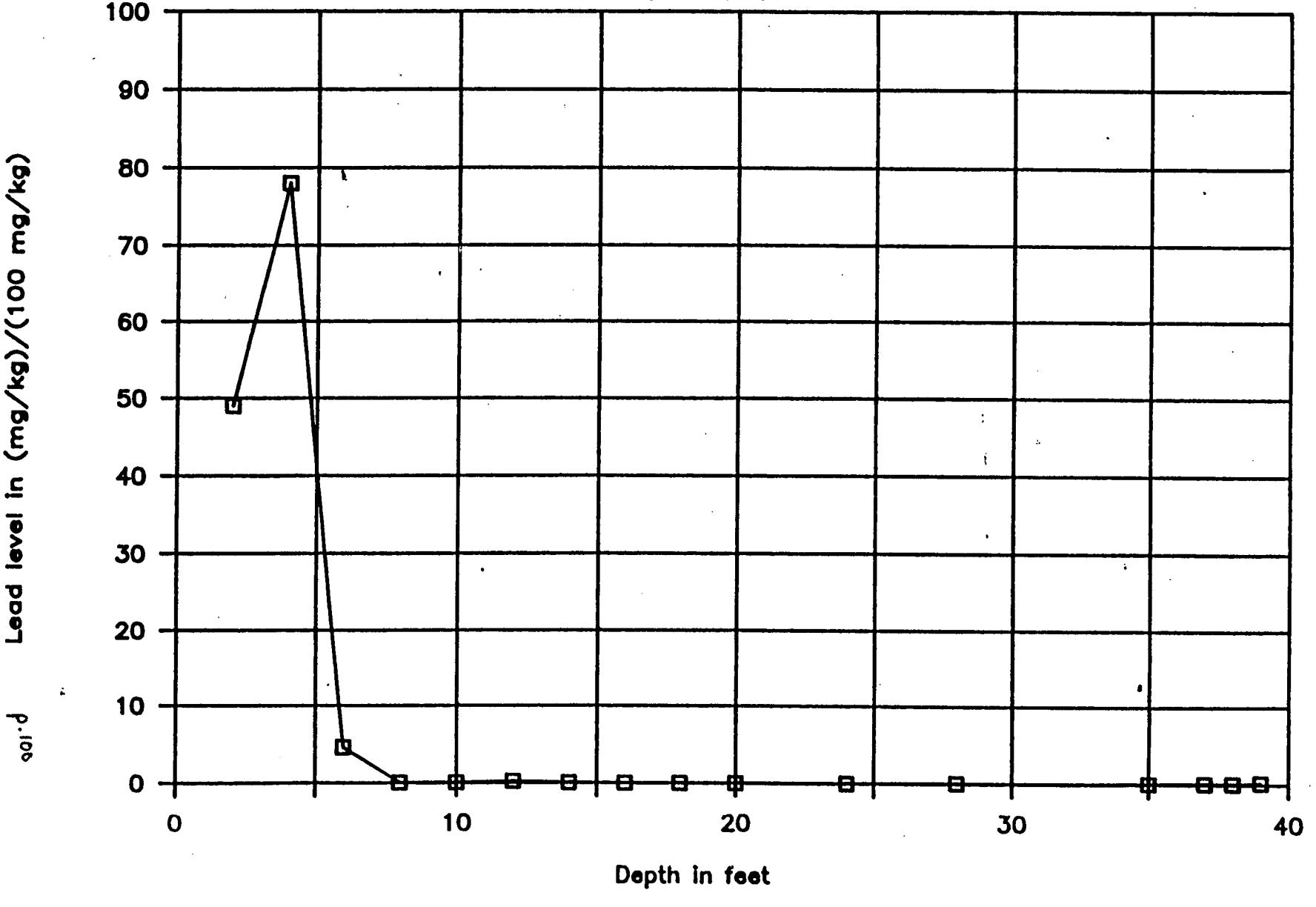
COPPER LEVELS IN DEEP WELL

Figure II(12)



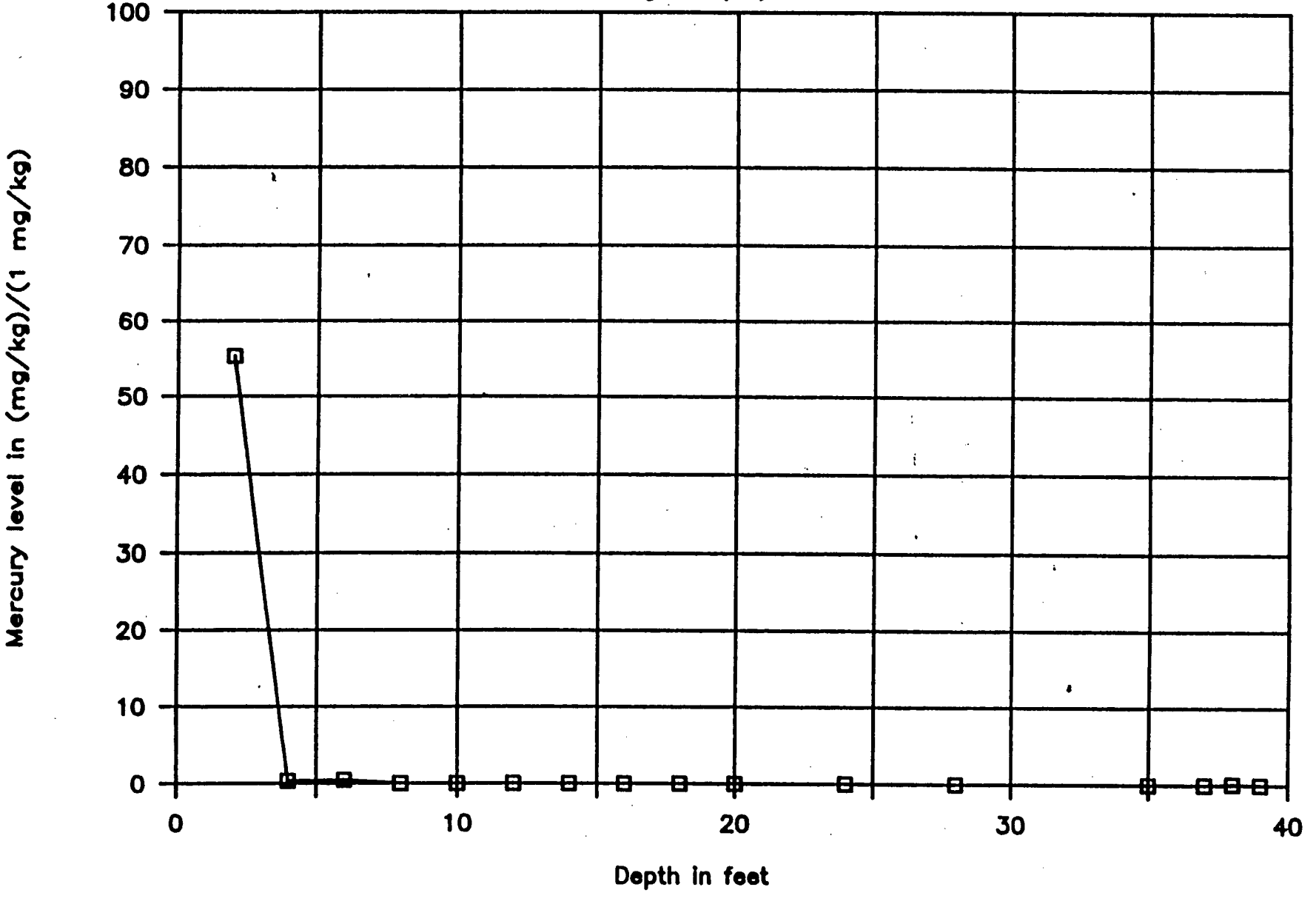
LEAD LEVELS IN DEEP WELL

Figure II(13)



MERCURY LEVELS IN DEEP WELL

Figure II(14)



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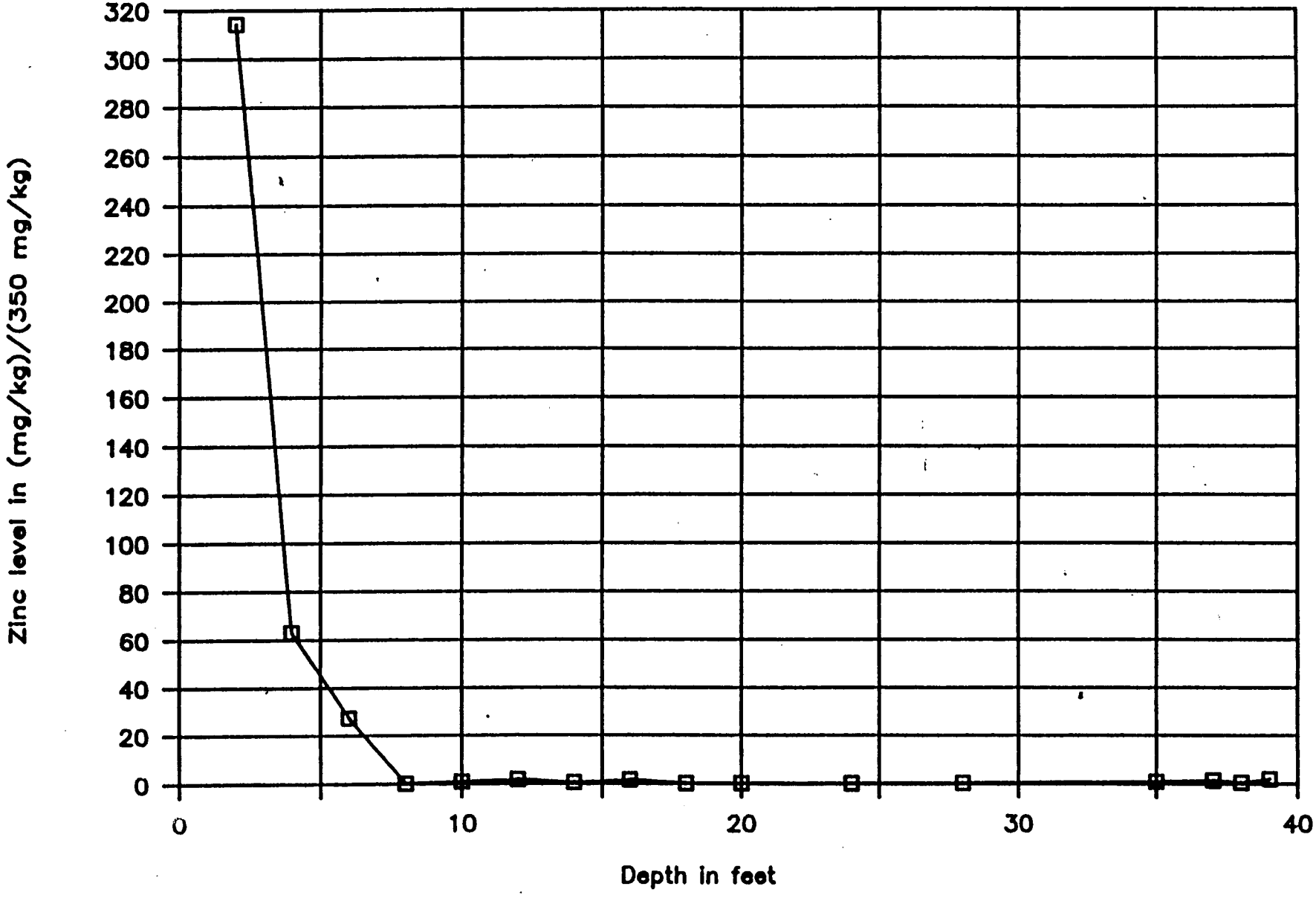
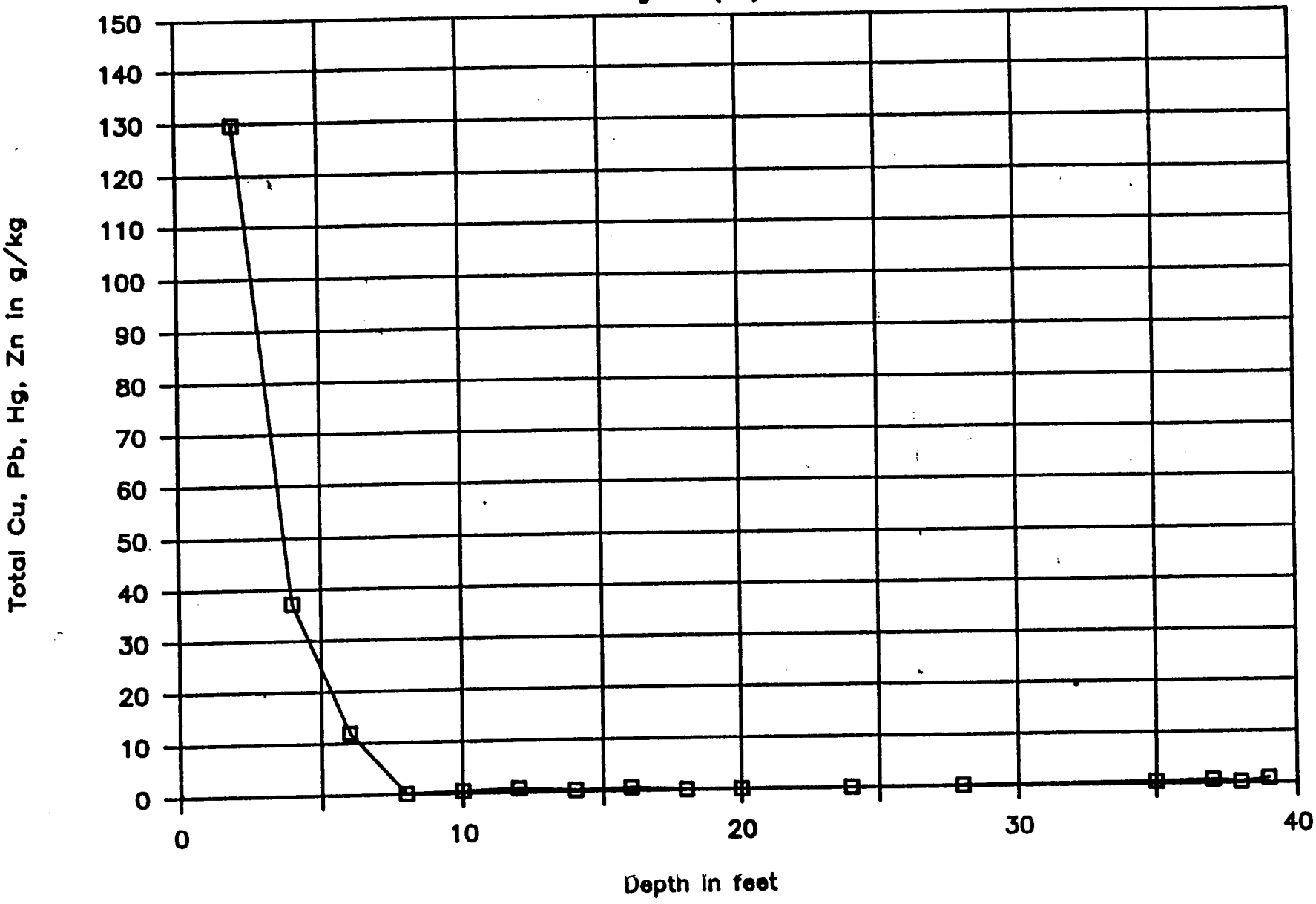
ZINC LEVELS IN DEEP WELL

Figure II(15)



TOTAL CU, PB, HG, ZN IN DEEP WELL

Figure II(16)



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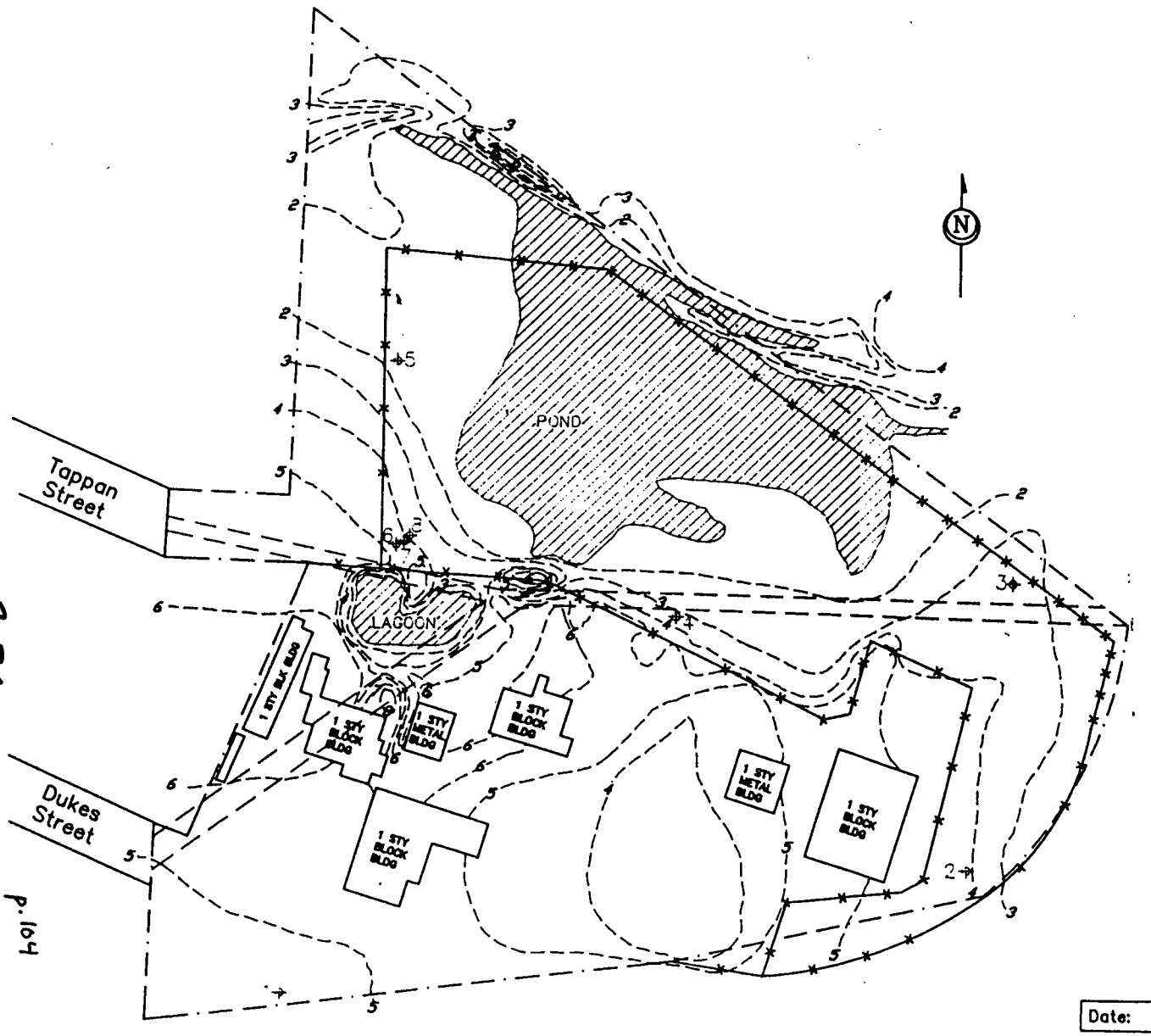

Key

- Property Boundary
- Easement
- Chainlink Fence
- Elevation Contours
- Monitoring Well/Soil Boring
- Surface Water

0 200
Scale feet

FIGURE II(17)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

GENERAL SITE PLAN (1 FOOT CONTOURS)

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

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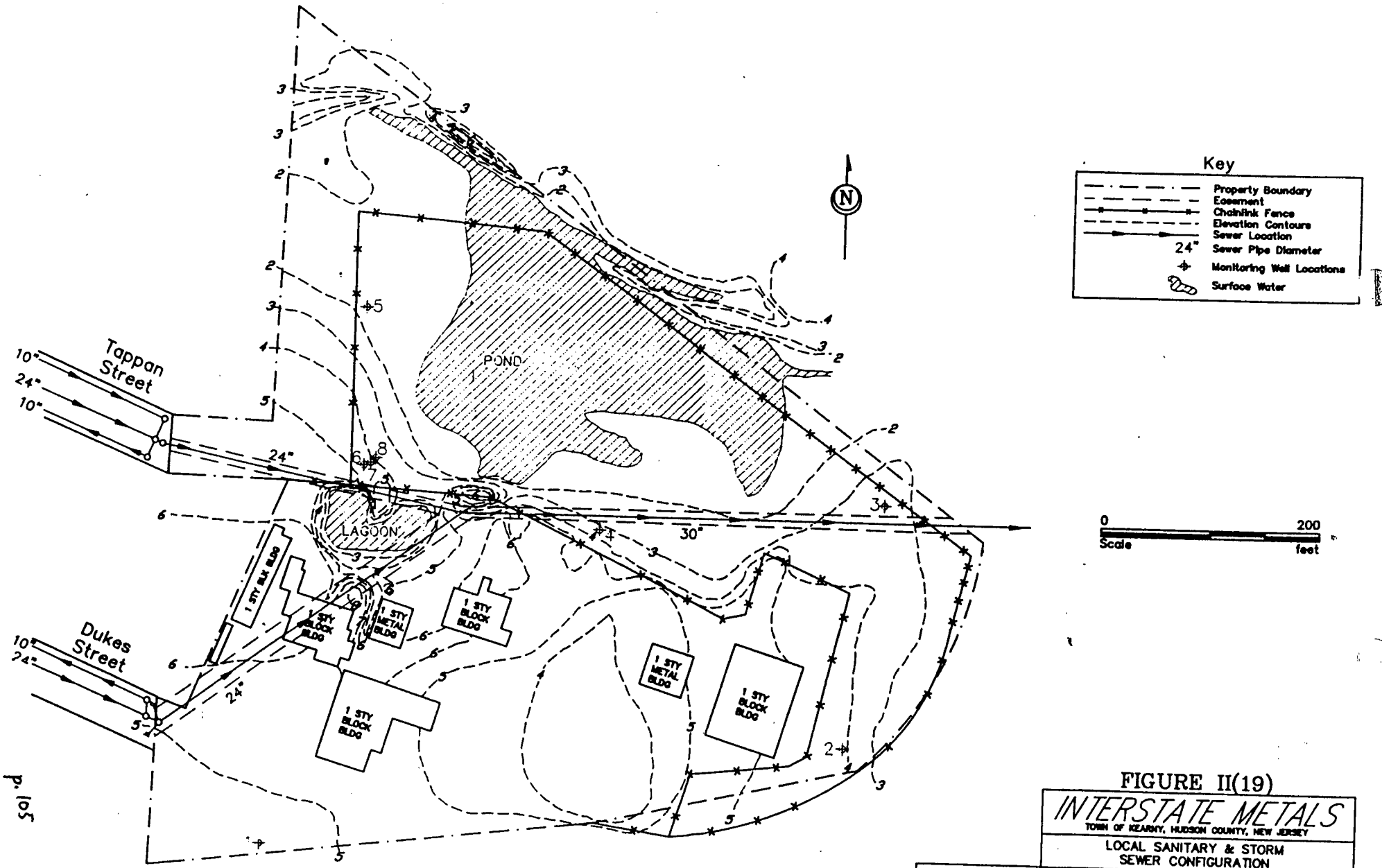

FIGURE II(19)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

LOCAL SANITARY & STORM SEWER CONFIGURATION

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

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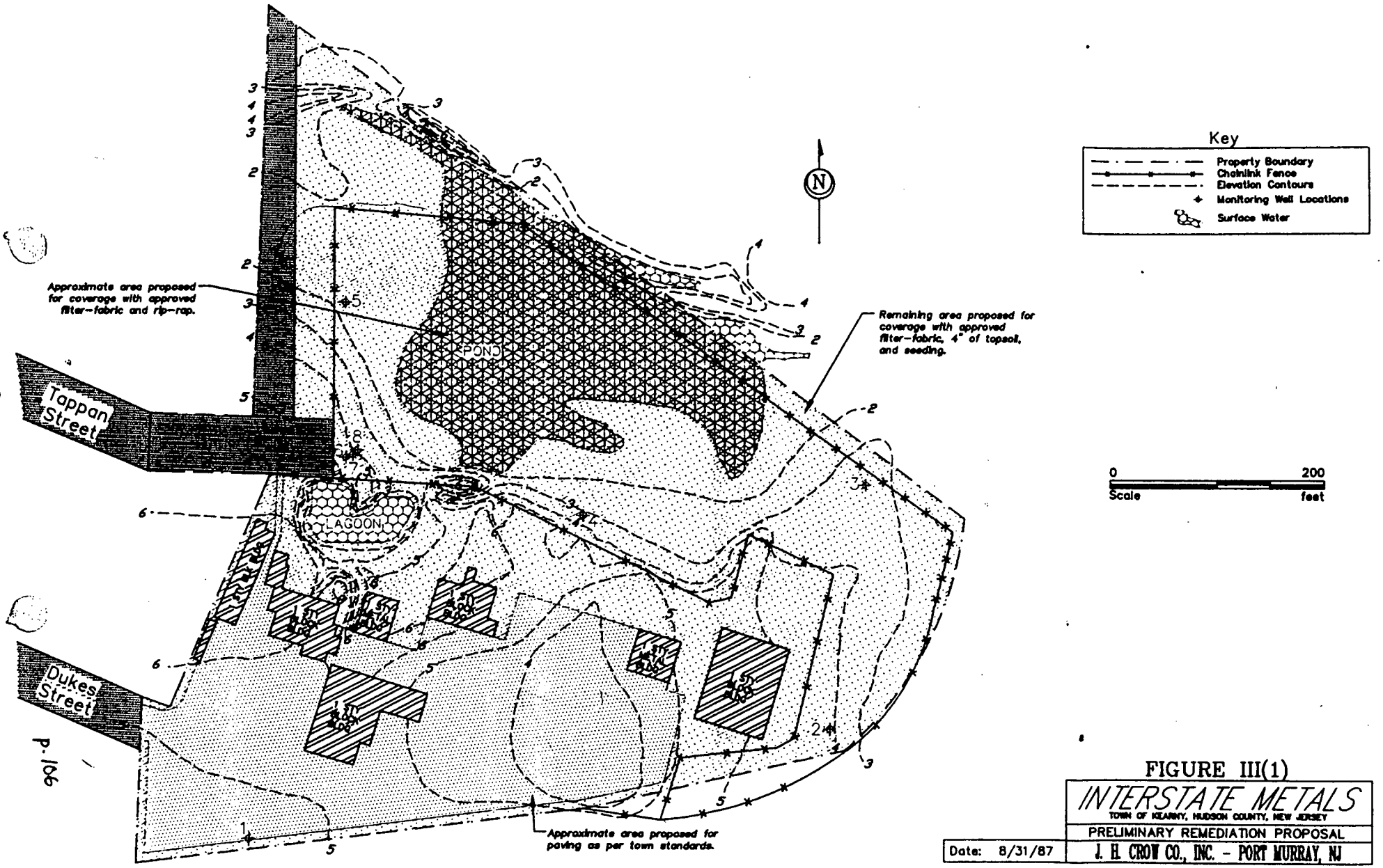

FIGURE III(1)

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INTERSTATE METALS SEPARATING CORP.

Working Document for

Environmental Report -- Addendum A

March 15, 1988

J. H. CROW COMPANY, INC.

365B HOFFMAN ROAD
PORT MURRAY, NEW JERSEY 07865
(201) 689-0332

INTERSTATE METALS SEPARATING CORP.

Working Document for

Environmental Report -- Addendum A

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INTERSTATE METALS SEPARATING CORP.

Environmental Report -- Addendum A

I. MIGRATION OF METALS IN THE SUBSURFACE

A. FINDINGS

1. Surface Water

There are three perennial bodies of surface water on the Interstate site, the pond, the lagoon, and a small pond beside and in back of the building which is labeled "NOT IN USE" in Figure I(2). (This pond was not included on the topographic map of the site prepared for us by the surveyors.) The area of this small pond was excavated during the years of the copper recovery operation (1969 to 1976). This operation is described in our report of September 2, 1987, on page 5. During and after storms, water would collect in the area where trucks would move materials in and out of the building. To keep the trucks from becoming mired in mud, Interstate pumped water from the roadway to this excavated area. Since that time this small pond, which has no inlet or outlet, has collected stormwater runoff. It is continually wet because it is cut into the water table.

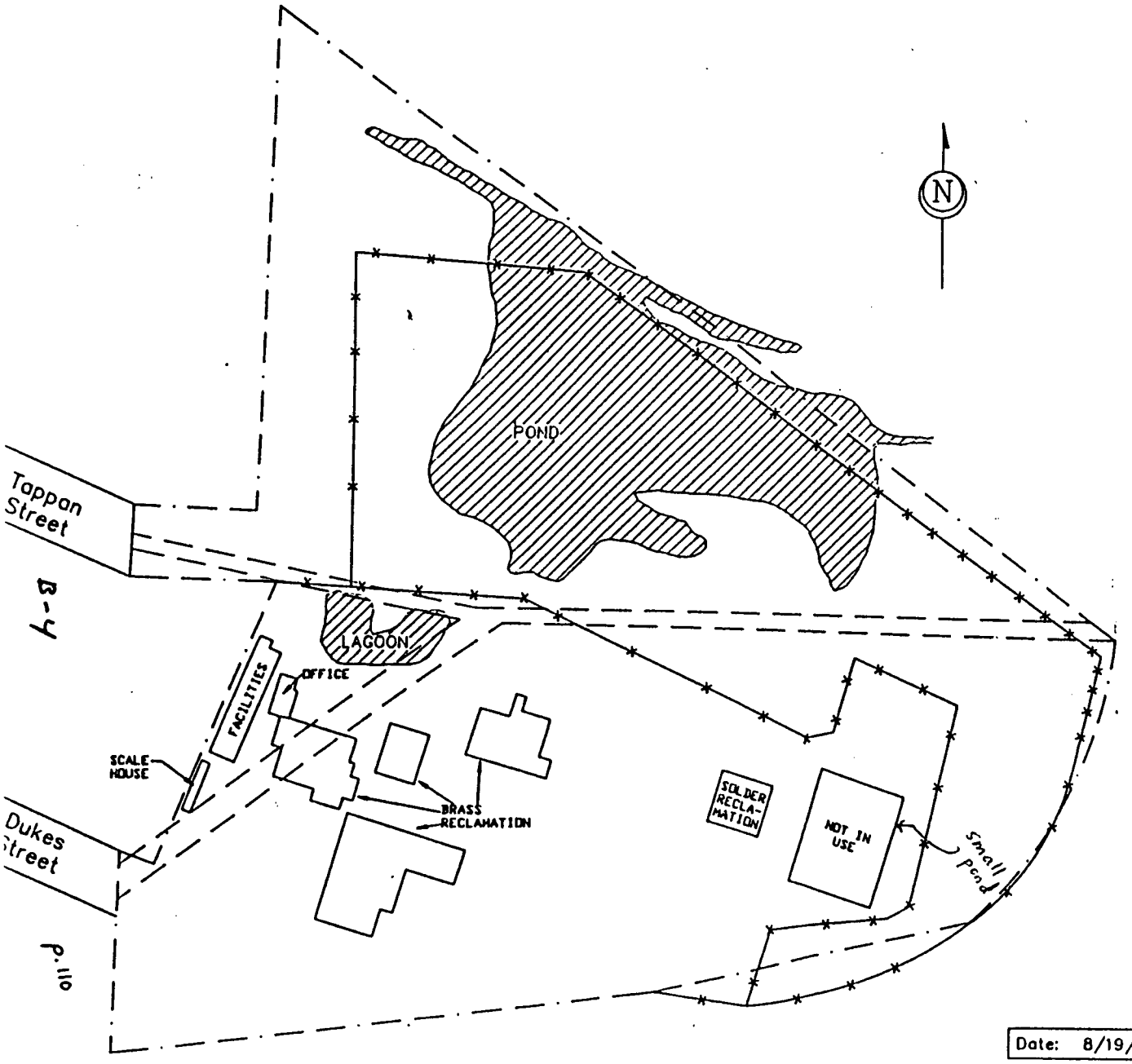
Visual observation of the small pond, the big pond, and the lagoon simultaneously gave the impression that the surface of each body of water has a slightly different elevation.

2. Ground Water Levels

On December 28, 1987 the water levels in the monitoring wells were measured again. These readings and those from all previous readings are reported in Table A-1.

3. Water Supply Well

The water supply well on the Interstate site was drilled in the mid-forties. It is said to be 603 feet deep. The position of the screening is unknown. The present pump runs at 200 gallons per minute. In recent years water has been pumped from the well for only two uses, to prime the pump that circulates the brass reclamation process water from the lagoon through the process and back to the lagoon, and to make up circulating water losses due to evaporation. In order to prime the circulating pump the water



Key

- Property Boundary
- Easement
- Chainlink Fence
- Surface Water

0 — 200
Scale — feet

FIGURE I(2)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

SITE PLAN WITH CURRENT OPERATIONS

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

B-4

p. 110

GROUNDWATER LEVEL MEASUREMENTS IN FEET

WELL	TOP OF CASING ELEVATION	TOP OF CASING TO GROUND	GROUND ELEVATION
MW1	7.19	2.00	5.19
MW2	6.85	2.40	4.45
MW3	6.18	2.80	3.38
MW4	7.54	3.60	3.94
MW5	5.89	3.70	2.19
MW6	6.42	2.42	4.00
MW7	6.14	2.29	3.85
MW8	5.98	2.00	3.98

WELL	DATE	TIME	TOP OF CASING TO WATER	WATER ELEVATION
MW1	05-Feb-87	9:45	6.30	0.89
MW2	05-Feb-87	11:50	4.95	1.90
MW3	05-Feb-87	12:37	4.55	1.63
MW4	05-Feb-87	13:23	6.05	1.49
MW5	05-Feb-87	14:03	5.05	0.84
MW1	04-Mar-87	7:55	5.95	1.24
MW2	04-Mar-87	8:07	4.70	2.15
MW3	04-Mar-87	8:09	4.35	1.83
MW4	04-Mar-87	8:12	5.65	1.89
MW5	04-Mar-87	8:15	5.03	0.86
MW1	09-Mar-87	8:10	5.97	1.22
MW2	09-Mar-87	8:22	4.62	2.23
MW3	09-Mar-87	8:25	4.28	1.90
MW4	09-Mar-87	8:30	5.64	1.90
MW5	09-Mar-87	8:32	4.98	0.91
MW6	09-Mar-87	8:36	5.86	0.56
MW7	09-Mar-87	8:39	5.10	1.04
MW8	09-Mar-87	8:40	4.75	1.23

GROUNDWATER LEVEL MEASUREMENTS IN FEET

WELL	TOP OF CASING ELEVATION	TOP OF CASING TO GROUND	GROUND ELEVATION
MW1	7.19	2.00	5.19
MW2	6.85	2.40	4.45
MW3	6.18	2.80	3.38
MW4	7.54	3.60	3.94
MW5	5.89	3.70	2.19
MW6	6.42	2.42	4.00
MW7	6.14	2.29	3.85
MW8	5.98	2.00	3.98

WELL	DATE	TIME	TOP OF CASING TO WATER	WATER ELEVATION
MW1	17-Mar-87	8:45	6.50	0.69
MW2	17-Mar-87	12:56	4.92	1.93
MW3	17-Mar-87	12:53	4.55	1.63
MW4	17-Mar-87	12:49	5.94	1.60
MW5	17-Mar-87	12:45	5.32	0.57
MW6	17-Mar-87	8:50	6.33	0.09
MW7	17-Mar-87	8:50	5.55	0.59
MW8	17-Mar-87	8:51	5.20	0.78
MW1	03-Aug-87	8:50	7.88	-0.68
MW2	03-Aug-87	8:53	5.58	1.27
MW3	03-Aug-87	8:55	5.09	1.09
MW4	03-Aug-87	8:56	6.52	1.02
MW5	03-Aug-87	9:00	5.83	0.06
MW6	03-Aug-87	9:04	7.25	-0.83
MW7	03-Aug-87	9:06	6.38	-0.24
MW8	03-Aug-87	9:15	5.87	0.11

GROUNDWATER LEVEL MEASUREMENTS IN FEET

WELL	TOP OF CASING ELEVATION	TOP OF CASING TO GROUND	GROUND ELEVATION
MW1	7.19	2.00	5.19
MW2	6.85	2.40	4.45
MW3	6.18	2.80	3.38
MW4	7.54	3.60	3.94
MW5	5.89	3.70	2.19
MW6	6.42	2.42	4.00
MW7	6.14	2.29	3.85
MW8	5.98	2.00	3.98

WELL	DATE	TIME	TOP OF CASING TO WATER	WATER ELEVATION
MW1	21-Aug-87	8:51	8.31	-1.12
MW2	21-Aug-87	8:47	5.67	1.18
MW3	21-Aug-87	8:45	5.23	0.95
MW4	21-Aug-87	8:35	6.58	0.96
MW5	21-Aug-87	8:23	6.02	-0.13
MW6	21-Aug-87	8:30	7.69	-1.27
MW7	21-Aug-87	8:29	6.71	-0.57
MW8	21-Aug-87	8:25	6.27	-0.29
MW1	28-Dec-87	9:30	7.72	-0.53
MW2	28-Dec-87	9:55	5.11	1.74
MW3	28-Dec-87	10:20	4.88	1.30
MW4	28-Dec-87	10:41	5.96	1.58
MW5	28-Dec-87	10:57	5.73	0.16
MW6	28-Dec-87	11:50	7.11	-0.69
MW7	28-Dec-87	11:33	6.31	-0.17
MW8	28-Dec-87	11:21	5.81	0.17

supply well pump is run for about 15 minutes each day the plant is in operation. Thus for each operating day about 3,000 gallons per day are used. Including non-operating days this usage averages about 2,000 gallons per day. To make up water lost by evaporation during the hot days of the summer the pump is also run for about an hour three times per week. This is about 5,100 gallons per day. If the hot weather lasts eight weeks, then the average usage of water for make-up is about 800 gallons per day. The total average usage is 2,800 gallons per day.

The Water Supply Management Act rules (N.J.A.C. 7:19-1.4) state:

> These rules apply to all persons ... diverting more than 100,000 gallons of water per day ...

Interstate Metals Separating Corp. is diverting far less than 100,000 gallons per day; it is not, therefore, required to have a Water Supply Allocation Permit.

4. Lithology of Subsurface

During the investigation of the subsurface, records were kept of the lithology and other characteristics of the unconsolidated sediments excavated while boring for soil samples and for installation of the monitoring wells. These records are summarized in Table A-2. The type of materials found, their texture, and dominant colors are reported at depth intervals of two feet. The odor of material is also noted. A "soil" or "musty" odor indicates that there was biological activity in the material. The presence of a "sulfide" odor probably shows the presence of organic material with microbial activity under anaerobic conditions. Material with no odor probably had little microbial activity. This could be caused by the toxicity of the metals in the sediments. We estimated a probable range of hydraulic conductivity (K), i.e. permeability, for each material. This estimate of K is given in meters per day. We based these estimates on our notes and our recollection of the texture and sorting of the materials, and upon Figure 5.14 on page 75 of Groundwater and Wells, Second Edition (1986) by Fletcher G. Driscoll, which is entitled Typical K values for consolidated and unconsolidated aquifers. The elevation of the bottom of material described is given in feet above mean sea level (MSL). Most of the elevations are negative, which shows that they are below sea level. The location of each boring is shown on Figure II(1).

LOCATION:		A	B	C	D	E
DATE:		03-Sep-86	03-Sep-86	03-Sep-86	03-Sep-86	03-Sep-86
DEPTH (feet)						
2	Materials	Fill, silt/sand/clay	Fill and sand	Fill	Fill & sand	Fill, sand, salt
	Texture	Loam	Fine silty sand	Silt	Fine clayey sandy silt	Fine loamy sand
	K (m/day)	10 - 1	1 - 0.1	1 - 0.1	1 - 0.1	1 - 0.1
	Color	Pale brown	Dark gray/brown to gray	Black, dark gray	Dark gray to gray brown	Gray brown to light gray
	Odor	Soil	None	None	None	None
	Ft. above MSL	-0.25	-0.40	-0.20	-0.20	1.25
4	Materials	Fill & clay	Decomposed organic matter	Fill & organic matter	Fill	Fill, aggregated fines
	Texture	Clayey loam	Organic peat, fibrous	Fibrous, various sizes	Silty clay with cobbles	Fines & coarse particles
	K (m/day)	1 - 0.01	10 - 0.1	1 - 0.1	10 - 0.1	10 - 0.1
	Color	Very dark brown to black	Black	Dark gray	Dark brownish gray	Light gray
	Odor	None	None	None		None
	Ft. above MSL	-2.25	-2.40	-2.20	-2.20	-0.75
6	Materials	Sand with mottles	Organic matter & sand	Clay/silt/sand	Decomposed organic matter	Organic matter and clay
	Texture	Fine silty sand	Fine sand	Sandy silty clay	Fibrous organic peat	Fibrous peat & clay
	K (m/day)	1 - 0.1	10 - 0.1	1 - 0.01	10 - 0.1	1 - 0.01
	Color	Light gray with red	Dark olive gray	Medium brown	Black	Black & dark red brown
	Odor	None	None	None	None	None
	Ft. above MSL	-4.25	-4.40	-4.20	-4.20	-2.75
8	Materials	Sand	Sand	Clay/silt	Sand	Clay/silt/sand
	Texture	Fine silty sand	Silty sand	Silty clay	Sand	Fine clayey sandy silt
	K (m/day)	1 - 0.1	10 - 0.1	0.1 - 0.001	10,000 - 1	1 - 0.1
	Color	Dark olive brown/gray	Dark olive gray	Dark olive brown	Light gray	Light gray/greenish gray
	Odor	None	None	None	Sulfide	None
	Ft. above MSL	-6.25	-6.40	-6.20	-6.20	-4.75
10	Materials					
	Texture					
	K (m/day)					
	Color					
	Odor					
	Ft. above MSL					
12	Materials					
	Texture					
	K (m/day)					
	Color					
	Odor					
	Ft. above MSL					

LOCATION:		F	G	H	I	J
DATE:		03-Sep-86	03-Sep-86	03-Sep-86	29-Jan-87	29-Jan-87
DEPTH (feet)						
2	Materials	Assorted fill	Fine grained fill	Fine grained fill	Assorted fill	Assorted fill
	Texture	Sandy clayey silt	Silt	Silt & silty clay	Silt, sand & gravel	Silt, sand & gravel
	K (m/day)	10 -0.1	1 - 0.1	1 - 0.1	10 - 0.1	10 - 0.1
	Color	Dark gray to olive brown	Dark brownish gray	Dark gray to dark brown	Variegated colors	Yellowish brown, pink
	Odor	None	None	None	None	None
	Ft. above MSL	1.00	0.95	1.85	1.95	1.75
4	Materials	Assorted fill	Silt & clay	Fine grained fill	Assorted fill	Assorted fill with wood
	Texture	Silt with sand & clay	Silty clay	Silty clay	Silt, sand & gravel	Silt, sand & gravel
	K (m/day)	10 -0.1	1 - 0.1	1 - 0.1	10 - 0.1	10 - 0.1
	Color	Black	Dark gray	Pale & dark gray	Variegated colors	Black
	Odor	Sulfide	Sulfide	None	None	None
	Ft. above MSL	-1.00	-1.05	-0.15	-0.05	-0.25
6	Materials		Sand & clay	Organic matter, clay	Assorted fill	Assorted fill
	Texture		Clayey sand	Muck, silt, clay	Silt, sand & gravel	Silt, sand & gravel
	K (m/day)		1 - 0.1	1 - 0.1	10 - 0.1	10 - 0.1
	Color		Dark gray & dark brown	Black, red & brown clay	Variegated colors	Black
	Odor		Sulfide	Sulfide	None	None
	Ft. above MSL		-3.05	-2.15	-2.05	-2.25
8	Materials		Sand	Sand, silt	Assorted fill & sand/silt	Clay, silt, sand
	Texture		Sand	Silty sand	Silty sand & gravel	Sandy clayey silt
	K (m/day)		1,000 - 1	10 - 0.1	10 - 0.1	1 - 0.1
	Color		Dark brown	Dark grayish brown	Variegated colors	Very dark brown
	Odor		None	None	None	None
	Ft. above MSL		-5.05	-4.15	-4.05	-4.25
10	Materials				Sand, silt	Sand, silt
	Texture				Silty sand	Silty sand
	K (m/day)				10 - 0.1	10 - 0.1
	Color				Very dusky red	Dark grayish brown
	Odor				None	None
	Ft. above MSL				-6.05	-6.25
12	Materials					
	Texture					
	K (m/day)					
	Color					
	Odor					
	Ft. above MSL					

LOCATION:	MW-1	MW-2	MW-3	MW-4	MW-5
DATE:	21-Jan-87	22-Jan-87	28-Jan-87	28-Jan-87	28-Jan-87
DEPTH (feet)					
2 Materials	Fill, organic matter	Assorted fill	Assorted fill	Assorted fill	Assorted fill
Texture	Clay, silt, coarse sand	Silt, sand & gravel	Sandy clayey silt	Flakes, silt & sand	Silt, sand & gravel
K (m/day)	1 - 0.1	10 - 0.1	1 - 0.1	1 - 0.01	10 - 0.1
Color	Black, dark gray	Black	Dark gray & grayish brown	Brownish gray	Very dark gray, dusky red
Odor	None	None	None	None	None
Ft. above MSL	3.19	2.45	1.38	1.94	0.19
4 Materials	Assorted fill & ash	Assorted fill	Fill & organic matter	Assorted fill/paper/metal	Assorted fill & cinders
Texture	Clay, silt, sand & gravel	Fine silty sand	Silt/sand/clay muck	Fines, silty clay	Silty sand and slag
K (m/day)	1 - 0.1	10 - 0.1	1 - 0.01	1 - 0.01	10 - 0.1
Color	Black, dark gray	Dark gray	Dark brownish gray	Dark brownish gray	Black to dark gray
Odor	None	None	None	None	None
Ft. above MSL	1.19	0.45	-0.62	-0.06	-1.81
6 Materials	Decomposed organic matter	Fill (Al foil) & muck	Fill & organic matter	Decomposed organic matter	Assorted fill
Texture	Fibrous peaty muck	Flakes/silt/sand/gravel	Silt/sand/clay muck	Peaty clayey silt, fibers	Silty sand, some gravel
K (m/day)	1 - 0.01	1 - 0.1	1 - 0.01	1 - 0.1	10 - 0.1
Color	Black	Black to dark gray	Gray/black	Black	Dark brown
Odor	None	None	None	Sulfide	None
Ft. above MSL	-0.81	-1.55	-2.62	-2.06	-3.81
8 Materials	Sand, silt, gravel	Fill (Al foil) & muck	Sand, silt	Clay, silt, sand	Sand
Texture	Fine silty sand & gravel	Flakes, silt, sand	Fine sand to silty sand	Fine silty sand with clay	Fine silty sand
K (m/day)	10 - 0.1	1 - 0.01	1 - 0.1	1 - 0.1	10 - 0.1
Color	Dark brown	Black	Dark gray	Dark brownish gray	Dark brown
Odor	None	None	None	Sulfide	None
Ft. above MSL	-2.81	-3.55	-4.62	-4.06	-5.81
10 Materials	Sand	Sand	Sand, silt	Sand	Sand
Texture	Sand, fine to coarse	Sand, fine to medium	Silty sand to medium sand	Fine to coarse sand	Silty sand
K (m/day)	10 - 0.1	10 - 0.1	1 - 0.1	100 - 1	100 - 0.1
Color	Dark brown	Dark gray	Gray, variegated colors	Very dark grayish brown	Dark brown
Odor	None	Slight	None	Sulfide	None
Ft. above MSL	-4.81	-5.55	-6.62	-6.06	-7.81
12 Materials	Sand	Sand	Sand	Sand	Sand, gravel, cobbles
Texture	Sand, medium to coarse	Fine sand	Medium to fine sand	Fine to medium sand	Silty sand, gravel/cobble
K (m/day)	100 - 1	10 - 0.1	100 - 1	10 - 0.1	100 - 1
Color	Variegated colors	Dark gray	Brownish gray	Dark grayish brown	Black to dark gray
Odor	None	Sulfide	None	None	None
Ft. above MSL	-6.81	-7.55	-8.62	-8.06	-9.81

LOCATION: MW-6
DATE: 28-Jan-87

DEPTH (feet)		
2	Materials	Assorted fill
	Texture	Silt, sand & gravel
	K (m/day)	10 - 0.1
	Color	Dark olive gray
	Odor	None
	Ft. above MSL	2.00
4	Materials	Assorted fill
	Texture	Sandy silt
	K (m/day)	1 - 0.1
	Color	Dark olive gray
	Odor	None
	Ft. above MSL	0.00
6	Materials	Organic matter & silt
	Texture	Sandy clayey silt
	K (m/day)	10 - 0.1
	Color	Dark gray to black
	Odor	Musty
	Ft. above MSL	-2.00
8	Materials	Sand
	Texture	Medium sand
	K (m/day)	100 - 10
	Color	Grayish brown
	Odor	Sulfide
	Ft. above MSL	-4.00
10	Materials	Sand & gravel
	Texture	Coarse sand with gravel
	K (m/day)	1,000 - 10
	Color	Olive brown
	Odor	None
	Ft. above MSL	-6.00
12	Materials	Sand
	Texture	Coarse sand
	K (m/day)	100 - 10
	Color	Brownish gray
	Odor	None
	Ft. above MSL	-8.00

MW-6
28-Jan-87

DEPTH (feet)		
14	Sand & gravel	
	Coarse sand & gravel	
	1,000 - 10	
	Red to grayish brown	
	None	
		-10
16	Sand, silt, clay	
	Silty clayey sand	
	10 - 0.1	
	Gray to grayish brown	
	None	
		-12
18	Clay, silt, sand	
	Clayey sandy silt	
	1 - 0.1	
	Grayish brown	
	None	
		-14
20	Sand	
	Fine sand	
	100 - 1	
	Gray	
	None	
		-16
24	Silt, sand	
	Fine silty sand	
	10 - 1	
	Gray to reddish brown	
	None	
		-20
28	Silt, sand	
	Fine silty sand	
	10 - 1	
	Gray to reddish brown	
	None	
		-24

MW-6
28-Jan-87

DEPTH (feet)		
35	Silt, sand	
	Fine silty sand	
	10 - 1	
	Grayish brown	
	None	
		-27
37	Silt, sand	
	Fine silty sand	
	10 - 1	
	Brown	
	None	
		-33
39	Silt, sand	
	Fine silty sand	
	10 - 1	
	Brown	
	None	
		-35

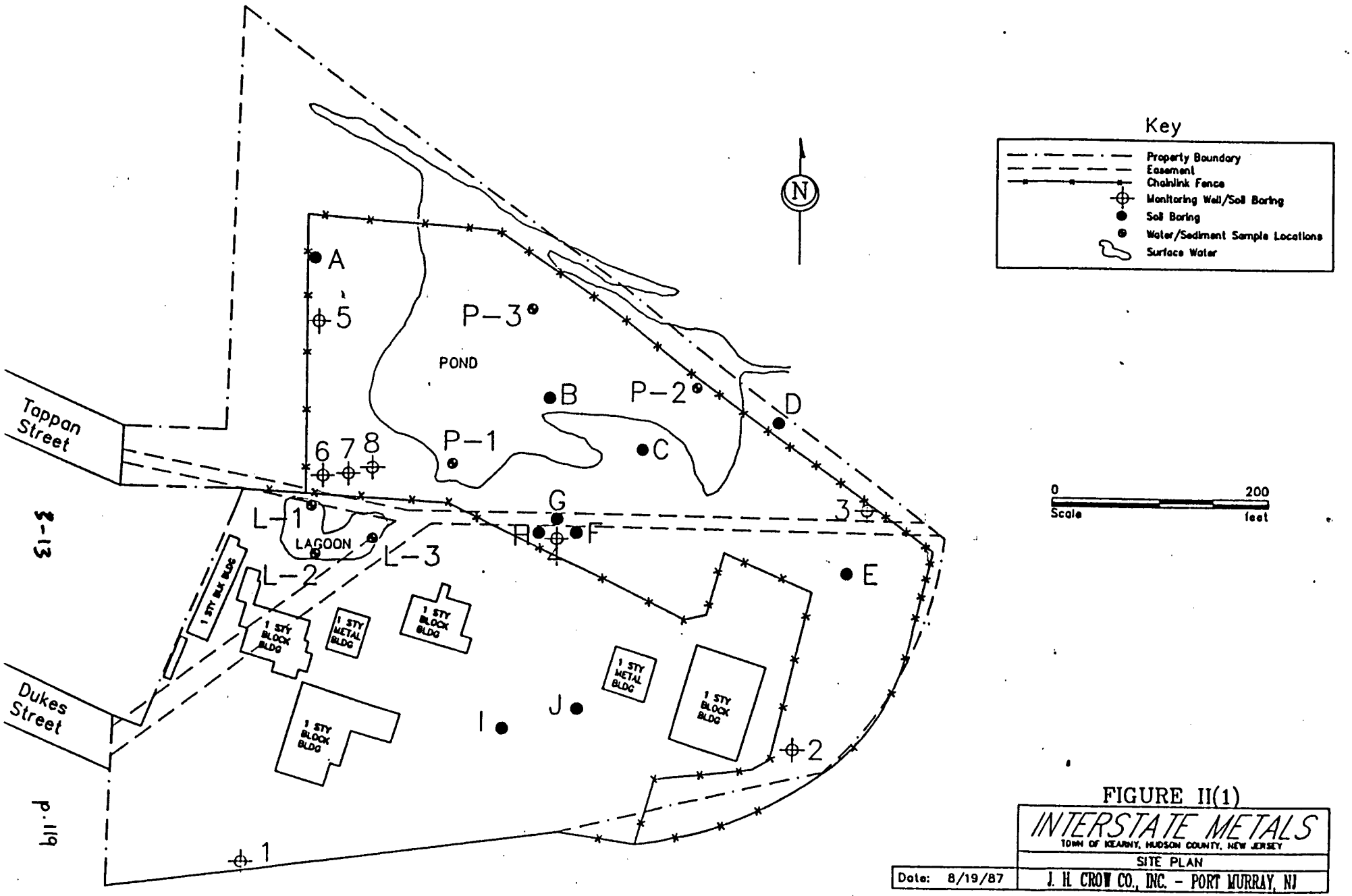


FIGURE II(1)

INTERSTATE METALS
TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY

SITE PLAN

Date: 8/19/87

J. H. CROW CO., INC. - PORT MURRAY, NJ

5. Construction of Monitoring Wells

The monitoring wells on the Interstate site were built according to NJDEP specifications. They were drilled using a rotary mud technique. The casings are 4-inch diameter polyvinyl chloride (PVC) pipe. Monitoring wells MW-1 and MW-2 were drilled to fourteen feet deep. They have 10 feet of scored PVC pipe screening, from 4 to 14 feet. Monitoring well MW-3 is screened from 2.5 feet to 12.5 feet. MW-4, MW-5, and MW-8 have a depth of 12 feet with 10 feet of screening from 2 feet to 12 feet. Monitoring well MW-7 is screened between 15 and 25 feet, and monitoring well MW-6 from 27 to 37 feet. In each borehole surrounding the PVC pipe #2 sand was placed around the screening with some above the top of the screening. Bentonite was filled in from the top of the sand to the concrete, and concrete was placed from the surface down to the bentonite.

6. Conductivity Study

We have observed in monitoring wells elsewhere that specific conductivity can vary with depth. It occurred to us that we might detect variations in the concentration of the total of ionic species in the groundwater at various depths by measuring the specific conductivity of the water in the monitoring wells at various depths. This would give an indication of the variation in contaminant concentrations because the soluble species of metallic elements in water are ions. The data from this study are presented in Table A-3. The specific conductivities given in the table have been corrected for temperature variations.

B. INTERPRETATION OF FINDINGS

1. Lithology of Subsurface

The subsurface lithology of the site is as described on page 9 of our Environmental Report of September 2, 1987. The detailed data, from which this statement was derived, are summarized in Table A-1 of this report.

Topsoil was found only at boring A. Fill material was found at all locations sampled, including A where it is mixed with loam. A is the only location sampled where some vegetation is growing. The lack of vegetation at other locations is probably due to the phytotoxicity of the fill material. The fill material is highly variable in color, size, and shape of the particles. It is poorly sorted. This means that its permeability, or hydraulic

WELL:	MW-1			MW-2			MW-3			MW-4			MW-5		
TOC ELEVATION:	7.19			6.85			6.18			7.54			5.89		
Depth from TOC (feet)	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm
5				1.85	10.5	1.464	1.18	6.5	1.20						
6				0.85	10.8	1.472	0.18	9.2	2.17				-0.11	9.8	1.509
7				-0.15	10.9	1.476	-0.82	9.7	2.18	0.54	9.2	1.648	-1.11	10.7	1.503
8	-0.81	13.2	0.747	-1.15	11.1	1.474	-1.82	10.0	2.19	-0.46	10.1	1.652	-2.11	11.0	1.499
9	-1.81	13.5	0.742	-2.15	11.3	1.477	-2.82	10.1	2.20	-1.46	10.4	1.645	-3.11	11.2	1.501
10	-2.81	13.7	0.742	-3.15	11.5	1.478	-3.82	10.3	2.20	-2.46	10.6	1.641	-4.11	11.3	1.500
11	-3.81	13.8	0.742	-4.15	11.8	1.478	-4.82	10.4	2.20	-3.46	10.8	1.636	-5.11	11.5	1.503
12	-4.81	13.8	0.742	-5.15	12.0	1.479	-5.82	10.6	2.20	-4.46	11.0	1.638	-6.11	11.8	1.504
13	-5.81	13.9	0.743	-6.15	12.2	1.474	-6.82	10.6	2.20	-5.46	11.2	1.636	-7.11	11.9	1.503
14	-6.81	14.0	0.743	-7.15	12.3	1.473	-7.82	10.7	2.20	-6.46	11.3	1.640	-8.11	11.9	1.509
15	-7.81	14.0	0.747	-8.15	12.4	1.478	-8.82	10.6	2.20	-7.46	11.4	1.641			
16	-8.81	14.1	0.999	-9.15	12.4	1.478									
17				-10.15	12.5	1.481									
18															
20															
22															
24															
26															
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40															
n			8			13			10			9			9
Mean			0.744			1.476			2.194			1.642			1.503
Std. Dev.			0.002			0.004			0.010			0.005			0.003

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WELL:	MW-6			MW-7			MW-8		
TOC ELEVATION:	6.42			6.14			5.98		
Depth from TOC (feet)	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm	Ft. above MSL	Temp. Deg. C	Conduct. mmhos/cm
5									
6							-0.02	10.9	2.43
7				-0.86	11.6	2.42	-1.02	12.0	2.43
8	-1.58	12.4	2.53	-1.86	12.4	2.42	-2.02	12.2	2.44
9				-2.86	12.8	2.43	-3.02	12.3	2.44
10	-3.58	13.3	2.54	-3.86	13.0	2.44	-4.02	12.5	2.43
11				-4.86	13.2	2.44	-5.02	12.7	2.44
12	-5.58	13.7	2.54	-5.86	13.3	2.43	-6.02	12.7	2.44
13				-6.86	13.4	2.43	-7.02	12.8	2.44
14	-7.58	13.9	2.54	-7.86	13.6	2.43	-8.02	13.2	2.52
15				-8.86	13.8	2.43			
16	-9.58	14.1	2.54	-9.86	13.9	2.43			
17									
18	-11.58	14.4	2.53	-11.86	14.1	2.43			
20	-13.58	14.5	2.53	-13.86	14.2	2.44			
22	-15.58	14.6	2.54	-15.86	14.2	2.44			
24	-17.58	14.6	2.54	-17.86	14.4	2.74			
26	-19.58	14.6	2.53	-19.86	14.6	2.87			
27				-20.86	14.5	2.87			
28	-21.58	14.6	2.53						
30	-23.58	14.5	2.53						
32	-25.58	14.4	2.65						
34	-27.58	14.3	2.73						
36	-29.58	14.2	2.75						
38	-31.58	14.2	2.81						
39	-32.58	14.1	2.81						
40	-33.58	14.1	2.82						
n			18			13			9
Mean			2.611			2.432			2.446
Std. Dev.			0.112			0.007			0.027

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conductivity, is also highly variable. Its chemical composition is also very variable as shown by the results of the analyses for heavy metal elements in the soil samples.

At four out of the 18 boring locations no organic matter resulting from the decomposition of meadowland vegetation was found. The borings which did not contain a stratum of organic muck were A, MW-5, I, and J. A and MW-5 are located in the northwest sector of the site close to the parking area and the adjacent lot between Tappan Street and Hoyt Street. This area may have been high enough so that meadowlands never came this far west, or it may have been so disturbed by human activities that evidence of this organic layer no longer remains. Borings I and J were taken in the center of the southern portion of the site where the soil has been disturbed for over 40 years by the industrial activities on site, including heavy truck movement.

In 14 borings, from the eastern portion of the site, in the area of the pond, and in the southwest corner, decayed or decaying organic matter was found in a thin layer beneath the fill material. The thickness of the layer is from very thin to not much more than 4 feet. The upper elevation of this layer varies from less than two feet above sea level (MSL) to less than 3 feet below sea level. The lower elevation ranges from 1 foot below sea level to less than 6 feet below. Whether the organic layer is continuous in this area is not known. It is known that its permeability is highly variable. Most of it still contains identifiable parts of plants. None of it is the low permeability clay material which typifies much of the organic stratum in the region of the Hackensack meadowlands. In several borings fill material was found mixed with organic matter.

Below the organic layer at MW-6 lies at least 34 feet of fine sand or silty fine sand. The other borings indicate that similar material occurs across the site beneath the fill and organic matter. Generally these sediments are well sorted, tightly packed, and tending towards hydraulic conductivities on the low end of the sand/silt spectrum. They also tend to be darker colors, which indicates that they contain minerals with elements other than silicon, aluminum, and oxygen.

The Interstate site is close to the interface at the surface between the Brunswick Formation of the Newark Basin, in the Piedmont Physiographic Province, and the estuarine sediments of the Passaic and Hackensack Rivers. The Brunswick formation is composed primarily of shale, or sandstone at some locations. All boring samples that we have observed on this site are composed of fill, which is of recent anthropogenic origin, and estuarine sediments. At a depth with an elevation of 36 feet below mean sea level, in the boring for MW-6, heavy clay was encountered. This may or may not indicate that consolidated sediments of the Brunswick formation lie directly beneath that clay. In either

case, this indicates that the rocks of the Brunswick formation, which are at the surface not very far west of the Interstate site, are dipping sharply downward from west to east, from the location of MW-6 on the western side to MW-3 on the eastern side of the site.

2. Chemistry of Metal Contaminants

The results of chemical analyses of sediment (soil) and water samples taken from the Interstate site which have been made to date are reported in our Environmental Report, dated September 2, 1987, in Table II(1) and others. As explained on page 7 of that report, all samples were analyzed for copper, lead, zinc, and mercury. In order to predict the potential for an element or compound to migrate in the subsurface, it is essential to understand the chemistry of the substance under the environmental conditions in which it occurs. In this section an overview of the biogeochemistry of these four elements is presented. Other heavy metal elements would behave similarly.

For each of these four elements the dominant valence, or oxidation state, is +2. Copper and mercury also occur naturally as metals in the 0 oxidation state, and copper, mercury, and lead are found in nature in the +1 oxidation state. As ions in the +1 oxidation state they are known as cuprous, mercurous, and plumbous ions, respectively. The most abundant minerals of copper are sulfides. Copper sulfides frequently occur with one or more other elements such as iron or lead. Copper also occurs naturally as oxides and hydroxides. These minerals are usually highly colored or dark. The commonest minerals of lead and zinc, which frequently occur together, are their sulfides. Galena (PbS), and sphalerite (ZnS) are their most abundant minerals. Oxides of lead and zinc also occur frequently. Cadmium is frequently found in zinc ores, so we expected to find it occurring with zinc at the Interstate site. It does. However, why if cadmium is more toxic? we felt no need to analyze for cadmium extensively because cadmium behaves similarly to zinc. Mercury is in the IVb series with zinc and cadmium. Its geochemistry is in many ways analogous to that of cadmium. The most frequently occurring mineral of mercury is cinnabar, which is mercuric sulfide. Cinnabar has a distinctive color, and in some of the fill material at Interstate we found cinnabar colored flecks. Mercury can occur as its oxide, but it is probably more likely to occur as metal in the 0 oxidation state. The natural occurrence of these elements has been discussed, since these are stable forms under environmental conditions, and, therefore, are likely to be among the forms found on the Interstate site.

These four elements are toxic to all life forms at higher concentrations, if they are taken into the organism. (The remedial action proposed in our Environmental Report of September

2, 1987, is designed to protect higher organisms from coming into contact with toxic concentrations of these elements and other toxic elements on the surface or in the subsurface of the Interstate site.) However, copper and zinc are essential micro-nutrients for most organisms. This is one of the reasons that there is very little wasted material in the metal separation processes which have been used at Interstate for more than a decade to the present.

In an abiotic environment, which would be found on or beneath the Interstate site, the forms of these metallic elements have very low solubility products in water at neutral or basic pH. The lowest pH found in our studies to date was 6.88. The highest pH was 11.55. Both of these were found in soil samples. Microorganisms and plant roots can sometimes increase the solubility of metallic compounds by exuding enzymes so that they can absorb more trace nutrients into the organism. However, in most contaminated areas of this site, even if this occurs, the organism is killed by the toxicity of the material it would dissolve. Thus the contaminated areas remain abiotic, and the contaminants remain insoluble. Comparisons of the concentration of a metal in the soil with that in water in contact with the soil are discussed on page 14 of our initial report. The lowest ratio of the concentration of a metal in a sediment to that in surface water in close proximity to the sediment was ten thousand to one.

Reactions of these elements in the environment of the Interstate site are limited. The oxidation of a metallic element to oxide or hydroxide on the surface of the site, where weathering occurs, is probably common. Weathering would also cause the breakup of larger particles into smaller particles. The oxides and hydroxides tend to be small silt or clay size particles. In the subsurface organic matter there may be some microbial activity, especially where a sulfide odor was detected. There tend to be anaerobic conditions in organic material saturated with groundwater, which means reducing conditions. Copper, lead, or mercury might be reduced from the +2 to the +1 oxidation state. Reduction to the metallic state is unlikely to occur. However, in such a zone the reduction of sulfate to sulfide is common. Since the sulfides are usually less soluble than the hydroxides and oxides, the metallic sulfides frequently precipitate out of solution in such a zone. The reaction is as follows:

$$MeO + H_2S = MeS + H_2O$$

3. Chemistry of Sediments on Site

The fill sediments have high concentrations of metal bearing compounds as well as silica and aluminum silicates. Associated with the metal elements are a large number of phenomena, largely electrical in nature, which tend to bind materials together.

These phenomena include complexation, coordination, adsorption, absorption, cationic exchange, and aggregation. The usual consequence of these reactions is to keep the metallic substances in the solid or matrix phase of the sediments and out of the aqueous phase.

In the organic sediments, as noted above, precipitation of metal sulfides can occur. Furthermore, organic matter with large surface areas is highly effective at sorption of metallic substances. Thus, although the physical chemistry is somewhat different in the organic sediments than in the fill sediments, the net result is the same. The metallic substances of concern are removed from the aqueous phase to the solid phase in the organic sediments. The additional biological chemistry also has the same net result.

The sand/silt sediments beneath the fill and organic sediments act in a similar fashion to the fill sediments because they contain a diverse assortment of trace elements in the transition series. This is evident by the diversity and the darkness of the colors of these sediments. Here, too, the copper, zinc, lead, or mercury that has reached this sediment layer is largely retained in the solids.

4. Chemistry of Water in the Subsurface

Conductance, or conductivity, is a measure of the concentration of ions in water or soil. The metal contaminants studied at Interstate are partially ionic in water and soil, but so are many other constituents. We have taken conductivity measurements in all samples of soil and water. These conductances are poorly correlated with the concentrations of the four contaminants studied. They may, however, tell us something about the overall chemistry of the groundwater.

In the soil samples the range of conductivity was from 100 to 5,000 micromhos per centimeter. In the water samples the range was from 630 umhos/cm (micromhos per centimeter) in MW-1 to 3,600 umhos/cm in water taken from the lagoon. In the conductivity study of December 28, 1987, water in MW-1 again had the lowest value, 742 umhos/cm. Water in the bottom of MW-6 had the highest value, 2,810 umhos/cm. Half of the wells had water with conductivities over 2,000 micromhos per centimeter. The wells which had water with high conductivities were not necessarily the ones with higher levels of the metallic elements of concern. In the analyses reported in our first report, the correlation coefficient between conductivity and total concentration of the four elements is -0.20. Not only is the correlation poor, it is negative!

Since the four metal element concentrations do not explain the variation in conductivity, what would? This site is in an estuarine environment, and the groundwater beneath the site is below sea level. According to Davis and DeWiest in Hydrogeology (1966):

> Pure water has a conductance of 0.055 micromhos at 25°C. Laboratory distilled water commonly has a conductance of 0.5 to 5.0 micromhos. Rainwater will usually range from about 5.0 to 30 micromhos; potable subsurface water ranges from 30 to 2,000 micromhos, ocean water from 45,000 to 55,000 micromhos, and oil-field brines are commonly more than 100,000 micromhos.

The groundwater with conductivities over 2,000 micromhos (umhos/cm) is not fresh water, and probably even water with a conductance of 600 umhos/cm is not fresh water in the hydrogeological setting of Kearny. It seems reasonable to conclude that the high conductivities of the ground and surface water at Interstate are not controlled by pollution. They are caused primarily by the natural salinity of brackish estuarine water to which the site is hydraulically connected.

The salinity of brackish groundwater has chemical consequences for the metallic elements of concern. In saline water there is a phenomenon known as salting out. Brackish water contains higher concentrations than fresh water of alkali metal cations, such as sodium and potassium; alkaline earth cations, such as calcium and magnesium; and their concomitant anions, such as chloride, bicarbonate, and sulfate. These metallic elements are much more soluble in water than copper, zinc, mercury, and lead, and they drive the heavy metal cations out of solution into the solid phase at a pH in the neutral to moderately basic range. The consequence is that concentrations of the elements of concern are lower in brackish water than they would be in fresh water.

Furthermore, brackish water has pH control mechanisms which tend to keep the water on the basic side of neutrality. The pH of water samples, which ranged from 7.45 at MW-1 to 10.08 in the lagoon, is additional evidence that the water is brackish. As previously noted, the solubilities of copper, zinc, lead, and mercury compounds are very low at alkaline pH.

5. Chemical Interactions

Although water is still "the universal solvent" and low concentrations of the metal elements of concern, such as copper, zinc, lead, and mercury, are and will continue to be present in the groundwater in the interstices of contaminated sediments, all the chemical interactions tend to keep concentrations low. The chemistry of the metal elements themselves favors their

concentration in the solid phase, that is, in the solids of the sediments and not in the water. The chemistry of the sediments in interaction with metal species dissolved in water tends to remove the metals from solution. If water containing dissolved contaminants were to move away from the contaminated sediments, then the adjacent cleaner sediments would "clean" the water by sorbing or precipitating the metal species out of the aqueous phase into the solid phase. Furthermore, the brackish groundwater, because of its salinity, keeps the aqueous concentrations of contaminants low.

Unless there are mechanisms to move large quantities of water through the contaminated sediments at appreciable rates, so that contaminants are moved away from the contaminated solid matrix in water, then the contaminants will be largely contained in the existing volume of contaminated soil. All the dominant chemical interactions tend to keep the contaminants self-contained. Diffusion is the only major small scale mechanism available to cause dispersion of the contaminants in the subsurface.

6. Hydraulic Conductivity

Estimates of hydraulic conductivities (K) of the sediments encountered in borings are given in Table A-2. The logarithmic mean of all estimates given in this table down to a depth of 12 feet was calculated. (See Table A-4.) The logarithmic mean of these data is 0.731 meters per day. This average value can now be used to estimate groundwater flow rates beneath the Interstate site using Darcy's law.

These estimates of hydraulic conductivities are based on the assumption that the fluid moving in the ground is fresh water. However, we have already established that the fluid is brackish water, which has a higher salinity than fresh water. Bouwer (1978) notes that the ionic composition of the water affects conductivity. Water with a relatively high concentration of sodium ions, which brackish water has, causes clay particles, which are prevalent in these sediments, to be dispersed instead of flocculated. Dispersed clay has a lower hydraulic conductivity than flocculated clay. Thus, the hydraulic conductivities of the Interstate site are probably considerably lower than the estimates used.

Bouwer also notes that temperature has an effect on hydraulic conductivity because water is more viscous at lower temperatures than at higher temperatures. The hydraulic conductivity of the solid matrix is directly proportional to the viscosity of the water. It is lower in winter than in summer.

BORING:	A		B		C		D		E		F		G	
DEPTH (feet)	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K
2	10 - 1	1 0	1 - 0.1	0 -1	1 - 0.1	0 -1	1 - 0.1	0 -1	1 - 0.1	0 -1	10 -0.1	1 -1	1 - 0.1,	0 -1
4	1 - 0.01	0 -2	10 - 0.1	1 -1	1 - 0.1	0 -1	10 - 0.1	1 -1	10 - 0.1	1 -1	10 -0.1	1 -1	1 - 0.1	0 -1
6	1 - 0.1	0 -1	10 - 0.1	1 -1	1 - 0.01	0 -2	10 - 0.1	1 -1	1 - 0.01	0 -2			1 - 0.1	0 -1
8	1 - 0.1	0 -1	10 - 0.1	1 -1	0.1 - 0.001	-1 -3	10,000 - 1	4 0	1 - 0.1	0 -1			1,000 - 1	3 0
10														
12														
n		8		8		8		8		8		4		8
Mean		-0.37		-0.12		-1.00		0.38		-0.50		0.00		0.00

BORING:	H		I		J		MW-1		MW-2		MW-3		MW-4	
DEPTH (feet)	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K	K (m/day)	Log K
2	1 - 0.1	0 -1	10 - 0.1	1 -1	10 - 0.1	1 -1	1 - 0.1	0 -1	10 - 0.1	1 -1	1 - 0.1	0 -1	1 - 0.01	0 -2
4	1 - 0.1	0 -1	10 - 0.1	1 -1	10 - 0.1	1 -1	1 - 0.1	0 -1	10 - 0.1	1 -1	1 - 0.01	0 -2	1 - 0.01	0 -2
6	1 - 0.1	0 -1	10 - 0.1	1 -1	10 - 0.1	1 -1	1 - 0.01	0 -2	1 - 0.1	0 -1	1 - 0.01	0 -2	1 - 0.1	0 -1
8	10 - 0.1	1 -1	10 - 0.1	1 -1	1 - 0.1	0 -1	10 - 0.1	1 -1	1 - 0.01	0 -2	1 - 0.1	0 -1	1 - 0.1	0 -1
10			10 - 0.1	1 -1	10 - 0.1	1 -1	10 - 0.1	1 -1	10 - 0.1	1 -1	1 - 0.1	0 -1	100 - 1	2 0
12							100 - 1	2 0	10 - 0.1	1 -1	100 - 1	2 0	10 - 0.1	1 -1
n		8		10		10		12		12		12		12
Mean		-0.38		0.00		-0.10		-0.17		-0.25		-0.42		-0.33

BORING:	MW-5		MW-6		TOTAL
DEPTH (feet)	K (m/day)	Log K	K (m/day)	Log K	
2	10 - 0.1	1	10 - 0.1	1	
		-1		-1	
4	10 - 0.1	1	1 - 0.1	0	
		-1		-1	
6	10 - 0.1	1	10 - 0.1	1	
		-1		-1	
8	10 - 0.1	1	100 - 10	2	
		-1		1	
10	100 - 0.1	2	1,000 - 10	3	
		-1		1	
12	100 - 1	2	100 - 10	2	
		0		1	
n		12		12	152
Mean		0.25		0.75	-0.142

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The unconsolidated sediments of the Interstate site, with the exception of the top layer of fill material, were probably laid down as alluvial deposits of the Passaic River and/or the Hackensack River. Bouwer (1978) notes:

> Individual particles of granular subsurface materials are seldom spherical. When deposited under water, the particles usually come to rest on their flat side. Particles deposited in flowing water may be tilted slightly upward in the direction of flow and overlap somewhat. This arrangement [is] called imbrication... The path of water molecules flowing through imbricated material is more tortuous in vertical than in horizontal directions. Consequently, the hydraulic conductivity K_z in a vertical direction will be less than K_x in a horizontal direction. It is not unusual to find K_z values that are only one-fifth or one-tenth of K_x. This phenomenon, called anisotropy, is the rule rather than the exception for (undisturbed) alluvial deposits. ...
>
> Anisotropy is caused not only by particle orientation, but also by layering of materials with different K values, even though each layer itself may be isotropic. For example, an aquifer consisting of separate, horizontal sand and gravel layers will behave like an anisotropic medium because the resistance to vertical flow, where all the water has to move through both sand and gravel layers, will be more than the resistance to horizontal flow, where most of the water can move through the gravel layers only. ...
>
> In most cases, alluvial deposits are considered anisotropic in two directions: vertical and horizontal. However, on a large scale, aquifers and groundwater basins deposited by flowing water may also exhibit anisotropy in the horizontal plane itself, because K_x tends to be greater in the downstream direction than perpendicular thereto. This results from the fact that gravel layers, buried valleys, and similar coarse strata tend to be more continuous in the direction of stream flow at the time they were formed than normal thereto. Such aquifers then have three-dimensional anisotropy with principal K axes in the vertical direction, the horizontal direction parallel to past prevailing stream flows, and the horizontal direction at a right angle to these flows.

The sediments beneath the Interstate site probably exhibit all these heterogeneities in hydraulic conductivities, and then some. It appears to us that attempting to measure actual hydraulic conductivities in the field or in the laboratory would be an

expensive exercise in futility. Instead, we propose to use reasonable assumptions about these hydraulic conductivities to assess the potential for contaminant migration in the subsurface.

7. Hydraulic Gradients

The hydraulic gradient is the change in head, or water table elevation for groundwater in equilibrium with atmospheric pressure, divided by the distance between the two points where the head is measured. It measures the force, or pressure, which moves water through the ground. The hydraulic gradient is highly variable from point to point on the Interstate site. This can be understood by examining water level contour maps. The closer the contour lines are together, the steeper the gradient, and the greater the force available to move water through the ground.

In order to get an approximate average hydraulic gradient for the site, the gradients between the two most distant wells, MW-2 and MW-5, and between the wells with the greatest difference in water table elevation at times, MW-2 and MW-1, were calculated for each day when water elevations were measured. These results are given in Table A-5.

For each measurement date the maximum of the two gradients was selected. Note that on March 4 and March 9, 1987, the gradient between MW-2 and MW-5 was steepest. On the other dates it was steepest between MW-2 and MW-1.

The average hydraulic gradient based on data from seven days scattered throughout 1987 was 0.003033. This is a slope of 0.3%. A slope of 45° is 100%. Thus, the average hydraulic gradient is almost flat, which means that there is little force to move water through the ground.

Water level measurements from the cluster of wells, MW-6, MW-7, and MW-8, indicate that there is also a hydraulic gradient downward in the vertical direction. Table A-6 shows the differences in head between MW-8 and MW-7, and between MW-7 and MW-6. The average head difference for the upper level was 0.270 feet, and for the lower level was 0.559 feet. The bottom of the screen in MW-8 is at a depth of 12 feet, in MW-7 it is at 25 feet, and in MW-6 it is at 37 feet. Thus, the distance between MW-8 and MW-7 is effectively 13 feet, and the distance between MW-7 and MW-6 is 12 feet. Results of calculations for these vertical hydraulic gradients are shown in Table A-6. Between the upper well (MW-8) and the middle well (MW-7) the average gradient was 0.021. Between the middle well (MW-7) and the lower well (MW-6) it was 0.047. These vertical forces are about one order of magnitude greater than the horizontal forces. The implications of this are discussed in the next section.

HYDRAULIC GRADIENTS

Distance from MW2 to MW1 in feet: 522
Distance from MW2 to MW5 in feet: 592

WELL	DATE	WATER ELEVATION (feet)	HEAD DIFFERENCE FROM MW2 (feet)	GRADIENT	MAXIMUM GRADIENT
MW1	05-Feb-87	0.89	1.01	0.001936	0.001936
MW2	05-Feb-87	1.90			
MW5	05-Feb-87	0.84	1.06	0.001790	
MW1	04-Mar-87	1.24	0.91	0.001744	
MW2	04-Mar-87	2.15			
MW5	04-Mar-87	0.86	1.29	0.002179	0.002179
MW1	09-Mar-87	1.22	1.01	0.001936	
MW2	09-Mar-87	2.23			
MW5	09-Mar-87	0.91	1.32	0.002229	0.002229
MW1	17-Mar-87	0.69	1.24	0.002377	0.002377
MW2	17-Mar-87	1.93			
MW5	17-Mar-87	0.57	1.36	0.002297	
MW1	03-Aug-87	-0.68	1.96	0.003757	0.003757
MW2	03-Aug-87	1.27			
MW5	03-Aug-87	0.06	1.22	0.002057	
MW1	21-Aug-87	-1.12	2.30	0.004409	0.004409
MW2	21-Aug-87	1.18			
MW5	21-Aug-87	-0.13	1.31	0.002212	
MW1	28-Dec-87	-0.53	2.27	0.004345	0.004345
MW2	28-Dec-87	1.74			
MW5	28-Dec-87	0.16	1.58	0.002672	
				MEAN	0.003033
				N	7

VERTICAL HYDRAULIC GRADIENTS

WELL	DATE	WATER ELEVATION feet	HEAD MW-7 TO MW-6 feet	HEAD MW-8 TO MW-7 feet	GRADIENT MW-7 TO MW-6	GRADIENT MW-8 TO MW-7	HEAD MW-8 TO MW-6 feet	GRADIENT MW-8 TO MW-6
MW6	09-Mar-87	0.56	0.48		0.0400			
MW7	09-Mar-87	1.04					0.67	0.0268
MW8	09-Mar-87	1.23		0.19		0.0146		
MW6	17-Mar-87	0.09	0.50		0.0417			
MW7	17-Mar-87	0.59					0.69	0.0276
MW8	17-Mar-87	0.78		0.19		0.0146		
MW6	03-Aug-87	-0.83	0.59		0.0496			
MW7	03-Aug-87	-0.24					0.94	0.0377
MW8	03-Aug-87	0.11		0.35		0.0268		
MW6	21-Aug-87	-1.27	0.70		0.0583			
MW7	21-Aug-87	-0.57					0.98	0.0392
MW8	21-Aug-87	-0.29		0.28		0.0215		
MW6	28-Dec-87	-0.69	0.52		0.0435			
MW7	28-Dec-87	-0.17					0.86	0.0345
MW8	28-Dec-87	0.17		0.34		0.0262		
N			5	5	5	5	5	5
MEAN			0.559	0.270	0.0466	0.0207	0.829	0.0332

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8. Migration of Water in the Subsurface

Darcy's Law provides a method for estimating laminar fluid flow through a simple, homogenous solid matrix. In other words it can give the velocity of water through the ground. The version of Darcy's Law that we are using follows:

$$v = \frac{KI}{n}$$

v	Velocity of water
K	Hydraulic conductivity
I	Hydraulic gradient
n	Porosity

The estimated average hydraulic conductivity (K) for the Interstate site from the surface down to a depth of 12 feet is the antilog of -0.142 (Table A-4), which is 0.721 m/day. The estimated average maximum hydraulic gradient (I) is 0.00303 (Table A-5). Porosity (n) is the volume of the space between the solid particles of the sediment which is occupied by groundwater divided by the total volume of the ground materials including water. Davis (1969) gives the range of porosities for fine sand of 40% to 50%, and for medium sand of 35% to 40%. We are assuming the average porosity to be 0.4 (40%). Thus, the average velocity of groundwater in the upper 12 feet of the Interstate site is 0.00547 m/day. This is 5.47 millimeters per day, or 6.55 feet per year. This is the maximum average speed at which water may move laterally in the ground beneath the Interstate site. Movement would be from east to west in the upper 12 feet of the ground.

As previously noted, due to the salinity of the water, the actual hydraulic conductivity of the sediments is probably considerably less than 0.721 m/day. If we make a conservative assumption that it is half this amount, that is, 0.361 m/day, then the velocity of the groundwater would be half, 2.73 mm/day or 3.27 feet per year.

The slow flow of water in the ground horizontally is confirmed by the specific conductivity study, the results of which are reported in Table A-3. The monitoring wells have a diameter of 4 inches, which is 102 millimeters. In flowing across a monitoring well, water would be moving from a material with an assumed porosity of 0.4, where 60% of the volume is solid particles, to water with a porosity of 1.0. The average velocity would be hydraulic conductivity (K) times hydraulic gradient (I) divided by a porosity (n) of 1.0. Thus, the velocity across the pipe would be 1.09 mm/day, instead of 2.73 mm/day. For water to travel from one side of the pipe to the other would take 93 days, which is over three months.

In order to have picked up differences in specific conductivity with depth due to movement of water out of a discreet layer of the ground, the velocity of the water across the well pipe would have to be faster than the velocity of mixing water vertically throughout the length of the pipe. The temperature data show that there is a temperature gradient in each well. The temperature in winter tended to increase with depth. This temperature gradient would cause mixing of the water standing in the well in a much shorter period of time than three months. Consequently, the conductances were essentially constant throughout the depth of the well. These data do not show whether or not there are differences in the specific conductivity of water in the interstices of soil at different depths. They do show that the horizontal velocity of the water across a well is slower than the vertical velocity which causes mixing of the water in a well.

A few of the conductivity readings shown in Table A-3 are not the same as most of the readings in the well. Some measurements made close to the bottom of wells are higher than average. This probably indicates an increase in suspended particles in the water which would increase the conductivity. In MW-3 the uppermost reading was less than the lower ones. This could have been caused by incomplete submersion of the conductivity probe in water, or by stormwater sitting on top of the water column.

There is a vertical component to groundwater movement under the site which is downward, at least in the area of the cluster of wells, MW-6, MW-7, and MW-8. As noted in Table A-6, the mean hydraulic gradient between the depths of 12 feet and 37 feet was 0.0332 in 1987. This column of sediments, as shown in Table A-2, does not contain materials which would form effective aquicludes or even aquitards. These sediments are hydraulically interconnected. This means that water can and probably does move downward. Assuming that the horizontal hydraulic conductivity is 0.361 m/day, and that, due to anisotropy, the vertical conductivity is one-tenth of the horizontal, then the vertical hydraulic conductivity would be 0.0361 m/day. With a porosity of 0.4 then the maximum downward velocity of water would be 3.00 millimeters per day, or 3.59 feet per year. The surface sediments of this portion of the site have probably been contaminated with copper and zinc since about 1947. 1987 is forty years later. Based on these estimates, and assuming that the hydraulic conductivity, porosity, and hydraulic gradient remained constant, water at the surface in 1947 might have moved to a depth of 144 feet by 1987. We encountered clay at the 40 foot depth, which would have a much lower hydraulic conductivity. This clay layer, if horizontally continuous for a few feet or more, probably halts the downward migration of water. Water at the surface in 1947 could have reached the clay layer by 1958. Thus, for the past thirty years, water that came into contact

with contaminated soil at the surface could have been bathing the entire sediment column down to a depth of forty feet. The implications of this are discussed in the next section.

Both horizontal movement of groundwater in a westerly direction and vertical movement in a downward direction are contrary to what would be expected in this hydrogeologic setting if there were no anthropogenic forces acting on the groundwater system. Most of the groundwater on or under the site is below mean sea level, and it is hydraulically interconnected with the estuary and ocean. Under dynamic equilibrium conditions when natural forces control the water table, it would be slightly above mean sea level, and it would slope very slightly downward from west to east. Stormwater running off the shale ridge to the west of Interstate onto the flat meadowland that starts at Interstate, whether as surface water or groundwater, should keep groundwater levels higher in the western portion of the site than the eastern portion.

The Bedrock Map of the Hackensack Meadows, Geologic Report Series No. 1, New Jersey Geological Survey, Department of Environmental Protection, 1959, shows that the Brunswick shale bedrock is at or close to the surface a bit west of Schuyler Avenue in the area near Interstate, and that it is more than 100 feet below sea level beneath the Interstate site. This configuration of the subsurface geologic material is consistent with a natural slow flow of groundwater from west to east.

Furthermore, under natural conditions when the mean ocean water level has primary control on water table elevations of the Interstate site, there would not be a downward vertical hydraulic gradient. There should be no difference in head between wells screened at different depths, and the water table should not drop as far below sea level as it has on parts of this site. MW-1 had a water elevation of 1.12 feet below sea level on August 21, 1987.

It is likely that both the anomalous westward and downward hydraulic gradients are controlled by the same forces. If we can identify these forces then we should be able to postulate a likely pattern of subsurface water flow.

The Kearny stormwater sewer that crosses the Interstate site influences the hydraulic gradients and the direction of groundwater flow. MW-3 and MW-4 are located on either side of the sewer easement and close to it. They are about 269 feet apart. Table A-7 shows the difference in water elevations in these two wells. The average difference in levels between the two wells is essentially zero. On three out of seven dates of measurement the net flow would have been from east to west, and on four out of seven dates it would have been from west to east. This tells us that the hydraulic gradient along the pipeline is

GROUNDWATER LEVELS NEAR SEWER

WELL	TOP OF CASING ELEVATION	TOP OF CASING TO GROUND	GROUND ELEVATION
MW3	6.18	2.80	3.38
MW4	7.54	3.60	3.94

WELL	DATE	TIME	TOP OF CASING TO WATER	WATER ELEVATION	MW3 MINUS MW4
MW3	05-Feb-87	12:37	4.55	1.63	0.1400
MW4	05-Feb-87	13:23	6.05	1.49	
MW3	04-Mar-87	8:09	4.35	1.83	-0.0600
MW4	04-Mar-87	8:12	5.65	1.89	
MW3	09-Mar-87	8:25	4.28	1.90	-0.0000
MW4	09-Mar-87	8:30	5.64	1.90	
MW3	17-Mar-87	12:53	4.55	1.63	0.0300
MW4	17-Mar-87	12:49	5.94	1.60	
MW3	03-Aug-87	8:55	5.09	1.09	0.0650
MW4	03-Aug-87	8:56	6.52	1.02	
MW3	21-Aug-87	8:45	5.23	0.95	-0.0100
MW4	21-Aug-87	8:35	6.58	0.96	
MW3	28-Dec-87	10:20	4.88	1.30	-0.2741
MW4	28-Dec-87	10:41	5.96	1.58	
	N			14	7
	MEAN			1.4840	-0.0156
	STANDARD DEVIATION			0.3440	0.1206

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almost zero, that the net movement of groundwater is not in either direction along the pipe line. Furthermore, the mean groundwater elevation near the pipe is 1.5 feet above sea level. This means that the water table is only about 2 feet below the surface. Surely most of the sewer pipe is deeper than 2 feet below the surface.

The fact that the water table along the sewer pipe is level is an indication that the pipe leaks. The fact that the water table is so close to the surface along the pipe indicates that water leaks from the pipe to the groundwater and to the surface when the pipe is full, during and after storms. During dry periods migration of water would be more likely to be away from the pipe than toward it. Groundwater may move into the pipe, but this would not be the dominant direction of flow. Under no conditions, according to the 1987 data on water levels, would groundwater flow eastward through the pipe to some point off the Interstate site in measurable quantities.

Since the westward and downward hydraulic gradients can not be explained by the geology and topography of the area, what other explanations are there? The reasonable explanation is groundwater withdrawals from areas to the west and from depths below sea level.

The water supply well on the westerly side of the Interstate site is pumped. It is being pumped at a rate of about 2,800 gallons per day on average. At a minimum, 22 inches of water per year is being recharged on the site. This number is based on an average precipitation of 44 inches per year, of which half does not get into the groundwater because it evaporates. More water than this is recharged on the Interstate site because a large area on site serves as a stormwater storage basin for the surrounding upland areas. With a recharge rate of 22 inches per year, replenishing the water removed from the well without drawing down the water table (except in the immediate vicinity of the well) requires a recharge area of 1.71 acres with a radius of 154 feet. That area is only 20% of the total area of the Interstate site. We conclude that, although pumpage of the Interstate well may have seasonal effects on water levels in nearby monitoring wells, it does not explain the directions of the hydraulic gradients observed.

We conclude that there has been a regional overdrafting of groundwater. This has probably been aggravated by decreasing recharge capability in the region. The consequences of withdrawal of groundwater beyond the renewal capability of the system are the induction of the unstable hydraulic forces which have been observed on the Interstate site, and the slow landward or westerly migration of brackish water into ground which previously stored fresh water.

The pumpage of Interstate's well has not now or for many years had an adverse effect on regional groundwater supplies. Furthermore, its pumpage serves to restrain circulation of groundwater which has passed through contaminated soil to that volume of ground beneath the site itself.

The data are insufficient to describe groundwater flow patterns beneath the site with more detail than has already been given. We do know, however, that the migration of water in the subsurface is very slow. Consequently, the impacts of this migration, if any, are not going to be noticeable for centuries.

9. Migration of Metals in the Subsurface

Because of the chemical nature of the metal elements that are contaminating the upper 6 to 8 feet of soil on the site, the metal ions or compounds that become dissolved in groundwater do not move with the water at its velocity. They tend to move back into the solid phase within short distances. As already discussed, metal migration is severely retarded in comparison to water migration.

This is confirmed by field data. As discussed in the previous section, the column of ground in the area of the cluster of wells, MW-6, MW-7, and MW-8, above the clay layer has probably had water moving through contaminated soil and the rest of the column for the past thirty years. As shown graphically in Figures II(12) through II(15), the soil concentrations of the four elements of concern are all at acceptable levels below 8 feet or less from the surface. We might assume that in 30 years equilibrium conditions have been achieved, and, that with no new additions of contaminants to the soil in the future, the distribution of metal concentrations in the sediments will remain essentially as they now are for the next hundred years. Or, we might assume that they will continue to migrate. In 40 years the contaminants have migrated 8 feet at the maximum. Then in the next hundred years the maximum possible extent of contaminated soil would be to a depth of 20 feet, and the concentrations of contaminants in the solid matrix above 8 feet would be generally lower than at present. It should be emphasized that the dispersion of the contaminants described here only occurs by their solution in the groundwater and then their removal from the aqueous phase to the solid phase elsewhere. Furthermore, the law of mass action tells us that, with the situation as it is at Interstate, elevated concentrations of contaminants in groundwater occur in close proximity to highly elevated concentrations of contaminants in the sediments, that is, in the solid phase.

The estimated horizontal component of the maximum velocity of groundwater (2.73 mm/day) is close to that of the vertical component (3.00 mm/day). If we assume that horizontal migration of the contaminants is similar to the vertical, and that it should be extrapolated linearly into the future, then in 100 years the lateral extent of elevated concentrations of contaminants in soil and water would be about 18 feet beyond its present boundary in the direction of groundwater flow towards the west. Even with this worst case assumption the potential migration of copper, zinc, lead, mercury, or other heavy metals in groundwater from beneath the Interstate site is negligible.

The analyses for the contaminant metals dissolved in ground and surface water at the site essentially confirm our theoretical conclusion that, even in water in direct contact with highly contaminated soil, concentrations of the dissolved contaminants would be low. The maximum concentration found was 2.1 mg/l of zinc in water from MW-4. This is remarkably low.

The ratios of each concentration in water to an average concentration in the sediments with which the water is in contact were calculated, and are shown in Table A-8. The maximum ratio was 27,000,000 to 1. This compares the concentration of zinc in the sediment sample taken from the lagoon at location L-3 to that in water from the same area. Both the aqueous concentrations, and the ratios of concentrations in the solid phase to those in the water phase are quite erratic. For instance, lead was not detected in the soil samples from MW-7 but was detected in the groundwater sample. This gives a ratio of zero. The fact that the distribution pattern of concentration of metal contaminants in water is much more erratic than that in soil is only partially attributable to the fact that far fewer water samples were taken than soil samples. The dominant controlling factor is the complex of chemical, biological, and physical interactions which vary tremendously from point to point in the ground.

Obviously, concentrations of the heavy metal contaminants in the groundwater beneath the Interstate site tend to be higher than they would be in an uncontaminated area with brackish water. However, that is not the issue. Do these low levels of contaminants in groundwater or surface water pose unacceptable ecosystemic risks? This is the issue. We contend that they do not.

The highest concentration of aqueous copper found was 0.51 mg/l. The standard for copper in potable water is 1.0 mg/l, so all 14 samples had copper levels acceptable for drinking. The same was true for zinc and cadmium. Mercury has a very low standard of 0.002 mg/l because it is highly toxic to humans. This value was slightly exceeded in one out of 14 samples. This was in a surface water sample in the pond where wastes from the sewer system are discharged. The chromium results were puzzling.

SOIL VS. WATER CONCENTRATIONS
RATIO OF SOIL CONC. TO WATER CONC.

MAP SITE	SAMPLE ID	Cu	Pb	Hg	Zn	TOTAL
1	MW1		4,062		28,357	16,274
2	MW2	250,545	77,249		55,641	67,542
3	MW3	30,689	113,210		681,793	173,670
4	MW4	80,914	23,212		4,393	6,224
5	MW5	28,844	26,094		53,826	44,772
6	MW6		697		1,120	1,387
7	MW7	307	0		250	243
8	MW8	43,359	110,915		63,805	61,822
L-1	LW-1	150,000	59,072		4,142,857	575,272
L-2	LW-2	224,390	36,184		4,285,714	514,102
L-3	LW-3	146,154	36,879		27,000,000	762,193
P-1	PW-1	13,846	44,118	222,857	141,667	102,175
P-2	PW-2	428,571	407,407	9,500	123,529	231,213
P-3	PW-3	46,512	152,273	34,667	885,714	162,769

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These water samples were taken on three different dates and analyzed in three different batches. In the first batch taken on February 5, 1987, all five samples had significant levels of chromium, but in the other two batches no chromium was detected. The levels found in the first batch were above the potable water standard for hexavalent chromium of 0.05 mg/l. However, hexavalent chromium is highly reactive, and, under the environmental conditions found at this site, would not be found in significant proportions in the total chromium concentration. For divalent or monovalent chromium ions, the concentrations of chromium found would be acceptable based on human health criteria. Lead is the only contaminant found in concentrations above its potable water standard of 0.05 mg/l in a significant proportion of the samples (50%). The maximum concentration was six times the standard. However, potable water standards are not appropriate criteria for judging the potential risks from this water, because this water is not potable and would not be potable under natural conditions. This water is brackish!

has significance [illegible] proven

The issue to address is whether or not lead, at a concentration of 0.3 mg/l or higher, or any of the other contaminants will have significant adverse impacts on the ecosystem in which it is found. We have established that the contaminants of concern will not migrate as solutes in groundwater at elevated concentrations further than a few feet from the contaminated solids from which they originated. Thus, the ecosystem of concern is the Interstate site, and, perhaps, some adjacent land. [This site and adjacent sites are zoned for industrial use. If the surface is covered, as proposed, to protect people, pets, and wildlife, then only microorganisms and a few plants would be at risk.] Industrial use of land usually places microorganisms and plants at risk. We do not perceive any significant adverse impacts on this ecosystem if the remedial action we propose is undertaken.

The Water Pollution Control Act of the State of New Jersey states:

> It is the policy of this State to restore, enhance and maintain the chemical, physical, and biological integrity of its waters, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water.

How should this policy be interpreted given the very limited migration of the heavy metal elements of concern in the subsurface?

C. PROPOSAL FOR FURTHER INVESTIGATION

1. Measurement of Surface Water Elevations

Determining the water elevations of the lagoon, the large pond, and the small pond at the same time as water levels in the monitoring wells would provide very valuable additional information about groundwater hydraulic gradients and flow directions. We shall have devices installed so that these measurements can be made. We propose to take water level measurements at least two more times about a month apart.

2. Resampling and Chemical Analysis of Surface and Ground Water

The results from one set of samples of water from monitoring wells and surface water, which were taken on three different days, are not sufficient to determine variability, nor to assess the meaning of anomalous results. We propose to take two more rounds of water samples about a month apart. In addition to the eight samples from monitoring wells, three from the lagoon, and three from the pond, we propose to take one sample from the water supply well, and two from the small pond. Parameters to be measured shall include pH, specific conductivity, priority pollutant metals, sodium, and chloride. The samples for metals will be filtered and acidified in the field. We would be willing to discuss with representaives of the Department of Environmental Protection the possibility of adding other parameters to the list.

II. ENVIRONMENTAL CONDITIONS OFF-SITE

There are several indications that some soil on the sites owned by the railroad (Block 275, and Block 253 or 252, Lot 5), and the property to the north of Interstate (Block 252, Lot 4B) may be contaminated. Boring D on Figure II(1) was made very close to the property line between the Interstate site and Block 252, Lot 4B. Soil samples from that boring show that there is contamination down to at least 4 feet deep. Other borings and monitoring wells near property lines also show elevated levels of the elements of concern. Furthermore, some of the off-site vegetation is depauperate.

We agree that further study is needed. Studying the character of the vegetation would give a rough estimate of the possible extent of off-site contamination. We suggest that discussion between representatives of the Department and ourselves on the following topics would be an appropriate way to proceed:

- Purpose of study;
- Method of study;
- Persons responsible for bearing costs of study;
- Persons responsible for conducting study;
- Provision for providing access to all sites involved in study; - including the Bergen Ave Site
- Protection of participants from possible legal actions.

III. ENVIRONMENTAL IMPACTS OF STORMWATER SEWER SYSTEM

There have been numerous environmental effects on the Interstate site from stormwater and sanitary sewage that have entered the site via the stormwater sewers in the ground at the site. Some of these have been discussed in this report and the earlier report. We are willing to discuss these observations with whomever is concerned about the environmental impacts of the system. The Town of Kearny and the Passaic Valley Sewerage Commissioners are responsible for the sewer system. Conrail is also involved. Further discussion should involve these parties. Further study might be the responsibility of the municipality. The involvement of Interstate in any future study should be negotiated with the company, and with us as its representatives.

IV. ENVIRONMENTAL IMPACTS OF RECIRCULATING LAGOON

The question has arisen as to whether or not the lagoon on the Interstate site requires a New Jersey Pollutant Discharge Elimination System (NJPDES) permit. The lagoon is used as a storage basin for water used in the brass separation process. After solid particles have settled out of the water in a settling basin lined with concrete, the supernatant water is drained into the lagoon. Then water is pumped from the lagoon back to the start of the brass separation process.

The water, from the time it leaves the settling basin until it leaves the settling basin again, is saturated with dissolved species of the metallic elements of concern -- zinc and copper. It is also saturated with suspended colloidal particles. The concentrations of the dissolved and colloidal species are virtually constant as the water is recirculated time after time. As water evaporates from the water in circulation, new water from the well is added. The concentration still does not change. The rate of precipitation or settlement in the lagoon is equaled by the rate of resuspension of material in the water. It is a system in chemical equilibrium.

It is also a system in physical equilibrium. The lagoon is cut into the groundwater-bearing sediments on the site. The hydraulic pressure which might move water-borne pollutants into the groundwater is equal and opposite to the hydraulic pressure of the groundwater trying to get into the lagoon. The effective result is that groundwater does not move into the lagoon, and that lagoon water does not move into the groundwater.

In our view this situation does not constitute a "discharge". According to the New Jersey Water Pollution Control Act:

> "Discharge" means the releasing, spilling, leaking, pumping, pouring, emitting, emptying, or dumping of a pollutant into the waters of the State or onto land or into wells from which it might flow or drain into said waters, ... (58:10A-3.e.)
>
> "Pollutant" means any dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse oil, grease, sewage sludge, munitions, chemical wastes, biological materials, radioactive substance, thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal or agricultural waste or other residue discharged into the waters of the State. (58:10A-3.n.)
>
> "Waters of the State" means the ocean and its estuaries, all springs, streams and bodies of surface or ground water, whether natural or artificial, within the boundaries of this State or subject to its jurisdiction. (58:10A-3.t.)
>
> It shall be unlawful for any person to discharge any pollutant, except in conformity with a valid New Jersey Pollutant Discharge Elimination System permit ... (58:10A-6.a.)

There is no real discharge, since there is nothing happening that changes water quality. Therefore, technically, we feel that there is no discharge taking place.

AOM-012

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO File Through T. Cavalier

FROM Kevin Krause KK DATE 9/20/85

SUBJECT Interstate Metals Separating Corp., 275 Dutes Street, Kearny

BACKGROUND:

At the request of the Kearny Health Dept., a meeting was held on 9-19-85 to discuss mercury contamination at the above mentioned site. Representatives from Kearny Health as well as Hudson Regional Health were present. At approximately 1045 Hrs, T. Cavalier and myself proceeded to the site. We spoke with Barry Brown the owner of Interstate Metals Separating Corp., Mr. Brown was very disturbed that we had not called earlier to announce our inspection.

INVESTIGATION:

During the course of our questioning, the following information was obtained from Mr. Brown.

1) IMSC has been at this site since 1945. Prior to 1945, Johnson File Co. was at this site.
2) IMSC did in fact "sun mercury during the 1950-1960's (1967). The mercury contamination on site is the result of spills according to Mr. Brown.
3) IMSC has a well used to withdraw 200 gal./hr of cooling water from the aquifer. The well is 371' deep and has not been sampled recently to the best of Brown's knowledge.
4) A disgruntled employee may have purposely left contaminates during a previous clean up. Employee was in charge of supervising the clean up. Exact locations of "remaining" contamination were given by informant to DEP (Brady & Howitz) according Brown.
5) Site She is owned by IMSC. Possible sale in future is anticipated Mr. Brown is willing to clean up site now, as long as clean up will assist in an ECRA approval of sale at later date.
6) Consultant for IMSC is Max Frenkel, 609-779-8112 of total Environmental Services.

OBSERVATIONS:

Outside of the fenced area (land still owned by IMSC) scoops of soil from various pts (surface only) in the area were obtained and denoted cs sample kk050. Time of sample was=1120 Hrs. Sample was taken by the wrpter. Many of the scoops of soil were taken where dirt bike tracks were observed. At one location a scoop at a chromium salt like material (yellowish-green solid) was included in this sample.

C-1

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Inside the fenced area, I took a composite sample from 2 areas which are known to have mercury contamination and 2 areas adjacent to the building in which the mercury was recovered. In a drainage through inside the mercury building, several scoops of soil were taken (=16" deep) in which liquid mercury was observed. A scope of bottom sludge from the colling water discharge through immediately, outside the mercury building was included in this sample. This sample was obtained at approximately 1155 HRS. and is designated as DEP sample# kk051. Sample was collected by the writer.

RECOMMENDATIONS:

The investigative phase should include the following elements:

1) A soil sampling plan should be developed and submitted to DEP with 30 days.

2) The water well at IMSC should be immediately sampled and analyzed for priority pollutant plus forty parameters. Surface water in the unsecured area should also be sampled and analyzed in the same manner.

3) Measures to restrict access to the unsecured site should be required.

4) All sample results should be forward to DWM-BFO.

KK/cr

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY

Company: NJDEP Job No.

Address

Attention:

Sample Description: Rec'd 2 samples directly from client. Non-ETC bottles

CUSTOMER ID	DESCRIPTION	ETC #
KK050 9-19-85 11:20 Composites	1 - 1 liter amber bottle (soil)	
KK051 9-19-85 11:55 Composite	1 - 1 liter amber bottle (soil)	

Sample(s) Relinquished by: Kevin K. Krause

Time: 1130 Date: 9-20-85

Sample(s) Received by: M. Schstadt

Time: 11:30 Date: 9-20-85

Form DWM-022
10/82

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
BUREAU OF FIELD OPERATIONS

NO. _____

FIELD SAMPLING DATA SHEET

DATE 9/19/85

HW/EF # 85 - 09 19 02M

E.P.A. ID # NONE

CASE NAME Interstate Metal Separating Co.

TIME OF SAMPLING 1120 HOURS

LOCATION Dukes St. Kearny

COLLECTED BY: Kevin Krause

CONTACT: Barry Brown

RECORDED BY: Kevin Krause

FIELD SAMPLE NO. A KK050

B _____

SPECIFIC SAMPLING SITE:

- [ ] DRUM # _____
- [ ] TANK TRAILER # _____
- [ ] STATIONARY TANK # _____
- [ ] HORIZONTAL [ ] VERTICAL [ ] UNDERGROUND
- [ ] TOP [ ] MIDDLE [ ] BOTTOM
- [x] OTHER misc. sites at perimeter of fenced area

SAMPLING CONTAINER:

- [x] GLASS [ ] PLASTIC
- [ ] OTHER _____

CONTAINER VOLUME:

- [ ] PINT [ ] QUART
- [x] OTHER _____ OZ./ 950 ML.

CONTAINER FILLED: [x] YES [ ] NO

CHAIN OF CUSTODY INITIATED

- [x] YES [ ] NO

TYPE OF SAMPLE:

- [ ] LIQUID [ ] SLUDGE
- [ ] SOLID [x] SOIL
- [ ] OTHER _____

CHARACTERISTICS OF SAMPLE:

- [ ] TURBID [ ] TRANSPARENT

COLOR brown

ODOR None

OTHER _____

SUSPECTED SUBSTANCE(S):

ADDITIONAL INFORMATION:

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Form DWM-022
10/82

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
BUREAU OF FIELD OPERATIONS

NO. _____

FIELD SAMPLING DATA SHEET

DATE 9/19/85

HW/EF # 85 - 09 19 02M

E.P.A. ID # NONE

CASE NAME IMSC

TIME OF SAMPLING 1155 HOURS

LOCATION Oakes Street
Kearny

COLLECTED BY: Kevin Krause

CONTACT: Barry Brown

RECORDED BY: Kevin Krause

FIELD SAMPLE NO. A KK051

B _____

SPECIFIC SAMPLING SITE:

- [ ] DRUM # _____
- [ ] TANK TRAILER # _____
- [ ] STATIONARY TANK # _____
- [ ] HORIZONTAL [ ] VERTICAL [ ] UNDERGROUND
- [ ] TOP [ ] MIDDLE [ ] BOTTOM
- [x] OTHER inside mercury building

SAMPLING CONTAINER:

- [x] GLASS [ ] PLASTIC
- [ ] OTHER _____

CONTAINER VOLUME:

- [ ] PINT [ ] QUART
- [x] OTHER _____ OZ./ 950 ML.

CONTAINER FILLED: [x] YES [ ] NO

CHAIN OF CUSTODY INITIATED

[x] YES [ ] NO

TYPE OF SAMPLE:

- [ ] LIQUID [ ] SLUDGE
- [ ] SOLID [x] SOIL
- [ ] OTHER _____

CHARACTERISTICS OF SAMPLE:

- [ ] TURBID [ ] TRANSPARENT

COLOR brown

ODOR NONE

OTHER _____

SUSPECTED SUBSTANCE(S):

ADDITIONAL INFORMATION:

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

NOV 12, 1985

TA[illegible] [illegible]TATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols – Analysis Data (QR05)

outside fenced area

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1166	NJ DEP	NJDINTERMT	KK050	850920		

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/kg	110000	6000
2M	Arsenic	mg/kg	13	1.0
3M	Beryllium	ug/kg	21600	50
4M	Cadmium	ug/kg	64000	300
5M	Chromium	ug/kg	249000	1000
6M	Copper	ug/kg	70800000	600
7M	Lead	mg/kg	12300000	6000
8M	Mercury	mg/kg	40000	1000
9M	Nickel	ug/kg	1370000	1000
10M	Selenium	mg/kg	30	.5
11M	Silver	ug/kg	301000	1000
12M	Thallium	mg/kg	.5	.5
13M	Zinc	ug/kg	ND	3000
14M	Cyanide, Total	mg/kg	<.5	.5
15M	Phenolics, Total	mg/kg	.4	.1

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

NOV 1, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors - GC Analysis Data (QR14)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1166	NJ DEP	NJDINTERMT	KK050	850920		

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Reco
Aroclor 1242	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	2900 c	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1248	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	1300	ND	ND	ND	0	-	ND	0	-

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank, Spiked Blank cannot be performed for this sample matrix.

C Confirmed by second column.

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NOV 1, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds – GC Analysis Data (QR32)

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Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1166	NJ DEP	NJDINTERMT	KK050	850920		

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[a]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov[b]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1P	Aldrin	ND	13	ND	ND	ND	0	-	ND	100	150[c]
2P	Alpha-BHC	ND	13	ND	ND	ND	0	-	ND	100	0[c]
3P	Beta-BHC	ND	13	ND	ND	ND	0	-	ND	100	110
4P	Gamma-BHC	ND	13	ND	ND	ND	0	-	ND	100	130
5P	Delta-BHC	ND	13	ND	ND	ND	0	-	ND	100	110
6P	Chlordane	ND	1300	ND	ND	ND	0	-	ND	100	-
7P	4,4'-DDT	ND	13	ND	ND	ND	0	-	ND	100	92
8P	4,4'-DDE	ND	13	ND	ND	ND	0	-	ND	100	89
9P	4,4'-DDD	ND	13	ND	ND	ND	0	-	ND	100	69
10P	Dieldrin	ND	13	ND	ND	ND	0	-	ND	100	90
11P	Endosulfan I	ND	13	ND	ND	ND	0	-	ND	100	110
12P	Endosulfan II	ND	13	ND	ND	ND	0	-	ND	100	61
13P	Endosulfan sulfate	ND	13	ND	ND	ND	0	-	ND	100	95
14P	Endrin	ND	13	ND	ND	ND	0	-	ND	100	130
15P	Endrin aldehyde	ND	13	ND	ND	ND	0	-	ND	100	37
16P	Heptachlor	ND	13	ND	ND	ND	0	-	ND	100	110
17P	Heptachlor epoxide	ND	13	ND	ND	ND	0	-	ND	100	120
25P	Toxaphene	ND	1300	ND	ND	ND	0	-	ND	0	-

[a] ETC established Method Detection Limit for this particular sample.

[b] Reagent Blank, Spiked Blank cannot be performed for this sample matrix.

[c] Recovery variable due to sample matrix interference.

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

OCT 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1166	NJ DEP	NJDINTERMT	KK050	850920		

PDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1B	Acenaphthene	ND	130	ND	ND	ND	0	-	ND	7570	44
2B	Acenaphthylene	ND	240	ND	ND	ND	0	-	ND	7570	44
3B	Anthracene	ND	130	ND	ND	ND	0	-	ND	7570	43
4B	Benzidine	ND	3100	ND	ND	ND	0	-	ND	7570	0
5B	Benzo(a)anthracene	ND	540	ND	ND	ND	0	-	ND	7570	30
6B	Benzo(a)pyrene	223	170	ND	ND	ND	0	-	ND	7570	35
7B	Benzo(b)fluoroanthene	674	330	ND	ND	ND	0	-	ND	7570	38
8B	Benzo(ghi)perylene	ND	280	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	ND	240	ND	ND	ND	0	-	ND	7570	39
10B	bis(2-Chloroethoxy)methane	ND	370	ND	ND	ND	0	-	ND	7570	40
11B	bis(2-Chloroethyl) ether	ND	400	ND	ND	ND	0	-	ND	7570	40
12B	bis(2-Chloroisopropyl)ether	ND	400	ND	ND	ND	0	-	ND	7570	56
13B	bis(2-Ethylhexyl)phthalate	ND	690	ND	ND	ND	0	-	ND	7570	45
14B	4-Bromophenyl phenyl ether	ND	130	ND	ND	ND	0	-	ND	7570	37
15B	Butyl benzyl phthalate	ND	690	ND	ND	ND	0	-	ND	7570	?
16B	2-Chloronaphthalene	ND	130	ND	ND	ND	0	-	ND	7570	
17B	4-Chlorophenyl phenyl ether	ND	290	ND	ND	ND	0	-	ND	7570	41
18B	Chrysene	ND	170	ND	ND	ND	0	-	ND	7570	43
19B	Dibenzo(a,h)anthracene	ND	690	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	130	ND	ND	ND	0	-	ND	7570	38
21B	1,3-Dichlorobenzene	ND	130	ND	ND	ND	0	-	ND	7570	35
22B	1,4-Dichlorobenzene	ND	310	ND	ND	ND	0	-	ND	7570	36
23B	3,3'-Dichlorobenzidine	ND	1180	ND	ND	ND	0	-	ND	7570	23
24B	Diethyl phthalate	ND	690	ND	ND	ND	0	-	ND	7570	44
25B	Dimethyl phthalate	ND	690	ND	ND	ND	0	-	ND	7570	41
26B	Di-n-butyl phthalate	ND	690	ND	ND	ND	0	-	ND	7570	79
27B	2,4-Dinitrotoluene	ND	400	ND	ND	ND	0	-	ND	7570	44
28B	2,6-Dinitrotoluene	ND	130	ND	ND	ND	0	-	ND	7570	47
29B	Di-n-octyl phthalate	ND	690	ND	ND	ND	0	-	ND	7570	40
30B	1,2-Diphenylhydrazine	ND	690	ND	ND	ND	0	-	ND	7570	42
31B	Fluoranthene	1590	150	ND	ND	ND	0	-	ND	7570	42
32B	Fluorene	ND	130	ND	ND	ND	0	-	ND	7570	42

ETC ENVIRONMENTAL TESTING and CERTIFICATION

OCT 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1166	NJ DEP	NJDINTERMT	KK050	850920		

PDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[a]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen Added ug/kg	% Recov[b]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
33B	Hexachlorobenzene	989	130	ND	ND	ND	0	-	ND	7570	30
34B	Hexachlorobutadiene	ND	63	ND	ND	ND	0	-	ND	7570	38
35B	Hexachlorocyclopentadiene	ND	690	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	1200	110	ND	ND	ND	0	-	ND	7570	36
37B	Indeno(1,2,3-c,d)pyrene	ND	330	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	150	ND	ND	ND	0	-	ND	7570	42
39B	Naphthalene	ND	110	ND	ND	ND	0	-	ND	7570	41
40B	Nitrobenzene	ND	130	ND	ND	ND	0	-	ND	7570	39
41B	N-Nitrosodimethylamine	ND	690	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	690	ND	ND	ND	0	-	ND	7570	43
43B	N-Nitrosodiphenylamine	ND	130	ND	ND	ND	0	-	ND	7570	47
44B	Phenanthrene	941	380	ND	ND	ND	0	-	ND	7570	36
45B	Pyrene	1400	130	ND	ND	ND	0	-	ND	7570	42
46B	1,2,4-Trichlorobenzene	ND	130	ND	ND	ND	0	-	ND	7570	39

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank, Spiked Blank cannot be performed for this sample matrix.

C Recoveries normally low and variable using EPA Protocol Method 625.

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ETC TESTING and CERTIFICATION

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols Analysis Data

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1167	NJ DEP	NJDINTERMT	KK051	[illegible]	0920	

NPDES Number	Compound		Results: Sample Concen.	Results: MDL						
	Antimony	ug/kg	380000	6000						
	Arsenic	mg/kg	ND	2.0						
3M	Beryllium	ug/kg	32300	50						
4M	Cadmium	ug/kg	73300	300						
5M	Chromium	ug/kg	915000	1000						
6M	Copper	ug/kg	49100000	600						
7M	Lead	ug/kg	15900000	6000						
8M	Mercury	mg/kg	220	10						
9M	Nickel	ug/kg	1,880,000	500						
10M	Selenium	mg/kg	2	.5						
11M	Silver	ug/kg	8000	1000						
12M	Thallium	mg/kg	BMDL	.5						
13M	Zinc	ug/kg	ND	3000						
14M	Cyanide, Total	mg/kg	1.0	.5						
15M	Phenolics, Total	mg/kg	.8	.1						

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

OCT 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1167	NJ DEP	NJDINTERMT	KK051	850920		

DES Number	Compound	Results: Sample Concen. ug/kg	Results: MDL ug/kg*	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1A	2-Chlorophenol	ND	210	ND	ND	ND	0	-	ND	7570	45
2A	2,4-Dichlorophenol	ND	170	ND	ND	ND	0	-	ND	7570	42
3A	2,4-Dimethylphenol	ND	170	ND	ND	ND	0	-	ND	7570	40
4A	4,6-Dinitro-o-cresol	ND	1500	ND	ND	ND	0	-	ND	7570	26
5A	2,4-Dinitrophenol	ND	2600	ND	ND	ND	0	-	ND	7570	23
6A	2-Nitrophenol	ND	230	ND	ND	ND	0	-	ND	7570	35
7A	4-Nitrophenol	ND	150	ND	ND	ND	0	-	ND	7570	40
8A	p-Chloro-m-cresol	ND	190	ND	ND	ND	0	-	ND	7570	41
9A	Pentachlorophenol	ND	230	ND	ND	ND	0	-	ND	7570	32
10A	Phenol	ND	94	ND	ND	ND	0		ND	7570	42
11A	2,4,6-Trichlorophenol	ND	170	ND	ND	ND	0		ND	7570	39

* ETC established Method Detection Limit for this particular sample.

* Reagent Blank, Spiked Blank cannot be performed for this sample matrix.

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

NOV 1, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds – GC Analysis Data (QR32)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1167	NJ DEP	NJDINTERMT	KK051	850920		

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spik		
		Sample Concen. ug/kg	MDL ug/kg[a]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov[b]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1P	Aldrin	ND	13	ND	ND	ND	0	-	ND	100	150[c]
2P	Alpha-BHC	ND	13	ND	ND	ND	0	-	ND	100	0[c]
3P	Beta-BHC	ND	13	ND	ND	ND	0	-	ND	100	110
4P	Gamma-BHC	ND	13	ND	ND	ND	0	-	ND	100	130
5P	Delta-BHC	ND	13	ND	ND	ND	0	-	ND	100	110
6P	Chlordane	ND	1300	ND	ND	ND	0	-	ND	100	-
7P	4,4'-DDT	ND	13	ND	ND	ND	0	-	ND	100	92[c]
8P	4,4'-DDE	ND	13	ND	ND	ND	0	-	ND	100	89
9P	4,4'-DDD	ND	13	ND	ND	ND	0	-	ND	100	69
10P	Dieldrin	ND	13	ND	ND	ND	0	-	ND	100	90
11P	Endosulfan I	ND	13	ND	ND	ND	0	-	ND	100	110
12P	Endosulfan II	ND	13	ND	ND	ND	0	-	ND	100	61
13P	Endosulfan sulfate	ND	13	ND	ND	ND	0	-	ND	100	95
14P	Endrin	ND	13	ND	ND	ND	0	-	ND	100	130
15P	Endrin aldehyde	ND	13	ND	ND	ND	0	-	ND	100	37
16P	Heptachlor	230	13	ND	ND	ND	0	-	ND	100	0
17P	Heptachlor epoxide	ND	13	ND	ND	ND	0	-	ND	100	20
25P	Toxaphene	ND	1300	ND	ND	ND	0	-	ND	0	-

[a] ETC estimated Method Detection Limit for this particular sample.

[b] Reagent Blank. Spiked Blank cannot be performed for this sample mat

[c] Recovery variable due to sample matrix interference.

[d] Confirmed by second column.

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TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors – GC Analysis Data (QR14)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1167	NJ DEP	NJDINTERMT	KK051	850920		

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spik		
	Sample Concen. ug/kg	MDL ug/kg[a]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov[b]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov[b]
Aroclor 1242	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	BMDL[c]	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1248	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	1300	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	1300	ND	ND	ND	0	-	ND	0	-

[a] ETC established Method Detection Limit for this particular sample.
[b] Reagent Blank. Spiked Blank cannot be performed for this sample matrix.
[c] Confirmed by second column.

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

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TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds – GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
*K1167	NJ DEP	NJDINTERMT	KK051	850920		

DES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results: Sample Concen. ug/kg	Results: MDL ug/kg*	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: Recov %
1V	Acrolein	ND	100	ND	ND	ND	800	102	31000	800	0
2V	Acrylonitrile	ND	100	ND	ND	ND	80.0	90	696	80.0	68
3V	Benzene	ND	4.4	ND	ND	ND	18.0	102	ND	18.0	137
4V	bis(Chloromethyl)ether	ND	10	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18.0	88	ND	18.0	75
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18.0	97	ND	18.0	147
7V	Chlorobenzene	ND	6.0	ND	ND	ND	18.0	101	ND	18.0	131
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18.0	94	ND	18.0	86
9V	Chloroethane	ND	10	ND	ND	ND	18.0	101	ND	18.0	141
10V	2-Chloroethylvinyl ether	ND	10	ND	ND	ND	18.0	135	ND	18.0	124
11V	Chloroform	2.74	1.6	ND	ND	ND	18.0	100	ND	18.0	134
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18.0	95	ND	18.0	111
13V	Dichlorodifluoromethane	ND	10	ND	ND	ND	18.0	108	ND	18.0	158
14V	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18.0	100	ND	18.0	139
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18.0	98	ND	18.0	98
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18.0	100	ND	18.0	150
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18.0	101	ND	18.0	121
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18.0	92	ND	18.0	
19V	Ethylbenzene	ND	7.2	ND	ND	ND	18.0	101	ND	18.0	
20V	Methyl bromide	ND	10	ND	ND	ND	18.0	91	ND	18.0	146
21V	Methyl chloride	ND	10	ND	ND	ND	18.0	107	ND	18.0	138
22V	Methylene chloride	79.2	2.8	15.3	6.88	17.5	18.0	43	88.2	18.0	0
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18.0	106	20.2	18.0	8
24V	Tetrachloroethylene	BMDL	4.1	ND	ND	ND	18.0	105	ND	18.0	151
25V	Toluene	ND	6.0	ND	ND	ND	18.0	104	ND	18.0	143
26V	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18.0	99	ND	18.0	144
27V	1,1,1-Trichloroethane	ND	3.8	ND	ND	ND	18.0	100	ND	18.0	151
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18.0	102	ND	18.0	92
29V	Trichloroethylene	3.99	1.9	ND	ND	ND	18.0	97	ND	18.0	137
30V	Trichlorofluoromethane	ND	10	ND	ND	ND	18.0	102	ND	18.0	156
31V	Vinyl chloride	ND	10	ND	ND	ND	18.0	105	ND	18.0	157
18V	trans-1,3-Dichloropropylene	ND	10	ND	ND	ND	18.0	93	ND	18.0	103

* EPA published Method Detection Limit.

* Recovery variable due to sample matrix interference.

Relative Percent Difference (RPD) for VOA

ETC ENVIRONMENTAL TESTING and CERTIFICATION

OCT 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
K1167	NJ DEP	NJDINTERMT	KK051	850920		

ETS Number	Compound	Results: Sample Concen. ug/kg	Results: MDL ug/kg	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1B	Acenaphthene	ND	120	ND	ND	ND	0	-	ND	7570	44
2B	Acenaphthylene	ND	220	ND	ND	ND	0	-	ND	7570	44
3B	Anthracene	3000	120	ND	ND	ND	0	-	ND	7570	43
4B	Benzidine	ND	2800	ND	ND	ND	0	-	ND	7570	0
5B	Benzo(a)anthracene	665	490	ND	ND	ND	0	-	ND	7570	30
6B	Benzo(a)pyrene	ND	160	ND	ND	ND	0	-	ND	7570	35
7B	Benzo(b)fluoroanthene	1200	300	ND	ND	ND	0	-	ND	7570	38
8B	Benzo(ghi)perylene	ND	260	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	512	220	ND	ND	ND	0	-	ND	7570	39
10B	bis(2-Chloroethoxy)methane	ND	330	ND	ND	ND	0	-	ND	7570	40
11B	bis(2-Chloroethyl) ether	ND	360	ND	ND	ND	0	-	ND	7570	40
12B	bis(2-Chloroisopropyl)ether	ND	360	ND	ND	ND	0	-	ND	7570	56
13B	bis(2-Ethylhexyl)phthalate	ND	630	ND	ND	ND	0	-	ND	7570	45
14B	4-Bromophenyl phenyl ether	ND	120	ND	ND	ND	0	-	ND	7570	37
15B	Butyl benzyl phthalate	ND	630	ND	ND	ND	0	-	ND	7570	42
16B	2-Chloronaphthalene	ND	120	ND	ND	ND	0	-	ND	7570	40
17B	4-Chlorophenyl phenyl ether	ND	260	ND	ND	ND	0	-	ND	7570	
18B	Chrysene	1130	160	ND	ND	ND	0	-	ND	7570	[illegible]
[illegible]B	Dibenzo(a,h)anthracene	ND	630	ND	ND	ND	0	-	ND	0	-
[illegible]B	1,2-Dichlorobenzene	ND	120	ND	ND	ND	0	-	ND	7570	38
[illegible]B	1,3-Dichlorobenzene	ND	120	ND	ND	ND	0	-	ND	7570	35
22B	1,4-Dichlorobenzene	ND	280	ND	ND	ND	0	-	ND	7570	36
23B	3,3'-Dichlorobenzidine	ND	1000	ND	ND	ND	0	-	ND	7570	23
24B	Diethyl phthalate	ND	630	ND	ND	ND	0	-	ND	7570	44
25B	Dimethyl phthalate	ND	630	ND	ND	ND	0	-	ND	7570	41
26B	Di-n-butyl phthalate	ND	630	ND	ND	ND	0	-	ND	7570	79
27B	2,4-Dinitrotoluene	ND	360	ND	ND	ND	0	-	ND	7570	44
28B	2,6-Dinitrotoluene	ND	120	ND	ND	ND	0	-	ND	7570	47
29B	Di-n-octyl phthalate	ND	630	ND	ND	ND	0	-	ND	7570	40
30B	1,2-Diphenylhydrazine	ND	630	ND	ND	ND	0	-	ND	7570	42
31B	Fluoranthene	2880	140	ND	ND	ND	0	-	ND	7570	42
32B	Fluorene	ND	120	ND	ND	ND	0	-	ND	7570	42

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Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
John J. Trela, Ph.D., Acting Director
2 Babcock Place
West Orange, N.J. 07052
201 - 669 - 3960

April 27, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P-552 069 096

Mr. Dennis Krumholz
Riker, Danzig, Scherer, Hyland
& Perretti
Headquarters Plaza
One Speedwell Avenue
CN 1981
Morristown, NJ 07960-1981

Re: Interstate Metals Separating Corporation

Dear Mr. Krumholz:

This letter serves as a response to the correspondence from Ann L. Kruger of J.H. Crow Company dated April 20, 1988. This office has been and will continue to be cooperative in working with all representatives of Interstate Metals Separating Corporation. Discussions related to the recently submitted report, dated March 15, 1988 can be conducted over the phone. These discussions can be conducted with Ted Hayes of the New Jersey Geological Survey or with representatives from this office. I think you would agree that discussions of this kind can be beneficial to all parties involved.

It should be noted that the supplemental report did not sufficiently address the two areas that will have a direct impact on the course of future site remediation. These areas are the proper classification of the contamination and the investigation for contamination on the properties adjacent to the Interstate Metals site.

As was indicated in my letter of February 4, 1988 the metals contamination found at the site must be analyzed for the characteristic of EP Toxicity. This method of analysis will determine whether or not the contamination is a hazardous waste.

If the site exhibits the characteristic of EP Toxicity the encapsulation proposal would have to be reviewed by other agencies at the Federal and or State level. Consequently, a soil sampling plan should be developed that would address this requirement. This plan should be submitted to this office for our comments and or approval.

In conjunction with the additional on site investigation, Interstate Metals should develop a soil sampling plan that would fully delineate the extent of the metals contamination. The reasons for this off site investigation were clearly indicated at the December meeting and in my subsequent letter. The supplemental report did raise several areas of concern regarding this matter. This office's position regarding these topics is as follows:

1) Purpose of Study - To fully delineate the metals contamination in the vertical and horizontal directions. Any site remediation cannot be properly performed until this delineation has occurred.

2) Method of study - Soil sampling techniques similar to those used during the initial investigation. The analysis should also include the characteristic of EP Toxicity. The specifics of this topic can be discussed and amended if necessary after the initial proposal has been submitted.

3) Persons responsible for bearing the costs - The Department of Environmental Protection lists copper, zinc, mercury, lead, and cadmium as hazardous substances. Discharges of these substances have occurred at the site. The contamination of soil at the site is a direct result of these discharges. Pursuant to the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11, Interstate Metals is liable for all costs.

4) Provisions for providing access - Interstate Metals should obtain access agreements from all parties involved.

5) Protection of participants from possible legal action-- The Department of Environmental Protection is unable to provide any protection from possible legal actions.

This office will be more than willing to meet with Interstate Metals representatives when the two areas of major importance are addressed. Be advised that the information provided in the supplemental report has been and will continue to be reviewed in an effort to answer some of the previously raised questions.

Should questions or comments arise, do not hesitate to contact me at 201-669-3960.

Sincerely,

Edward Phillips

Edward Phillips
Environmental Specialist

EP:jap

M E M O R A N D U M

TO: Neil Jiorle, Section Chief
Bureau of Planning and Assessment

FROM: Thomas Shervinskie, HSMS IV
Bureau of Planning and Assessment

SUBJECT: PRESAMPLING ASSESSMENT AT INTERSTATE METALS SEPARATING CORPORATION

On 2, February 1988, a presampling assessment was conducted at the Interstate Metals Separating Corp. located at 241 Dukes Street, Kearny in Hudson County. The Bureau of Planning and Assessment was represented by Robert Beretsky, Robert Kunze, Neil Jiorle, and Thomas Shervinskie. Edward Philips of the Bureau of Field Operations - Metro Region was also present. Representing Interstate Metals were John Crow and Ann Kruger of J.H. Crow and Barry Brown and Morley Cole of Interstate Metals.

Interstate Metals is situated between the Kearny meadows and a residential portion of town. The site is on 8.4 acres at the end of the block of Dukes Street and Tappan Street. Interstate Metals has been at this location since the early 1940's and has been in the metal reclamation and separation business since that time. Prior to 1943 this site was unoccupied.

Robert Beretsky, Robert Kunze, Neil Jiorle and Thomas Shervinskie arrived on site at approximately 0900 hours. Background readings of 1.0 ppm as methane on the OVA (serial number 62334), 0.6 ppm on the HNu (serial number 42446), and 7 micro R/Hr on the Geiger counter were established on Essex Place, west of the site. The HNu was set at a span of 2.0. All readings referred to in this memo are to be read as ppm as benzene on the HNu and ppm as methane on the OVA.

After entering the site and meeting with the Interstate Metals representatives we proceeded to the southern edge of the site near Dukes Street (refer to the attached map). The assessment began at MW #1 and proceeded in an easterly direction around the perimeter of the property. After this, the interior portion of the site was investigated. Table One summarizes all data collected from the monitor wells. There were no inner caps present on any of the monitor wells.

TABLE ONE. MONITOR WELL DATA

Monitor Well	OVA Reading (ppm)	HNu Reading (ppm)	Depth (ft)	Screened at (ft)
1	2	*	14	4-14
2	7	*	14	4-14
3	3	*	12.5	2.5-12.5
4	**	*	12	2-12
5	**	*	12	2-12
6	**	*	40	27-37
7	**	*	25	15-25
8	**	*	12	2-12

*Background
**Low battery - no reading

Two soil gas readings were taken in the immediate vicinity of MW #1. The OVA indicated levels of 1.5 and 2.0 and background readings on the HNu. Near MW #2, soil gas readings of background on the HNu and 1.6 on the OVA were recorded at a depth of approximately 2 feet near the chain-link fence marking the property line. The soil gas reading near MW #3 was taken immediately south of the well at a depth of approximately 2 feet.

Since there are several active process buildings and a pond present at Interstate Metals, soil gas readings were recorded with the OVA and HNu in these areas. All readings on the HNu were at the background level. Due to a low battery level on the OVA only four areas were surveyed with this instrument. These areas were on the east side of the property between the defunct copper processing building and the pond. Soil gas readings at the copper processing building gate were greater than 1000 on the OVA. Situated between this building and the pond is an old, iron, wrecking ball. Two soil gas readings within 10 feet of this were 70 and 300 on the OVA. The sampling depths were between 2 and 3 feet. The last soil gas reading recorded was at the eastern most edge of the pond. The OVA indicated a reading of 700 at approximately 2 feet. Interstate maintains that city sewer lines crossing the property are damaged in this area.

All Geiger counter levels were near background (± 1 micro R/Hr) except in one area centrally located between the Brass Operations building and the Lead Smelting building. The Geiger counter indicated readings as high as 21 micro R/Hr in this area.

ColorpHast pH indicator strips were used to determine the pH in the pond, the lagoon, two discharges to the lagoon (brass operations, zinc operations) and the lead scrubber discharge. The following pH levels were observed: pond - 6; the lagoon - 9; both discharges to the lagoon - 10; and the lead scrubber discharge - 5.

Lastly, in an area east of MW #4, approximately two acres of buried scrap aluminum foil was noted. This foil was buried in the late 1940's. The amount of the foil buried is unknown.

Although on site soil, surface water and ground water sampling has been performed by J.H. Crow Consultants, the Bureau of Field Operations - Metro, in cooperation with the Bureau of Planning and Assessment has requested an additional sampling plan to include EP Toxicity sampling onsite and an offsite sampling plan to determine possible migratory pathways of contaminants from the Interstate Metals Site.

TS:mer

Form ADM-012

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO Spill File DATE 11/24/87
through David Beeman, Spills Supervisor

FROM Ed Phillips - Environmental Specialist EP

SUBJECT Interstate Metals
Case #85-09-09-02M
File #09-07-60
Site Inspection date - 11/13/87

Background:

The John Crow Company has proposed to encapsulate the entire Interstate Metals site, approximately some 8.5 acres. The Crow Company report, as well as DEP testing, has established the levels of metals contamination within the chain link fence area. My investigation was directed at the areas which border the Interstate Metals site. Of particular concern was the open spaces to the north and east of the company property.

Investigation:

Upon my arrival at 1300 hours, I proceeded to walk the northern property border of Interstate Metals. Several pictures of this area were taken. The surface water found within Interstate's fence line extends approximately 50-75 feet beyond the fence in a northeastern direction. From this point, surficial water is confined to a series of channels that run to the north and east. The eastern terminus of these channels is the ridge containing the Conrail railroad tracks. Due to the flooded conditions, the northern terminus was not determined. Many areas of this surficial water contained rainbow sheens. Certain areas were intermittently covered with a white milky film. The direction of flow, if one exists, could not be determined. The surficial contamination was moving away from the Interstate property. This may have been due to the windy conditions occurring at the time of the investigation.

Mounded soil was quite prevalent along the north and northeast property border. The entire area to the north and east is very flat except where these mounds occur. It appears that the mounds were created by surficial dumping or bulldozing.

Prior to my departure from the northern border area, I inspected the parking lots to the west and northwest of Interstate Metals. Surficial flooding, from the pond, extended to the foundation of the building directly west of the Interstate pond. Flooding continued into the lot to the northwest of the pond. The estimated distance was 75-100 feet.

I then proceeded to walk the Conrail tracks to the south of Interstate Metals. There was some surficial flooding southeast of Interstate Metals. The extent was not as extensive as the flooding in the northeastern area. However, the surficial water did transect the fence line.

Mounds of soil were not observed in the area to the southeast. Pictures of the entire site were then taken from the Conrail ridge.

I concluded my investigation at 1335 hours.

Conclusions: Confidential

My investigation on 11-13-87 and laboratory results from the Crow report indicate to this writer that contamination extends beyond the Interstate property border. This conclusion is based upon the following:

1. The mounds of soil found at the northern border seem to indicate dumping has occurred.

2. The extensive flooding conditions may have carried contaminants off site where water levels recede.

3. Soil sample "D," from the Crow report, was taken outside the northern fence line. The levels of contamination were as follows:

Copper	64,000 ppm
Lead	15,800 ppm
Zinc	445,000 ppm
Cadmium	414 ppm

Do these exceedingly high levels decrease immediately after crossing the Interstate property line?

4. Similarly, sample "E" which is located furthest east showed high levels:

Copper	11,800 ppm
Lead	3,180 ppm
Zinc	19,000 ppm
Mercury	63.9

Based upon these four conclusions, I feel a complete off site study should be performed to determine the horizontal extent of contamination. This investigation should be conducted prior to the approval of any remediation proposal.

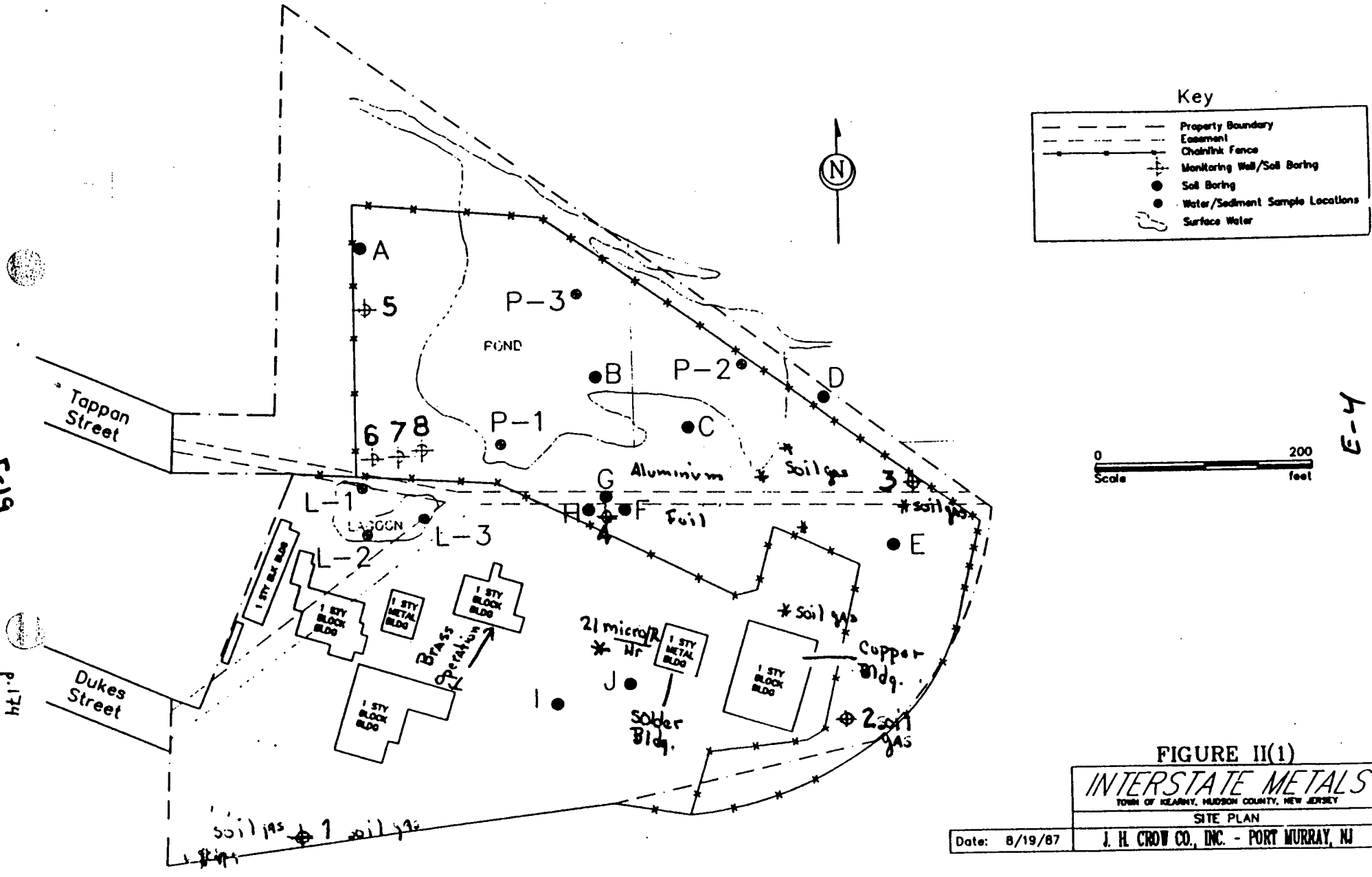


FIGURE II(1)

	INTERSTATE METALS TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY
	SITE PLAN
Date: 8/19/87	J. H. CROW CO., INC. - PORT MURRAY, NJ

The redacted information consists of names, addresses and/or phone numbers of private individuals. Disclosure of this information would constitute a clearly unwarranted invasion of personal privacy and thus is exempt from mandatory disclosure by virtue of Exemption 6 of the FOIA, 5 U.S.C. § 552(b)(6).

Form ADM-012

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO Spill File through Supervisor RB DATE 11/13/87

FROM Ed Phillips - Environmental Specialist EP

SUBJECT Interstate Metals
Case #85-09-19-02M
File #09-07-60
Meeting date 11-09-87

Contact: [redacted] Ex. 6
Former Interstate Metals Employee

Background:

In January of 1987, [redacted] Ex. 6 reported to the Department that mercury tailings were dumped into a field behind the Interstate Metals' plant. He also stated that he was suffering from mercury poisoning. On November 5, 1987 I received a phone call from [redacted] Ex. 6. He was interested in acquiring information concerning the status of the site. He was informed that he could request a file review by writing Tony Cavalier, Metro Region Chief. The following day I called [redacted] Ex. 6 to see if a meeting could be arranged to discuss Interstate Metals. On November 9, 1987 [redacted] Ex. 6 [redacted] Ex. 6 called and indicated that he would be home all day.

Investigation:

At 1315 hours I arrived at [redacted] Ex. 6's home at [redacted] Ex. 6 [redacted] Ex. 6. He indicated that he was an employee of Interstate Metals from July of 1979 to October of 1983 or 1984.

During that time he was a laborer involved in the various metals recovery operations of the company. In our discussion, [redacted] Ex. 6 informed me of the following:

1. The water in the lagoon is periodically discharged so fresh water could be used in the various business operations. This is necessary due to increasing salinity, caused by evaporation, and the increasing metal content caused by normal business operations. Water from the lagoon is discharged into an adjacent manhole (see map) or to the large pond located at the northern portion of the site. The manhole contains discharge pipes which run directly to the lagoon pump.

2. The water from the lagoon is also pumped to the solder recovery building. The water is used in the smoke scrubber operation to eliminate air pollution which would normally occur. The smoke created by the heating of meters is forced

through the water to reduce contaminant levels. The water is located in a below ground pit and an above ground tank. During the process, pressure causes water from the pit to fill the above ground tank. The water level in the pit is maintained by pumping. When the operation is discontinued, overflow occurs. Evidently, the above ground tank holds more water than the pit. Due to the scrubber process, the liquid turns acidic. Mixing sulfides and water creates sulfuric acid. Therefore, the surficial overflow is acidic.

3. The lagoon was periodically cleaned by a backhoe. The material was dumped in an area directly north of the lagoon. It was then spread over the northern portion of the site.

4. The surface runoff mentioned in item 2 was collected in a pond adjacent to the building that was used for copper reclamation. A pump located inside this building periodically empties this pond to an area near the adjacent manhole. Flow sometimes infiltrates the manhole itself.

5. Mercury operations left mercury contaminated residues inside the mercury recovery building. In the center of the building, a groundwater pump was in place to provide water for the operation. Mercury tailings are located within this pump site. Tailings were also located within the building in large boxes which ran around the inside perimeter. Tailings from this operation were also piped to an area north of the solder building. At this site, the tailings were merely dumped for dispersal.

6. Dumping did occur outside the area that is fenced at the present time. The dumping involved tailings from various processes. Fly ash collected at the solder recovery building was also dumped.

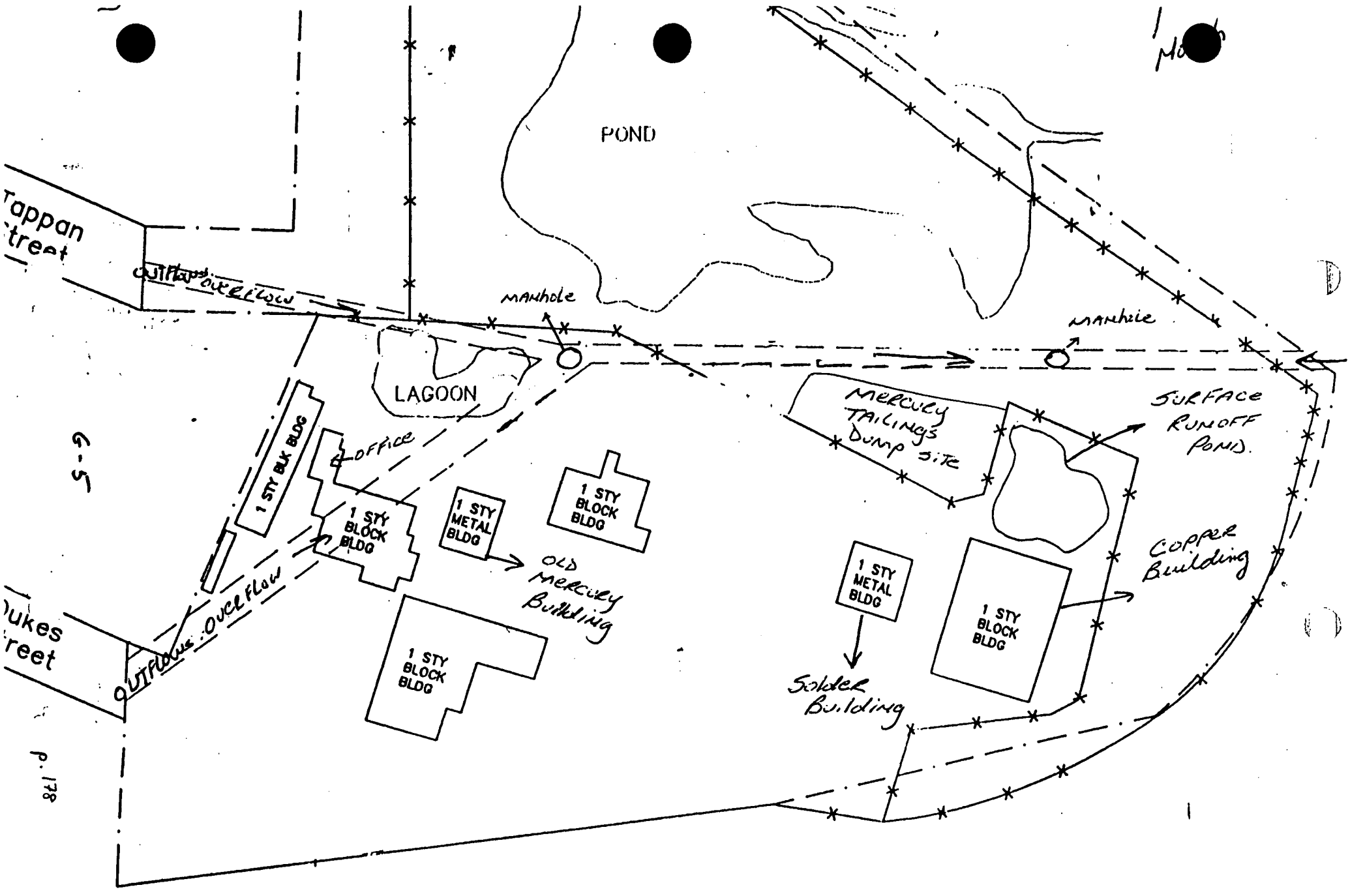
7. Small pieces of scrap from the solder recovery operation was stockpiled on site. When it was profitable to do so, these scraps were refired to recover more solder. Smoke scrubbers were not used for this process. The refiring of the scrap occurred at night to mask the air pollution created by the process.

8. To recovery brass to a further degree, a similar process occurs in the building connected to the company office. Small silt sized particles are dried at night. Again to mask the air pollution created. The dried material is drummed and sold for profit.

9. Sewage did leak out of the manhole near the copper building. This occurred periodically.

10. The large pond, on the northern portion of the site, was periodically drained when levels became exceedingly high. The pump located near the lagoon was used. The manhole near the lagoon received the water.

Our discussion concluded at 1435 hours.


POND
Tappan Street
Dukes Street
OUTFLOW OVERFLOW
OUTFLOW OVERFLOW
MANHOLE
MANHOLE
LAGOON
1 STY BLK BLDG
OFFICE
1 STY BLOCK BLDG
1 STY METAL BLDG
1 STY BLOCK BLDG
OLD MERCURY BUILDING
1 STY BLOCK BLDG
MERCURY TAILINGS DUMP SITE
SURFACE RUNOFF POND
COPPER BUILDING
1 STY METAL BLDG
1 STY BLOCK BLDG
SOLDER BUILDING

G-5

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Let's protect our earth

SEP 16 1987

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT
John J. Trela, Ph.D., Director
401 East State St.
CN 028
Trenton, N.J. 08625
609 - 633 - 1408

MEMORANDUM

TO: Steve Borgianini, Chief
Bureau of Planning and Assessment

THROUGH: Anthony J. Cavalier, Region Chief
Bureau of Field Operations - Metro Regional Office

THROUGH: David J. Shotwell, Chief
Bureau of Field Operations

FROM: [redacted] Environmental Specialist EP
Bureau of Field Operations - Metro Regional Office

SUBJECT: Interstate Metals Separating Corporation
241 Dukes Street
Kearny, NJ

DATE: September 15, 1987

Purpose of Memo

Request for a Preliminary Assessment to be performed by the Bureau of Planning and Assessment.

Background

Interstate Metals has been under scrutiny of this Department for a number of years. The major components of contamination are metals; specifically mercury, lead, copper, zinc, chromium and cadmium. These metals were tested for by John H. Crow Company, Inc., hired as a consultant by Interstate, during the past year. Results indicate that contamination exists over a large portion of the eight acre site. Contamination values for these metals are frequently in the thousands of mg/kg range. Furthermore, the John H. Crow report indicates that the contamination exists to a depth of 12 feet in many areas.

Please contact me at (201) 669-3960 concerning this case.

EP:lmc

[redacted] H-1

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Form VSC-006
8/86

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

TRENTON DISPATCH NOTIFICATION REPORT

CASE NO. 87 (YR) 01 (MO) 22 (DAY) TD 1045 (CASE NO.)

DATE 01 . 22 . 87 TIME (Military) 10:45 REC'D BY Cooke 87 01 22 PHONE NO. 292-7172

INCIDENT REPORTED BY:

NAME [redacted] Ex. 6 PHONE [redacted] Ex. 6

STREET [redacted] Ex. 6

CITY STATE [redacted] Ex. 6

AFFILIATION/TITLE Private Citizen

RECEIVED JAN 22 A 10:44 ... SERVICES

NATURE OF INCIDENT:

EMERGENCY: ___ FIRE ___ EXPLOSION ___ AIR REL ___ SPILL ___ MVA ___ DERAILMENT

COMPLAINT: ___ SMOKE/DUST ___ ODORS ___ SEWAGE X OTHER (Specify) Illegal Dumping (Noise, Illegal Dumping, Fish Kill)

NOTIFICATION: (Specify) (Equipment Start-up/Shutdown, Equipment Failure/Upset, etc.)

INCIDENT LOCATION:

NAME (Site) Interstate Concentrating Plant ___ UNK PHONE UNK

STREET 275 Duke Street (9 Acre Site)

CITY Kearney COUNTY Hudson STATE NJ ZIP CODE

STATUS AT SCENE OF INCIDENT (Mitigative Actions): Company processed Mercury for 15 years. pumping tailings into Field behind Office Building. Complaintant diagnosed as possible victim of Mercury Poisoning. Worked at Site 4 1/2 years. Terminated 3 years ago. WILL MAKE BERRY CREEK LOOK LIKE PICNIC GROUND. DATE OF INCIDENT: ON GOING SEVERAL YEARS

ANYONE INJURED	X YES ___ NO Possibly)	PUBLIC EXPOSURE	___ YES X NO
ANYONE HOSPITALIZED	___ YES X NO	POLICE AT SCENE	___ YES X NO
AREA EVACUATED	___ YES X NO	FIREMAN AT SCENE	___ YES X NO
CONTAMINATION OF	___ AIR X LAND ___ WATER	ASSISTANCE REQ.	X YES ___ NO
POTABLE WATER SOURCE	___ YES ___ NO	WIND DIRECTION	
RECEIVING WATER		WIND SPEED	

LOCATION TYPE ___ CITY X INDUSTRIAL ___ RURAL ___ SENSITIVE POPULATION (Hospital, School, Nursing Home)

SOURCE OF INCIDENT/PROBLEM: X KNOWN ___ UNKNOWN

COMPANY NAME Interstate Concentraing Plant PHONE UNK

CONTACT Barry Brown TITLE Owner

STREET 275 Duke Street

CITY Kearney COUNTY Hudson STATE NJ ZIP CODE

IDENTITY OF SUBSTANCE(S) SPILLED, RELEASED, DISCHARGED, ETC.: X KNOWN ___ UNKNOWN

NAME OF SUBSTANCE (Gas, Liquid, Solid) Mercury Oxide/Sulfuric Acid

AMOUNT RELEASED/SPILLED UNK A/P/E

SUBSTANCE CONTAINED ___ YES X NO ___ UNKNOWN

TYPE OF RELEASE/SPILL X TERMINATED ___ CONTINUOUS ___ INTERMITTENT

OFFICIALS NOTIFIED: (A-310) ___ BY FACILITY ___ BY NJDEP

USEPA:	PERSON	PHONE	DATE
LOCAL HEALTH DEPT.:	PERSON	PHONE	DATE
LOCAL MUNIC. (Fire/Police)	PERSON	PHONE	DATE

INCIDENT REFERRED TO: X DEQ ___ DWR ___ DSWM ___ DHSM X DHWM ___ DOH ___ F&G

REGION: ___ NORTHERN X METRO ___ CENTRAL ___ SOUTHERN

1. PERSON Ray Dulkis Reg 1 PHONE 669-3951 DATE 1-22-87 TIME 10:59
2. PERSON Frank Gagliano Reg 2 PHONE 426-0799 DATE 1-22 87 TIME 11:05
3. PERSON David Beeman DHWM-M PHONE 669-3960 DATE 1-22-87 TIME 11:12

COMMENTS Reg. requested DHM-M notify Haz Site Mitigation

COPIES: White - Division Yellow - Trenton Dispatch Pink - Other

The redacted information consists of names, addresses and/or phone numbers of private individuals. Disclosure of this information would constitute a clearly unwarranted invasion of personal privacy and thus is exempt from mandatory disclosure by virtue of Exemption 6 of the FOIA, 5 U.S.C. § 552(b)(6).

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Water Resources
CN-029
Trenton, New Jersey 08625

FOR STATE USE ONLY	
UST #-	
	YES
CK. IN.	☐
AMT.	☐
AUTH.	☐
SP. ROUTE	☐
SITE PLN.	☐
SIGN.	☐
COMCODE	

UNDERGROUND STORAGE TANK REGISTRATION QUESTIONNAIRE

Bureau of Ground Water Quality Management
Underground Storage Tank Section
(609)984-9736

COMPLIANCE WITH THIS REGISTRATION WILL MEET ALL REGISTRATION REQUIREMENTS OF THE FEDERAL LAW. P.L. 93-616, THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984, SUBTITLE 1, SECTIONS 9001-9010.

General Facility Information

1. Facility name: INTERSTATE METAL SEPARATING CORP
2. Facility location: 275 DUKES STREET (NUMBER AND STREET)
   KEARNY (CITY OR MUNICIPALITY)
   HUDSON (COUNTY) NJ (STATE) 07032 (ZIP CODE)
3. Owner's mailing address: 275 DUKES STREET (NUMBER AND STREET)
   KEARNY (CITY OR MUNICIPALITY)
   HUDSON (COUNTY) NJ (STATE) 07032 (ZIP CODE)
4. Owner's name: BARRY BROWN
5. Contact person (Facility Operator) BARRY BROWN (PERSON OR TITLE)
6. Contact telephone number: 201 (AREA CODE) 998 (EXCHANGE) 7660 (NUMBER)
7. Total number of facility underground storage tanks: 0005 (Complete Questions 12 thru 33) for each tank
8. Total facility underground storage tank capacity (gallons): 0013000
9. Type and status of owner (mark all that apply).

A. ☒ CURRENT B. ☐ FORMER C. ☐ STATE OR LOCAL GOVERNMENT D. ☒ PRIVATE OR CORPORATE E. ☐ OWNERSHIP UNCERTAIN F. ☐ FEDERAL GOVT. (GSA FACILITY I.D. NUMBER)

10. Two copies of a site plan are submitted with this registration. A. ☒ YES B. ☐ NO

Submit two (2) copies of SITE PLAN showing facility or property boundary, buildings and the location of ALL underground storage tanks. EITHER, an existing engineering site plan, if available, OR a neat and legible hand-drawn sketch of the site may be submitted. In either case the site plan or sketch MUST show the location and distances that tanks, buildings, and dispensers are from the facility's property boundary. Include all tanks that are operating or existing, (E); abandoned, (A); or closed, (C). Each underground tank on the site plan or sketch shall be numbered in accordance with the instructions for question 12. The number assigned to a tank on the site plan or sketch MUST match and be identical to the tank identification number assigned to that tank on this form.

J-1 (p. 181)

INCLUDE FACILITY NAME, OWNER'S NAME, FACILITY ADDRESS AND TELEPHONE NUMBER ON ALL SITE

11. All underground tanks used after January 1, 1974 including those taken out of operation, **(UNLESS THE TANK WAS REMOVED FROM THE GROUND)** must be included in this registration. All in-ground tanks shall be reported as underground tanks on this questionnaire regardless of their current status; Existing, E; Abandoned, A; or Closed C.

SPECIFIC TANK INFORMATION

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
2. Tank Identification Number	A1	E2	E3	E4	E5
3. CASRN Number (Hazardous Substances Only)					
4. Tank Age (Years)	40	40	40	40	40
5. Tank Size (gallons)	5000	2000	2000	2000	2000
6. Tank Contents (MARK ONE X)					
A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☐	☒	☐	☐	☒
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
K. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
L. Aviation fuel	☐	☐	☐	☐	☐
M. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
N. Other; Please Specify					
7. Tank and Piping Construction (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Bare steel	☒ ☒	☒ ☒	☒ ☒	☒ ☒	☒ ☒
B. Carbon steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Stainless steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Aluminum	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Polyvinyl chloride	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Concrete	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. Bronze	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. Earthen walls	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
J. Fiberglass reinforced plastic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
K. Fiberglas-clad steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
L. Painted/asphalt steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
M. Vaulted	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
N. Composite	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
P. Iron (cast or ductile)	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
R. Non-metallic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
S. Other; Please Specify					
8. Tank and Piping Structure (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Single wall	☒ ☒	☒ ☒	☒ ☒	☒ ☒	☒ ☒
B. Double wall	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Manway in tank	☐	☐	☐	☐	☐
9. Internal Tank and Piping Lining (MARK ONE X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Rubber	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Epoxy	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Alkyd	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Phenolic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Glass	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Clay	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. None	☒ ☒	☒ ☒	☒ ☒	☒ ☒	☒ ☒

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Tank I.D. No.	TANK NO. A1		TANK NO. A2		TANK NO. A3		TANK NO. A4		TANK NO. A5	
0. Tank and Piping Lining installed (MARK ONE X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. At purchase of tank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Retrofitted	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
1. Secondary containment (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Liner	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Vault	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Double wall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. None	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
E. Other, Please Specify										
2. External Type/Application of Cathodic Protection (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Wrapped	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Sprayed	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Sacrificial anode	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Impressed current	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. None	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
F. Other, Please Specify										
3. Monitoring/detection method (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Automatic sampling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Manual sampling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Ground water monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. System in secondary containment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. System outside backfill	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. System within piping (piping leak detector)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. None	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Type of monitoring/detection system (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Continuous	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Event activated	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Audio	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Visual	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. Electric sensor	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. Stock/inventory control (manual)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. Stock/inventory control (electronic)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Tile drain	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. Vapor sniff wells	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
K. Internal inspection	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
L. Other, Please Specify										
M. None	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Testing history recorded (MARK ALL THAT APPLY X)										
A. Yes	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. No	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
C. Test Result (MARK IF LEAKING NOW)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Leak/spill occurrence (MARK ALL THAT APPLY X)										
A. Within the past 1 year	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Within the past 1 to 5 years	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. More than 5 years ago	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. No Records	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

Tank I.D. No.	TANK NO. A1	TANK NO. E2	TANK NO. A3	TANK NO. A4	TANK NO. E5
27. Tank Status (MARK ONE X) A. Active (operational)	☐	☒	☐	☐	☒
B. Inactive (non-operational)	☐	☐	☐	☐	☐
C. Closed (temporarily out-of-service)	☐	☐	☐	☐	☐
D. Closed (permanently out-of-service)	☐	☐	☐	☐	☐
E. Abandoned, in place	☒	☐	☒	☒	☐
F. Abandoned, in place, filled only	☐	☐	☐	☐	☐
G. Abandoned, in place, sealed only	☐	☐	☐	☐	☐
H. Abandoned, in place, filled and sealed	☐	☐	☐	☐	☐
J. Seasonal	☐	☐	☐	☐	☐
K. Prior retrofitting work, Please Specify					
L. Other, Please Specify					
28. Spill recovery system on-site (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☒	☒	☒	☒	☒
29. Overfill protection (tank only) (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☒	☒	☒	☒	☒
30. Emergency shut-off mechanisms (dispensers) (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☒	☒	☒	☒	☒

SEE BELOW

If boxes 27 E, F, G or H above have been answered - answer questions 31, 32 and 33 below.

31. Substance last used in tank (MARK ONE X) A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☒	☐	☒	☒	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
J. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
K. Aviation fuel	☐	☐	☐	☐	☐
L. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
M. Other, Please Specify					
32. Estimated date last used (month/year)	0476 Mo. Yr.	Mo. Yr.	0476 Mo. Yr.	0476 Mo. Yr.	Mo. Yr.
33. Estimated quantity (gallons) left in tank	0		0	0	

OWNER OR OWNER'S AGENT CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

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John H. Crew, Ph.D.
(SIGNATURE)

John H. Crew
(PRINT OR TYPE NAME)

President J.H. Crew Co., Inc.

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ADM-012

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO File

FROM Kevin Krause DATE January 10, 1986

SUBJECT Meeting with interstate Metals

At 1000 hrs on 1/8/86, a meeting was held at Interstate Metals to discuss heavy metal contamination at their site.

In attendance:

John Sarnas	-	Kearny Health Dept.
Morley Cole) Barry Brown)	-	Interstate Metals
Kevin Krause	-	NJDEP-DWM

The following additional fact was revealed during this meeting. Mr. Brown mentioned that in the 1960's Lou Serino Trucking under orders from the State removed illegally deposited debris and garbage from the unfenced lot adjacent to the facility. Brown claims that Lou Serino Trucking filled in the site from various Serino jobs. When asked for documentation of this claim Brown stated he had none.

My intentions to prepare a directive letter based on my sample results from 1/85 were relayed to Brown and Cole. After much discussion all parties present decided that the following steps would be taken as soon as the weather permits.

1) Two soil samples taken by the writer would be taken to a IMSC selected water quality certified lab and analyzed for EP Toxic metal parameters.

   Every effort to obtain samples from the same locationss as 1/85 will be made. Surface water and water well on site will be analyzed for priority pollutants.

2) If sample results indicate non-hazardous classification, the remaining steps will be implemented.*

3) As soon as the soil thaws, IMSC will hire a contractor to excavate soil to a particular depth possibly 2'. All excavated soils will be removed to a registered solid waste facility via a registered hauler.

4) Upon completion of the excavation, a sampling phase will commence. Samples will be analyzed for total metals as well as EP toxicity metals.

5) If sample results are below current ECRA guidelines for heavy metal contamination removal will be completed. If samples are above acceptable levels, excavation will continue.

*If the sample taken in step 1 are classified as hazardous a sampling plan will be prepared to determine the extent of contamination.

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
CN 028, Trenton, N.J. 08625

ARWAN M. SADAT, P.E.
DIRECTOR

JORGE H. BERKOWITZ, PH.D.
ADMINISTRATOR

MEMORANDUM

August 20, 1985

TO: Christine Altomari, Site Manager, BSM

FROM: Jonathan Savrin, Research Scientist, BEERA

SUBJECT: Interstate Metals, Review of Soil Data

Introduction

Based on the data on surface soil that were sampled on June 26, 1985, a telephone conversation with Mr. McDonald of the Hudson Regional Health Commission on July 24, and a telephone conversation with Tom Brady of the Division of Waste Management on August 9, 1985, I believe that high concentrations of contaminants in the soil surrounding the fenced-in area of the Interstate Metals facility in Kearny may pose a significant risk to the public health. The Interstate Metal facility is involved in the separation and extraction of metals from brass tailings, gas meters, etc. The Hudson Region Health Commission became aware of the possible presence of metallic contamination in June 1984, when they received a complaint from an employee about mercury on the grounds in the fenced-in area of the facility. NJDEP sampled the fenced-in area of the plant for mercury during the Summer of 1984.

The current sampling was conducted on the company's property outside of the fenced-in area. The County was concerned about the risk that was posed in this area since it is heavily used by dirt bikers (whose activities would also increase the concentrations of contaminated dust) and as an access for walks in the Meadowlands.

Soil Samples

The soil data indicates that concentrations of total chromium and mercury in the soils are well above background. These concentrations, along with expected background concentrations, are listed in Table I. Depending on their

state, both of these metals can be highly toxic and/or highly mobile.

The submitted soil data indicates that a potential risk to the public health might exist but fails to delineate the extent of the contamination. Before considering remedial implementation measures, it is important to take soil samples at various depths and at various locations to delineate the vertical and horizontal extent of contamination. Groundwater and surface water also should be sampled. Since hexavalent chromium is a much more toxic than trivalent chromium, both hexavalent and total chromium should be analyzed.

Since only chromium and mercury were analyzed, the full spectra of contaminants that are present is unknown. In a factory that was involved in metal separation, it is highly probable that high concentrations of other metals and solvents are also present. It is therefore important to perform priority pollutant plus forty analyses on some of the soil and water samples.

High concentrations of mercury were found in the NJDEP soil samples from the fenced-in area of the plant in 1984. Concentrations of mercury in the three surface samples ranged from 12.7 ppm to 44.1 ppm. 7.92 ppm of mercury was also found at a depth of 18-30 inches. The presence of mercury in the fenced-in area indicates both that the plant is a source of the contamination and that additional sampling of the fenced-in area is also warranted.

Conclusion

The data from the four surface soil samples that were submitted to HSMA indicates that there is chromium and mercury contamination. The type of operation of the Interstate Metal Company and contaminated soil within their plant indicate that the plant is the source of the contamination. Additional sampling and priority pollutants plus forty scans are needed to delineate the extent of the pollution and the actual risk to the public health that is posed by the pollutants.

JS/jo
cc: Dr. Jorge Berkowitz
Dr. Merry Morris
Dr. Richard Dime
Rob Predale
John Hazen

Table I - Concentrations of Chromium and Mercury in Surface Soil Samples

Metals	Sample Number	Sample Concentrations (1)	Approx. Background Concentrations (1)
Chromium	5359	1,470	100
	5360	263	100
	5361	134	100
	5362	68.1	100
Mercury	5359	45.3	0.1
	5360	44.1	0.1
	5361	43.3	0.1
	5362	11.2	0.1

(1) All concentration values are in parts per million.

COSTINTINO

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY
BUREAU OF ENVIRONMENTAL LABORATORIES
380 SCOTCH ROAD. TRENTON, N. J. 08629

July 1, 1985

Mr. R. Ferraiuolo
Hudson Regional Health Commission
313 Harrison Avenue
Harrison, New Jersey 07029

Dear Mr. Ferraiuolo:

Enclosed are the analytical results of four soil samples submitted to the Bureau of Environmental Laboratories, L.C. Nos. 5359-62, Field Sample Nos. 01169-72.

Thank you for submitting your samples to our laboratories. We hope we can be of continued service to you in the future. If you have any questions regarding these samples, please call me at 609-292-9271.

Sincerely,

Eileen D Hotte

Eileen D. Hotte, Ph.D.
Chief

EDH:jb
Enclosures

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HUDSON REGIONAL HEALTH COMMISSION

Let's Protect Our Earth

313 HARRISON AVE. HARRISON, N.J. 07029

TELEPHONE: (201) 485-7001-2

July 3,1985

'ONNE
ISEY CITY
BOKEN
EHAWKEN
ST NEW YORK
TTENBERG
RTH BERGEN
CAUCUS
ARN
RRISON
ST NEWARK
ION CITY

Jorge H. Berkowitz, Administrator
Division of Waste Management
32 E. Hanover Street
Trenton, New Jersey 08628

Re: Interstate Metals, 275 Duke Street,
Kearny, New Jersey

Dear Jorge,

As per our telephone conversation of July 3,1985, I have attached herewith the lab report on soil samples taken at the above referenced location and pertinent investigatory reports.

In that the lab analysis has clearly disclosed excessive levels of mercury and chromium, I am requesting your assistance in implementing remedial measures. To this end I wish to convene a meeting as soon as possible with a representative of your office and the Health Officer of Kearny so that appropriate containment and abatement strategies can be discussed.

Thank you for your cooperation.

Sincerely,

Robert Ferraiuolo,
Director

RF/jg

Enclosure

cc: Board of Commissioners

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)SON REGIONAL HEALTH CO. ION
313 Harrison Ave.
HARRISON, N.J. 07029

FIELD INVESTIGATION

SOURCE Interstate Me ls Company

LOCATION 275 Duke Street, Kearny, N.J. 07032

MAILING ADDRESS

PERSON(S) INTERVIEWED M. Cole, V.P.; Brown, Pres.
Ed Grosvenor, H.O., John Sarnas, H.O

Premises Entered / Time In ____ a.m. p.m. Out ____ a.m. p.m.

N.C.A. ___ V.N. ____ Specific

COMPLAINT #

DATE 6/14/85 TIME 9:10

CHAPTER REF. 17

SINGLE ____ MULTIPLE ____

CLIMATIC CONDITIONS

Clear x Cloudy ___ Fog ___
Rain ___ Snow ___

WIND: Vel 8 Temp 68°
Dir SW

OBSERVATIONS:

Took 4 soil samples (01169 thru 01172) on property of company located outside of fenced in area. Samples were delivered to the Bureau of Environmental Labs, Trenton, N.J. 1:30 p.m., 6/14/85. Test results may take up to a month.

RECOMMENDATIONS:

INVESTIGATED BY: M.R. MacDonald

FURTHER ACTION:

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QUA[illegible]TIVE RESULTS & QUALITY ASS[illegible] DATA

3. CONTROL #: 5359 SAMPLE TYPE: Soil FIELD SAMPLE #: 01169

PORT DATE: 6/26/85 SECTION SUPERVISOR: [illegible] LAB SUPERVISOR: [illegible]

PLICATE LC#: 5362 MATRIX SPIKE LC#: 5359

	RESULTS		QUALITY CONTROL DATA					
	SAMPLE DATA			LAB. DUPLICATE			MATRIX SPIKE	
IMARY AND CONDARY* METALS[1] RAMETER	SAMPLE CONCEN. ug/g	MDL[3] ug/g	~~METHOD~~ Reagent BLANK ug/ml	FIRST	SECOND	% DIFF.	CONCEN. ADDED ug/g	% RECOV.
SENIC								
RIUM								
DMIUM								
ROMIUM	1,470	5.0	<0.05	55.2		10.5	60	NA
PPER*	(100)							
ON*								
AD								
NGANESE*								
RCURY	45.3	0.1	<0.001	14.5		12.9	53	110
LENIUM	(.1)							
LVER								
DIUM*								
NC								
OTHER METALS[2]								
UMINUM								
TIMONY								
RYLLIUM								
LCIUM								
BALT								
GNESIUM								
LYBDENUM								
CKEL								
TASSIUM								
ALLIUM								
N								
NADIUM								

[1]Methods Reference: EPA-600/4-79-020, revised March, 1983 for water and wastewater.
EPA SDW-846, second edition, July, 1982 for soil, sediment and sludge.

[2]Methods Reference: EPA FR Dec. 3, 1979 for ICP results.

[3]B.E.L. established Method Detection Limits

BUREAU OF ENVIRONMENTAL LABORATORIES
QUANTITATIVE RESULTS & QUALITY ASSURANCE DATA

. CONTROL #: 5360 SAMPLE TYPE: Soil FIELD SAMPLE #: 01170
ORT DATE: 6/26/85 SECTION SUPERVISOR: [illegible] LAB. SUPERVISOR: [illegible]
LICATE LC#: 5362 MATRIX SPIKE LC#: 5359

	RESULTS		QUALITY CONTROL DATA					
	SAMPLE DATA			LAB. DUPLICATE			MATRIX SPIKE	
MARY AND ONDARY* METALS[1]	SAMPLE CONCEN. ug/g	MDL[3] ug/g	~~METHOD~~ Reagent BLANK ug/ml	FIRST	SECOND	% DIFF.	CONCEN. ADDED	% RECOV.
AMETER								
ENIC								
IUM								
MIUM								
OMIUM	263	5.0	<0.05	55.2		10.5	60	NA
PER*								
N*								
D								
GANESE*								
CURY	44.1	0.1	<0.001	14.5		12.9	53	110
ENIUM								
VER								
IUM								
C*								
THER METALS[2]								
MINUM								
IMONY								
YLLIUM								
CIUM								
ALT								
NESIUM								
YBDENUM								
KEL								
ASSIUM								
LLIUM								
ADIUM								

Methods Reference: EPA-600/4-79-020, revised March, 1983 for water and wastewater.
EPA SDW-846, second edition, July, 1982 for soil, sediment and sludge.

Methods Reference: EPA FR Dec. 3, 1979 for ICP results.

[3]B.E.L. established Method Detection Limits

AB. CONTROL #: 5361 AMPLE TYPE: Soil SAMPLE #: 1171

EPORT DATE: 6/26/85 SECTION SUPERVISOR: [illegible] LAB. SUPERVISOR: [illegible]

UPLICATE LC#: 5362 MATRIX SPIKE LC#: 5359

	RESULTS		QUALITY CONTROL DATA					
	SAMPLE DATA			LAB. DUPLICATE			MATRIX SPIKE	
RIMARY AND ECONDARY* METALS[1] ARAMETER	SAMPLE CONCEN. ug/g	MDL[3] ug/g	~~METHOD~~ BLANK ug/ml	FIRST	SECOND	% DIFF.	CONCEN. ADDED	% RECOV.
RSENIC								
ARIUM								
ADMIUM								
HROMIUM	134	5.0	<0.05	55.2		10.5	60	NA
OPPER*								
RON*								
EAD								
ANGANESE*								
ERCURY	43.3	0.1	<0.001	14.5		12.9	53	110
ELENIUM								
ILVER								
ODIUM*								
INC*								
OTHER METALS[2]								
LUMINUM								
NTIMONY								
BERYLLIUM								
CALCIUM								
COBALT								
MAGNESIUM								
MOLYBDENUM								
NICKEL								
POTASSIUM								
THALLIUM								
TIN								
VANADIUM								

[1]Methods Reference: EPA-600/4-79-020, revised March, 1983 for water and wastewater.
EPA SDW-846, second edition, July, 1982 for soil, sediment and sludge.

[2]Methods Reference: EPA FR Dec. 3, 1979 for ICP results.

[3]M.E.L. established Method Detection Limits

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BUREAU OF ENVIRONMENTAL LABORATORIES
QUAN TIVE RESULTS & QUALITY ASSU DATA

CONTROL #: 5362 SAMPLE TYPE: Soil FIELD SAMPLE #: 1172
ORT DATE: 6/26/85 SECTION SUPERVISOR: ~~LAB.~~ SUPERVISOR:
LICATE LC#: 5362 MATRIX SPIKE LC#: 5359

	RESULTS		QUALITY CONTROL DATA					
	SAMPLE DATA			LAB. DUPLICATE			MATRIX SPIKE	
MARY AND CONDARY* METALS[1]	SAMPLE CONCEN. ug/g	MDL[3] ug/g	~~METHOD~~ Reagent BLANK ug/ml	FIRST	SECOND	% DIFF.	CONCEN. ADDED	% RECOV.
LAMETER								
SENIC								
RIUM								
DMIUM								
ROMIUM	68.1	5.0	<0.05	55.2		10.5	60	NA
PPER*								
ON*								
AD								
NGANESE*								
RCURY	11.2	0.1	<0.001	14.5		12.9	53	116
LENIUM								
LVER								
DIUM*								
NC*								
OTHER METALS[2]								
UMINUM								
TIMONY								
RYLLIUM								
LCIUM								
BALT*								
GNESIUM								
OLYBDENUM								
CKEL								
OTASSIUM								
ALLIUM								
IN								
ANADIUM								

[1]Methods Reference: EPA-600/4-79-020, revised March, 1983 for water and wastewater.
EPA SDW-846, second edition, July, 1982 for soil, sediment and sludge.

[2]Methods Reference: EPA FR Dec. 3, 1979 for ICP results.

[3]B.E.L. established Method Detection Limits

p. 195

Hudson Regional Health Commission
313 Harrison Ave.
Harrison, N.J. 07029

FIELD INVESTIGATION

FIELD INVESTIGATION

SOURCE Interstate Metals

LOCATION 275 (No.) Duke St (Street) Kearny (Municipality)

MAILING ADDRESS

PERSON(S) INTERVIEWED Mr. B. Brown — Pres (Title)
Mr. M. Cole — VP (Title)

☐ PREMISES ENTERED / TIME IN 9:30 a.m. p.m. OUT 3:00 a.m. p.m.
☐ N.C.A. ☐ V.N.# SPECIFIC

COMPLAINT # 295 FI #
DATE 6/21/84 TIME 10:30 a.m. p.m.
CHAPTER REF.
☐ SINGLE ☐ MULTIPLE

CLIMATIC CONDITION:
☐ Clear ☐ Cloudy ☐ Fog
☐ Rain ☐ Snow

WIND: Vel. TEMP.
Dir.

OBSERVATIONS Mr. Tom Brady + Wayne Howitz, DEP Inspectors met Complainant 9:30 A.M. @ HRHC office. Information was obtained on where test boring should be made.

We entered plant @ 10:30 and firm was very cooperative, even obtaining old records from their vault to assist the inspection. Firm started in business around 1942 and was processing mercury for GAF of Linden + others between 1963 to 1967 by using a bore mill and table separation operation. There was strict accountability in the amount received and the amount of residue and recovered mercury that was returned. Material was received in 20 gallon drums - usually 4-12 at a time. Efficiency of operation was estimated to be 99%.

On November 4, 1981 the final truck load of mercury contaminated material amounting to 1,070,000 lbs was shipped out to SCA via Curtech Transportation. This clean up was recommended via their Consultant Max Frankel and conducted at their expense w/o any orders to do so.

RECOMENDATIONS Do to this, they felt secure that all contaminated material was removed. However, 6 test borings taken showed evidence of mercury contamination

INVESTIGATED BY: M. R. MacDonald (signed) Sr. Insp. (title)

ASSISTED BY: (signed) (title)

PROCESSED FOR FURTHER ACTION Super. Specific Date

APPROVED B

(p. 196)

M-8

HAZARDOUS WASTE INVESTIGATION

Inspector: Mike Nalbone Date: 5/14/81

Location: Interstate Metals Separating HW/EF 10-69

St: Duke St.

Town: Kearny

County: Hudson

Lot: Block:

Origin of Complaint:

Complaint: Samples to be taken for a representative analysis of the waste pile stored on site.

Findings:

On 5/14/81, Wayne Howitz and I visited International Metals Separating in Kearny, NJ. We spoke with Mr. Brown, supervisor, and Mr. Cole, vice president, regarding the waste pile on site. (Note: this waste pile according to IMS has minimal amounts of mercury so they are applying for landfill disposal.) We indicated to Mr. Cole that we were specifically here on site to take a more representative sample of the waste pile. I explained that since those samples which were taken previously were surface samples, and we were now interested in bore samples.

Mr. Brown and Mr. Cole were bojective about the situation since we did not notify them that we were visiting the site. They then siad that we could sample the pile of material. Mr. Brown showed the pile of dirt material to Wayne and me. Mr. Brown was notified at this time that we would be taking approximately four samples and he would get the (C) sample from each.

Wayne and I took sample #1 at approximately 11:50 AM and is designated as WH022. The sample was taken at a depth of 20" below the surface (see sketch). Sample #2 was taken at approximately 12:15 PM and is designated as WH023. The sample was taken at a depth of 20" below the surface (see sketch). Sample #3 was taken at approximately 12:30 PM and is designated as WH024. This sample was taken at a depth of 17" below the surface. The last sample, sample #4 was taken at approximately 12:55 PM and is designated as WH024 (see sketch). This sample was taken at a depth of 12" below the surface.

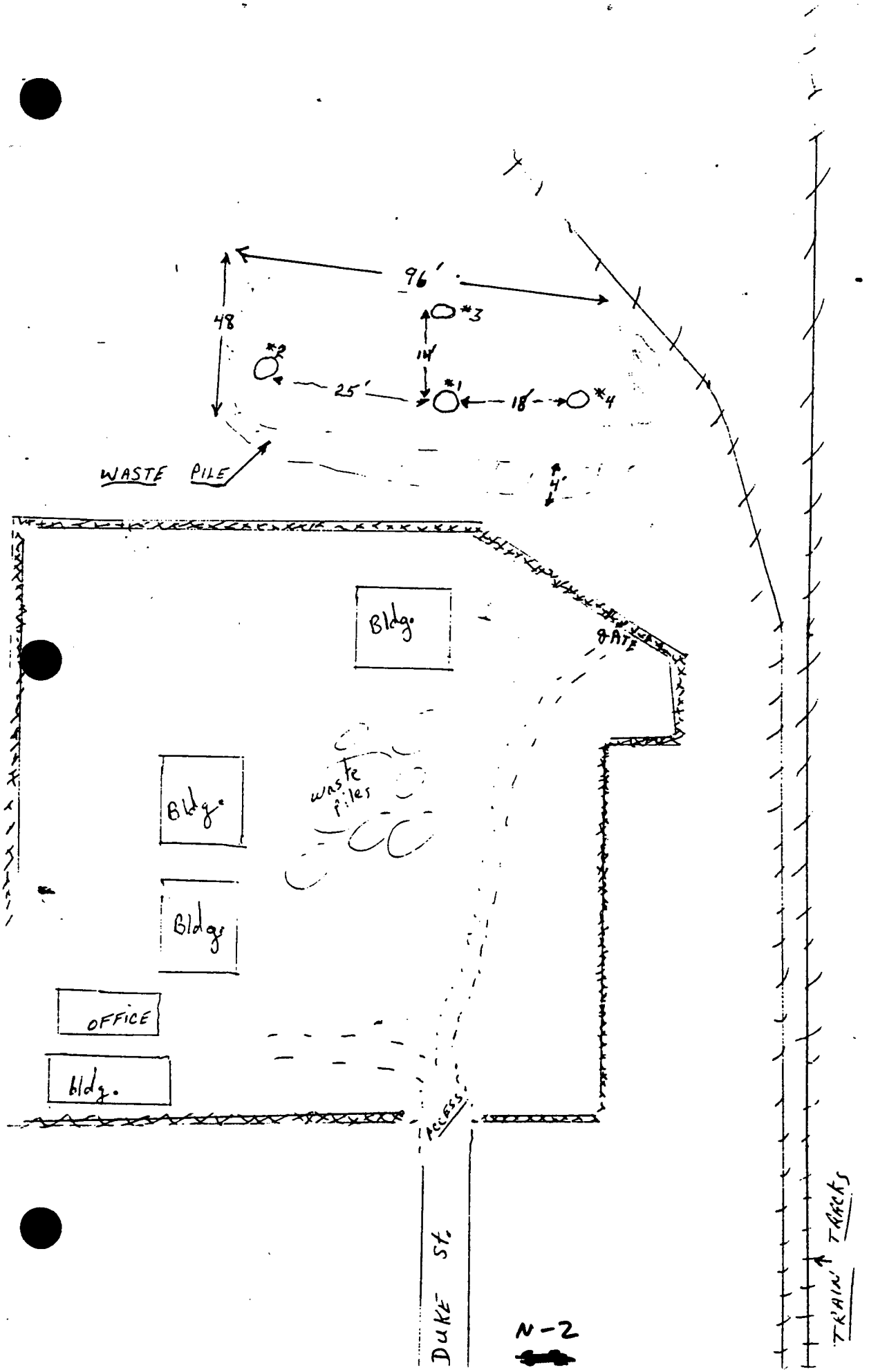
The entire pile of dirt material is approximately 4' high, 48" wide and 96" long. The exact distance from each sample bore is listed on the attached sketch.

Then the samples were taken the (C) samples which were four in total were given to Mr. Cole, vice president. Mr. Cole typed a letter designating that we were on site on the 14th, unannounced and took samples of the pile which was regarded as non-hazardous by EPA. A signature was required by both Wayne and me on the letter. Wayne requested that a copy be sent to his office for our file, Mr. Cole agreed.

The samples were documented on the appropriate lab data sheets and a chain of custody was made out. The samples were then taken to the lab in Camden, NJ for analysis. p. 197

N-1

/14/81 Interstate Metals, Seppanating



N-2

p. 198

HAZARDOUS WASTE INVESTIGATION

Inspector: Mike Nalbone Date: 3/24/81

Location: Interstate Metals Separating Co.

St: 275 Duke St.

Town: Kearny

County: Hudson

Lot: -- Block: -

Origin of Complaint:

Complaint: Requested to check out and classify waste on site

Findings:

On 3/24/81 I visited Interstate Metals Separating Co. to classify a pile of waste on site. I spoke to Barry Brown the foreman of Interstate Metals about the material. He told me that a company in Maine used mercury in one of their processes. The company building was demolished but it was thought that the floor of the building still contained a large amount of mercury. Interstate Metals had the floor of this building transported to their Kearny site. After checking for levels of mercury, it was found that none existed according to Mr. Brown. If mercury was found in the soil and rock, Mr. Brown said the company would have separated the mercury out.

The pile of soil and rock was approximately 35' in length and 10' in width and 4' in height. No buckets, drums, bottles or trash was mixed in with this material. Samples were taken at this time and sample data sheets as well as a chain of custody were filled out. Both soil samples and rock samples were taken and for every set of samples taken an additional duplicate sample was taken for Barry Brown of Interstate Metals.

Sample #'s taken 003AB, 004AB, 005AB.

Mike Nalbone

Mike Nalbone

RECOMMENDATION

3/24/81

I did not visually see any form of mercury within the soil and rock although I will not make a determination of this material until an analysis is made specifically checking for mercury.

Mike Nalbone

Mike Nalbone

e Reutter Building, Ninth and Cooper Streets
amden, New Jersey 08101
Telephone: 609 - 541-6700 TWX: 7108910547

April 17, 1981

NJDEP
Solid Waste Division
32 Hanover Street
Trenton, NJ 08625

Attention: Mr. Wayne Howitz, Hazardous Waste Bureau

Reference: Test Report No. S-1378

This report covers the evaluation of two (2) waste samples submitted to Stablex-Reutter, Inc. (SRI) on April 3, 1981 for analysis of Mercury content. The analysis adhered to the procedure as described in the U.S.E.P.A Methods for Chemical Analysis of Water and Wastes, 1974.

The sample designations and results are as follows:

	MN 003 A	MN 004 A
Mercury, ugms/gm	500	83

If you have any questions concerning this analysis, please don't hesitate to contact us. Copies of the Chain of Custody Records are attached.

Respectfully submitted,

STABLEX-REUTTER INC.

Catherine McCormick

Catherine McCormick
Assistant Laboratory Manager

CMC/bd
Att.

0-3

p.201

Dr L Keel - Deerne
asap. R

STATE OF NEW JERSEY
DEPARTMENT OF LABOR AND INDUSTRY
OFFICE OF BUSINESS ADVOCACY
LABOR AND INDUSTRY BUILDING
TRENTON, NEW JERSEY 08625

JOHN J. HORN
Commissioner

ROCCO V. GUERRIERI
609-292-0700

February 11, 1981

Mr. Tim McGuinness
Senior Environmental Specialist
Hazardous Waste
Solid Waste Administration
Department of Environmental Protection
32 East Hanover Street
Trenton, New Jersey 08625

Dear Mr. McGuinness:

Pursuant to our conversation I was requested by Barry Brown of Interstate Metals Separating Company to request an evaluation of waste rock that he wishes to remove from his factory site. You requested a visual description of the rock. The material is cement rock slabs of various sizes. Some are the size of a grapefruit while others are as large as footballs.

The material was the result of a demolition of a plant floor in Maine. There is approximately 400,000 to 600,000 pounds of this material including some soil that will no doubt be part of the clean-up. Interstate has stored this material for many years and now wishes to clear this site for company use.

Enclosed you will find a letter from the U.S. Environmental Protection Agency who judged the material not to be a hazardous material. I would appreciate your correspondence being directed to Mr. Barry Brown, Interstate Metals Separating Company, 275 Dukes Street, Kearny, New Jersey 07032. Please send me a copy of this correspondence. I have also included copies of Report of Assay and Report of Test which were performed by International Testing Laboratories, Inc. to assist in your determination.

Your attention to this matter will be greatly appreciated.

Sincerely,

Samuel Mastrull
Permit Coordination Officer

SM:i
Enc.

New Jersey Is An Equal Opportunity Employer

AD-18.28 (2-79)

P-1

p. 202

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 FEDERAL PLAZA
NEW YORK NEW YORK 10278

January 29, 1981

Mr. Barry Brown
Interstate Metals Separating Co.
275 Dukes Street
Kearny, NJ 07032

Dear Mr. Brown:

At the request of Sam Mastrull of the New Jersey Office of Business Advocacy, I have examined a copy of the laboratory analysis on a sample of waste rock which you supplied. Based on that analysis, the waste is not a hazardous material by the Environmental Protection Agency's (EPA) definition and therefore need not be handled according to hazardous waste regulations.

Thank you for your concern and cooperation.

Sincerely yours,

Alan Stern

Alan Stern
Environmental Scientist
Solid Waste Branch

cc: Sam Mastrull
Office of Business Advocacy
New Jersey Dept. of Labor and Industry

STATE OF NEW JERSEY
DEPARTMENT OF LABOR AND INDUSTRY
OFFICE OF BUSINESS ADVOCACY
LABOR AND INDUSTRY BUILDING
TRENTON, NEW JERSEY 08625

JOHN J. HORN
Commissioner

ROCCO V. GUERRIERI
609-292-0700

December 23, 1980

Mr. Allan Stern
Federal EPA
Solid Waste Branch
26 Federal Plaza
New York, New York 10278

Re: Interstate Metals Separating Co.

Dear Mr. Stern:

The above named company previously made requests to your office for an evaluation of a solid waste material. In our discussion today, I verbally stated the contents of the sampling done by International Testing Laboratories, Inc. Although you assured me the level of elements reported in the testing was not sufficient enough to concern you, the company requests me to send a copy of the report of the test for you to send a correspondence indicating your verbal statements to me that the material is not hazardous.

I appreciate your assistance in this matter and best wishes for a happy holiday season.

Sincerely,

Sam Mastrull

Sam Mastrull
Permit Coordination Officer

SM:i
Enc.
cc: Barry Brown
Max Frenkel

BRANCH OFFICES
Chicago, Illinois
Philadelphia, Pennsylvania

Cable Address: INTEL
Telex: 139187

International Testing Laboratories, Inc.

Materials Testing and Consulting Engineers

578-582 MARKET STREET
NEWARK, N. J. 07105

PHONES (201) 589-4772-3-4

REPORT OF ASSAY

No. 457858 DATE August 26, 1980

Our assay of the sample of Rock

From Interstate Concentrating Company

Marked:

and submitted to us, show

A.	Organic Bound Chlorine (Wt.%)	:	NONE
B.	pH of Water Extract	:	7 - 10
C.	Salts : Silicon Dioxide	:	32.14%
	Aluminum Oxide	:	2.57%
	Ferric Oxide	:	2.68%
	Calcium Oxide	:	7.92%
	Magnesium Oxide	:	1.22%
	Calcium Carbonate	:	0.68%
	Sand as SiO_2	:	52.12%
D.	Metallics : Mercury	:	0.018%
E.	Organic	:	NONE
F.	Inorganic :		
	Sand : Silicon Dioxide	:	52.12%
	Cement : Silicon Dioxide	:	32.14%
	Magnesium Oxide	:	1.22%
	Calcium Oxide	:	7.92%
	Ferric Oxide	:	2.68%
	Aluminum Oxide	:	2.57%
	Calcium Carbonate	:	0.68%
	Mercury	:	0.018%

To

Interstate Concentrating Company
Kearny, New Jersey

INTERNATIONAL TESTING LABORATORIES, INC.
David H. Hoffman

The liability of the International Testing Laboratories, Inc. with respect to the services charged for herein, shall in no event exceed the amount of the invoice.

Our reports pertain to the sample tested only. Information contained herein is not to be reproduced, except with our permission.

ITL 102 5M 2-79

BRANCH OFFICES
Chicago, Illinois
Philadelphia, Pennsylvania

International Testing Laboratories, Inc.

Material Testing and Consulting Engineers
Weighers, Samplers and Assayers
578-582 MARKET STREET
NEWARK, N. J. 07105
PHONE (201) 589-4772-3-4

Cable Address: INTEL
Telex: 139187

REPORT OF TEST

No. 457858 DATE Dec. 8, 1980

From Interstate Metals Separating Co.
275 Duke St.
Kearny, N.J.

Sample of : Rock

	RESULTS	LIMITS OF DETECTION
Antimony	None detected	0.50 ppm
Arsenic	None detected	0.8 ppm
Barium	0.70 ppm	
Cadmium	None detected	0.025 ppm
Chromium	0.24 ppm	
Lead	None detected	0.50 ppm
Mercury	None detected	4.7 ppb
Nickel	0.32 ppm	
Selenium	None detected	0.50 ppm
Silver	0.28 ppm	

The analytical procedure for the solid waste was conducted according to EPA, Hazardous Waste and Consolidated Permit Regulations, Federal Register, Vol. 45, No. 98, May 19, 1980, Appendix II, Acetic Acid Extraction Procedure.

To Interstate Metals Separating Co.
Kearny, NJ.

ASSOCIATION CONSULTING CHEMISTS & CHEMICAL ENGS. INC. MEMBER

The liability of the International Testing Laboratories, Inc. with respect to the services charged for herein, shall in no event exceed the amount of the invoice.

Our reports pertain to the sample tested only. Information contained herein is not to be reproduced, except with our permission.

INTERNATIONAL TESTING LABORATORIES, INC.

ITL 102 5M 4-80

S-2

Form VEM-017
6/93

NEW JERSEY STATE DEPARTMENT OF ENVI MENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY
AIR POLLUTION CONTROL PROGRAM
BUREAU OF ENGINEERING AND TECHNOLOGY

All Correspondence must indicate your DEP PLANT ID NUMBER

DEP PLANT ID 10232

Permit/Certificate Number 007992

(Mailing Address)

INTERSTATE METAL SEPARATING CO
275 DUKE STREET
KEARNY NJ 07036

(Plant Location)

INTERSTATE METAL SEPARA
275 DUKE STREET
KEARNY

Applicant's Designation of Equipment METAL ROASTERS W/SRUBBER
N.J. Stack No. 001
Original Approval 11/25/74

No. of Stacks 001
Effective 11/25/79

No. of Sources 02
Expiration 11/25/89

CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT (5 YEAR RENEWAL)

THIS (5 YEAR RENEWAL) CERTIFICATE IS BEING ISSUED UNDER THE AUTHORITY OF CHAPTER 106, P.L. 1967 (N.J.S.A.26:2C-9.2). THE POSSESSION OF THIS DOCUMENT DOES NOT RELIEVE YOU FROM THE OBLIGATION OF COMPLYING WITH ALL OTHER PROVISIONS OF TITLE 7, CHAPTER 27, OF THE NEW JERSEY ADMINISTRATIVE CODE.

YOU MAY BE ENTITLED TO AN EXEMPTION OF TAXATION IF YOUR EQUIPMENT IS TAXED AND IS CONSIDERED TO BE AN AIR POLLUTION ABATEMENT FACILITY. A TAX EXEMPTION APPLICATION MAY BE OBTAINED FROM THIS SECTION.

IF IT IS NECESSARY TO AMEND YOUR EMERGENCY STANDBY PLANS, PLEASE CONSULT WITH THE APPROPRIATE FIELD OFFICE. (SEE OTHER SIDE).

THIS DOCUMENT MUST BE READILY AVAILABLE FOR INSPECTION AT THE PLANT.

N.J. Department of Environmental Protection
Division of Environmental Quality
CN-027
Trenton, New Jersey 08625

Approved by: _____
Supervisor
New Source Review Section

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR PERMIT TO CONSTRUCT, INSTALL OR ALTER CONTROL APPARATUS OR EQUIPM

TO: New Jersey State Department of Environmental Protection
Bureau of Air Pollution Control
P. O. Box 1390
Trenton, New Jersey 08625

Use instructions, Air-D13

Date October 12, 1972

Sec. A

1. Full Business Name INTERSTATE METALS SEPARATING COMPANY
2. Address of equipment and/or control apparatus:
   275 (No.) Duke Street (Street) Kearny (Municipality) Hudson (County)
3. Location on premises (Bldg., Dept., area etc.) Meter Oven Building
4. Nature of Business Metals separation SIC No.

Sec. B

1. ☐ New process equipment and new air pollution control apparatus
   ☒ New air pollution control apparatus on existing process equipment
   ☐ New process equipment with no control apparatus
   ☐ Other:
2. Prior permit numbers covering this installation. Specify. None
3. Estimated starting date October 20, 1972 Estimated completion April 20, 1973

Sec. C

1. Description of operation Roasting of gas meters to separate component metals and subsequent forming of metal ingots.
2. Identify process equipment See attached sketch.
3. Raw materials (names) Used gas meters containing tin, lead, and other metals.
   Total pounds per hour 1000 Total pounds per batch
4. Operating procedure:
   ☒ Continuous: 8 hrs. per day 5 days per ☒ week ☐ month
   ☐ Batch: hrs. per batch Batches per ☐ day ☐ week

D

Physical and chemical nature of air contaminants which must evolve from operation and be emitted into the open air:

AIR CONTAMINANTS	AMOUNTS OF CONTAMINANTS	
	With Control Apparatus	Without Control Apparatus
Particulate		
Tin oxide	Less than 0.5 lb.	10 lb./hr. estimated
Lead Oxide	Per hour	
Hydrocarbon		

(Continue on reverse side)

T-2

p. 208

Sec. E

1. Describe air pollution control apparatus See attached

2. Efficiency of control apparatus: 95+ %

3. Height of discharge above ground 45 ft.

4. Distance from discharge to nearest property line 100 ft.

5. Volume of gas discharged into open air 4500 cu. ft. per min. at stack conditions

6. Exit linear velocity at point of discharge 1300 ft. per minute at stack conditions

7. Temperature at point of discharge 150 °F

8. Will emissions comply with existing local requirements? Yes

9. Initial cost of control apparatus $ 16,000

10. Estimated annual operating cost $ 1,500

This application is submitted in accordance with the provisions of N.J.S.A. 26:2C-9.2, and to the best of my knowledge and belief is true and correct.

Signature - all copies

Mr. Barry Brown
Name (Print or type)

Mailing Address

Plant Manager
Title

Zip Code

201 998-7660
Telephone No.

DO NOT WRITE BELOW

PERMIT TO CONSTRUCT, INSTALL OR ALTER CONTROL APPARATUS OR EQUIPMENT

Application for permission to construct, install or alter the equipment and/or control apparatus as set forth above is APPROVED.

Date 10.16.72

Approved by:

PERMIT NO. P9044

Supervisor, Permits & Certificates

Submit original and three (3) copies

M5379

p.209

T-3

#3

To: Tom Leonard

From: John Strong

Subject: Interstate Metal Seperating Corp
275 Dukes St, Kearny

Person Interviewed: Barry Brown - Pres.

Date of Investigation: 3-23-82 1:00 - 2:00 pm

Purpose of Investigation: Is company smelting lead batteries in their Kilns. See attached Note from J. Walsh

Investigation

On 3-23-82 the undersigned met with Mr. Brown and conducted a plant inspection. Subject company has 2 Kilns; 1 Kiln is used to evaporate water from a copper slurry. This unit due to the economy is not in operation. The other Kiln was observed in operation roasting condemned gas meters to recover the solder to form ingots. The remaining metal parts to the gas meter are hand seperated to recover the assorted metal components: brass, steel etc. Emissions are controlled by a venturi scrubber. At the time of the inspection emissions at stack exhaust were well within the allowable. While touring the plant yard no signs or indications that batteries were being smelted were observed. Plant yard was considerably clean considering the nature of the business.

Conclusion: At the time of the inspection the inspector did not observe any signs which would indicate that subject company is violating their air pollution permit by smelting lead batteries.

Recommendation: Follow-up at regular monthly inspection File #3.

[signature]
C Ew-Spe.

Tom
Company has 2 Kilns, Grand Bathered.
One is the Roaster?
Covered by P-CT 7992
to recover lead + Tin from Condemend Gas Meters.
the other is for evaporating water from a Copper Slurry.
A neigbor called + Said they are incinerating Lead Batteries to recover Lead. This started within the last couple of weeks.
TW

(p. 211)

T-5

MAX FRENKEL

ENVIRONMENTAL ENGINEERING & CONSULTING

AIR
WATER
WASTE
NOISE
ENERGY
O.S.H.A.

REPLY TO:

September 27, 1978

Mr. Walter J. Nicol, Health Officer
Kearny Dept. of Public Health and
Environmental Protection
645 Kearny Avenue
Kearny, N.J. 07032

RE: Interstate Metals Separating Co.

Dear Mr. Nicol:

We have received a copy of your letter dated September 12, 1978, to Mr. Cole of Interstate Metals regarding Mr. MacDonald's inspection of the metals pouring process, and a possible absorption of lead by employees.

Mr. Max Frenkel and I visited the Interstate Metals plant on September 20th, and witnessed the pouring of the metal into molds, which was conducted in the same manner as was observed by Mr. MacDonald of the North Hudson Regional Health Commission.

We have observed that the molds are first smeared with a very thin layer of petroleum lubricating oil, and then the molten metal is poured into the molds. Without the oil smear in the mold, as the metal cools, the air within the trapped air bubbles expands and causes the bursting of the bubbles.

The thin oil smear on the bottom of the mold prevents splattering of metal during pouring, because the thin film of oil, by evaporating slowly through the molten metal, causes the metal to stir and prevents pockets of air to be trapped inside the metal. The smoke one notices is from the oil evaporating inside the mold.

The amount of oil used to smear the molds is less than a pint per day, or about one pound for all the molds. This oil is evaporated during approximately the half hour that the pouring of metal is conducted during a typical work day. We do not feel that the oil fumes, which are saturated hydrocarbons, are harmful. The pouring of metal into the molds would be quite hazardous if the oil was not smeared on the bottom of the mold, because of the excessive splattering of metal which would occur otherwise.

Contd.....

ONE CHERRY HILL – SUITE 617 CHERRY HILL, N. J. 08002 (609) 779-8112

Your suggestion that Interstate Metals start monitoring the blood/urine for lead content as a preventive health measure has been fully accepted by their management. I was informed that they will have all their employees, who work in the metals pouring area, tested by a medical laboratory within the next few days.

Interstate Metals appreciates your letter and suggestions of September 12th, and they and we wish to assure you that their employees' health is of their utmost concern. We, as their environmental consultants, will be closely watching the results of the lead content monitoring.

Sincerely yours,

L. Kuryłko

MP-MAX FRENKEL
Environmental Engineering & Consulting

LK:rl

cc: Mr. Morley Cole

Mr. MacDonald

ECOLOGY INTERNATIONAL

ENVIRONMENTAL ENGINEERING & CONSULTING

AIR
WATER
WASTE
NOISE
ENERGY
O.S.H.A.

Rec'd 8/31/78 8:37

August 28, 1978

REPLY TO: One Cherry Hill
Suite 617
Cherry Hill, N.J.
08002

Mr. L. Stetile, Director
Hudson Regional Health Commission
532 Summit Avenue
Jersey City, New Jersey 07306

Subject: Implementation Plan to Reduce the Dust Formation Within the Interstate Metals Separating Company Plant in Kearny, New Jersey.

Dear Mr. Stetile:

As requested by you during the meeting of August 22nd at the Interstate Metals plant in Kearny, attented by the Town of Kearny Public Health Inspector, Mr. Tintle, Mr. MacDonald of your Commission, officials of Interstae Metals and Ecology International, we are submitting herewith an implementation plan to reduce dust formation within the plant boundaries at 275 Dukes Street in Kearny, New Jersey.

A. To reduce dusting produced by trucks driving within and out of the Interstate Metals plant:

1. Cover the entrance to the yard, as well as the area near the weighing station with 1½ inch crushed rock;
2. Wash the wheels of trucks leaving the plant;
3. Limit the speed limit of all vehicles to 5 MPH.

Actions Taken: Crushed rock is being delivered now and is being spread at key locations. The water connections for wheel washing are being installed now and wheels of all trucks leaving the premises will be washed beginning about September 7th. A sign is being ordered now and should be installed within about ten days.

In addition to the above, the management of Interstate Metals has undertaken the task of sweeping Duke Street up to about 200 feet from its plant boundaries every Monday morning.

B. To reduce the dust pick-up from the metal-sand inventory piles:

1. Cover piles near the front of the property with 4 mil polyethylene sheeting.

Action Taken: Polyethylene sheeting has been ordered and covering of inventory piles will begin within ten days. Only the unconsolidated sand metal piles will be covered near the entrance to the plant to evaluate this method of dust control.

p. 214

ORATE & MAIN OFFICE:
COOLIDGE RD., CHERRY HILL, N.J. 08002

TOWER OF FORTY ONE: SUITE 408
4101 PINE TREE DR., MIAMI BEACH, FL. 33140

C. To reduce the velocity of wind within the plant boundaries, and thus reduce the pick-up of dust in the plant and the carry over of dust out of the plant's premises:

1. Install wind breakers in the chain link fence in areas where there is wind tunnelling due to different building locations, building heights, etc.

Action Taken: Prices have been obtained for different size inserts that fit into the chain link fence. The effectiveness of the inserts will be tested on the northern side of the plant where the localized wind is highest. There is the problem of increased stress loadings on the fence when the passage of wind is blocked. Some posts may have to be replaced. In about one month we will evaluate this method of dust control.

I trust that the above actions taken by our client will meet with your approval and the agreement of the town inspector. As you can see, the Interstate Metals Separating Company, which for more than fourty years has been in this location in the resource recovery field serving primarily local industry, is showing willingness to comply with the laws of the State fully and wants to be a good neighbor in the community.

Please feel free to call me or to write, if you have any questions. I intent to keep you informed of the progress being made.

Very truly yours,

Max Frenkel, Consultant to
Interstate Metals Separating Company

cc: Mr. Edward R. Tintle, Town of Kearny ✓
Mr. Morley C. Cole, Interstate Metals
Mr. Barry Brown, Interstate Metals
Mr. Milton R. MacDonald, Hudson Regional Health Commission
Mr. Lubomyr Kurylko, Ecology International

532 SUMMIT AVENUE
JERSEY CITY, NEW JERSEY 07306

REPORT OF FIELD INVESTIGATION

TE August 22, 1978 TIME 10:30 - 12:15 FILE# 004

REFERENCE TO CHAPTER

L BUSINESS NAME Interstate Metal Corp.

ation 275 Duke St. Kearny, N.J. 07032
No. Street Municipality

ling Address same
No. Street Post Office Zip Code

son(s) Interviewed Barry Brown; Morley Cole — President
Title

bdmyr Kurylkd; Max Frankel — Consultants
Title

nments Ed Tintle - Al Statile - M.R. Mac Donald - Purpose to discuss control of dust.

ort Requested by
Title

pose of Investigation Complaints received regarding fugitive metallic dust emanating at this site.

servations Possibilities discussed include - truck tire bath, macadum driveway, crushed stone, sweeper, vacuum, building enclosures and fencing.

nclusions Will be reached by Interstate and their consultants. We will be advised via mail next week (8/28/78)

commendations

Investigated by M.R. Mac Donald
Signed

V-1

Inspector

p. 216

532 SUMMIT AVENUE
JERSEY CITY, NEW JERSEY 07306

REPORT OF FIELD INVESTIGATION

DATE August 22, 1978 TIME 10:30 - 12:15 FILE# 004

REFERENCE TO CHAPTER

FULL BUSINESS NAME Interstate Metal Corp.

Location 275 Duke St. (No.) Kearny, N.J. 07032 (Street, Municipality)

Mailing Address same (No., Street, Post Office, Zip Code)

Person(s) Interviewed Barry Brown; Morley Cole — President (Title)

Lubdmyr Kurylkd; Max Frankel — Consultants (Title)

Comments Ed Tintle - Al Statile - M.R. Mac Donald - Purpose to discuss control of dust.

Report Requested by (Title)

Purpose of Investigation Complaints received regarding fugitive metallic dust emanating at this site.

Observations Possibilities discussed include - truck tire bath, macadum driveway, crushed stone, sweeper, vacuum, building enclosures and fencing.

Conclusions Will be reached by Interstate and their consultants. We will be advised via mail next week (8/28/78)

Recommendations

Investigated by M.R. Mac Donald (Signed)

Inspector (Title)

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V-2

HUDSON MUNICIPAL AIR POLLUTION COMMISSION
532 SUMMIT AVENUE
JERSEY CITY, NEW JERSEY 07306

ROBERT E. HERRMANN
DIRECTOR

(201) 656-0003

February 6, 1973

Mrs. E. Holloway
209 Duke Street
Kearny, New Jersey

Dear Mrs. Holloway:

Reference is made to your complaint as of this date to Mr. Walter Nicol of the Kearny Board of Health, relative to emissions coming from Interstate Metals.

Both the writer and Mr. Statile had completed a survey of this problem at Interstate when Mr. Nicol arrived at the plant to personally check out the complaint you had made to him. This company has been under continual pressure by both offices to install adequate pollution equipment. To that end, they have at last both installed equipment and received an installation permit from the State. They are now in the process of testing this equipment prior to requesting the State to approve it by issuing a permanent permit.

However, both Mr. Statile and myself were dissatisified with the excessive amount of steam emissions. We suggested that they contact their engineers (Root Engineering, Inc.) and investigate the addition of a demistor for the stack. This would enable them to considerably reduce the emission level of the unit. We will follow up, needless to say, on this point with them in the immediate future.

While it is impossible for this Commission to advise every citizen of specific air pollution problems within their area, in light of your demonstrated interest in both local and state-wide problems relative to pollution, we feel that a short summation of the foregoing action by this Commission is both in order and helpful in the continuing struggle to provide clean air for all our citizens.

Again, we are most appreciative of your concern and interest in our mutual goals.

GEORGE L. SHEALY, INSPECTOR

ALFRED J. STATILE, CHIEF INSPECTOR

GLS:JMF
cc: Walter Nicol

Kearny
partment of Public Heal
and Environmental Protection

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N.J. 07032

COMMISSIONERS
KEARNY BOARD OF HEALTH

LILLIAN CARDOZA, President
VICTOR RUDOMANSKI, M.D., Vice President
JO-ANN CARRATURA
PETER CICCHINO
CHESTER KOZLIK
GORDON FOWLIE
ROBERT R. KERWIN, SR.

997-0600

EDWARD GROSVENOR
HEALTH OFFICER

J.H → John Crow Frank Long Port Murray

May 6, 1986

Mr. Kevin Krause
Metro Office N.J. DEP
2 Babock Place
West Orange, N.J. 07052

RE: Interstate Metals

Dear Kevin:

During our conversation of Monday May 5, 1986 you said that Interstate Metals showed interest in taking the soil samples your office had requested. Interstate Metals also asked to have their property drained by the Town so that sampling could be accomplished.

It is the position of the Town that Interstate is responsible to drain their own property. This is for a number of reasons.

(1) A storm drain that runs thru Interstate property appears to be damaged and does not work properly. In the opinion of the Town engineer, Interstate would be held liable for damage to this sewer line if the Town desired to persue this case.

(2) Due to complaints of a dust nuisance entering homes in the area, from Interstate's waste piles, the Health Department issued a notice to Interstate (approximately 8 years ago) to abate this nuisance. Interstate chose to do so by trucking out to a landfill the accumulated waste. This removal created a crater which now accumulates water and which Interstate never made an attemtp to grade or properly fill in.

Feel free to call me if you have any questions on this matter.

Very truly yours,

John P. Sarnas,
Chief Sanitary Inspector

JPS:cek

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W-1

Kearny
Department of Public Health and Environmental Protection

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N.J. 07032

997-0600

COMMISSIONERS, BOARD OF HEALTH:
VINCENT MARTONE, President
VICTOR RUDOMANSKI, M.D., Vice President
LILLIAN CARDOZA, Secretary
RAYMOND McGAUGHAN
JOHN McNAMARA
JO-ANN CARRATURA
PETER CICCHINO

EDWARD GROSVENOR
HEALTH OFFICER

JANUARY 8, 1986

Report on meeting
Interstate Metals
275 Dukes Street
10:00 AM

In Attandance: Kevin Krause NJDEP
John Sarnas, KHD
Morley Cole, Interstate
Barry Brown, Interstate

This meeting was held to discuss the results of soil samples taken on 9/20/85 both inside and outside of the fence at Interstate. The attached results show a metals contamination problem and remedial action will have to be taken as outlined on the attached sheet.

Both Mr. Cole and Mr. Brown showed interest in beginning action of removal of contaminated soils as soon as ground thaws. They felt testing was not necessary and one soil and one well water test will be taken in the next month.

By limiting testing Interstate will be required to remove all soil from their property until DEP is satisfied. Mr. Krause agreed to supply Interstate with information on a certified lab and a landfill where contaminated soil can be removed.

Mr. Brown stated but could not provide documentation that some of the problem was from the operation of Keegan Landfill who removed soil from Interstate property in the early 60's and was ordered to refill the land. Mr. Brown contends that it was refilled with contaminated soil. Mr. Kraus stated tht Interstate is responsible unless Mr. Brown can provide documentation to the contrary.

I submitted that if contaminated soil is removed Interstate, will fill in with clean fill and grade their property to prevent the accumulation of stagnant water or a dangerous condition.

Kraus will follow up with order of abatement from DEP and will keep the Health Department informed

Kearny
Department of Public Health
and Environmental Protection

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N.J. 07032

997-0600

COMMISSIONERS, BOARD OF HEALTH:
VINCENT MARTONE, President
VICTOR RUDOMANSKI, M.D., Vice President
ULLIAN CARDOZA, Secretary
RAYMOND McGAUGHAN
JOHN McNAMARA
JO-ANN CARRATURA
PETER CICCHINO

EDWARD GROSVENOR
HEALTH OFFICER

UPDATE INTERSTATE METALS

December 23, 1985

Kevin Krause, of NJ DEP called on Friday December 20, 1985 concerning the latest on the Interstate Metals contamination. His concern was with the company being tipped off and disappearing - thus leaving the state with clean up responsibility. (the DEP has had this problem in the past).

Preliminary testing results have indicated mercury and chromate contamination and they assume more heavy metals will be found. Presently DEP in planning a clean up according to RECRA procedures with Interstate assuming all costs. (estimates of $750,000)

Clean up will include fencing,covering with tarpaulin and eventual cover with impermeable material or removal.

Krause said he will be meeting with the Deputy Attorney General on Friday December 27, 1985 concerning action by the State against Interstate.

We will be informed as soon as something is formulated but we are not to indicate to Interstate any information or possible action at this time.

Submitted by,

John P. Sarnas,
Chief Sanitary Inspector

Kearny
Department of Public Health and Environmental Protection

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N.J. 07032

997-0600

COMMISSIONERS, BOARD OF HEALTH:
VINCENT MARTONE, President
VICTOR RUDOMANSKI, M.D., Vice President
LILLIAN CARDOZA, Secretary
RAYMOND McGAUGHAN
JOHN McNAMARA
JO-ANN CARRATURA
PETER CICCHINO

EDWARD GROSVENOR
HEALTH OFFICER

September 9, 1985

Mr. Morley Cole
Interstate Metals
275 Dukes Street
Kearny, N.J. 07032

RE: Contaminated properties

Dear Mr. Cole:

Sampling conducted on soil within your property boundaries indicate high levels of mercury and chromium contamination which "may pose a significant risk to the public health".

While further testing is required to assess the total scope of environmental damage and the remedial action that will be necessary, immediate action is required on your part to have all areas of your property fenced off from either dirt bikers or the general public.

You are therefore notified that your property is declared a Public Health Nuisance under the definition as provided by the NJ Public Health Nuisance and are ordered to provide this department with a plan concerning the fencing of your properties in order to prevent entrance by the general public onto your property.

Failure to provide a satisfactory plan for the implementation of fencing in your property by September 17, 1985 will be cause for daily summons to be issued against you.

Very truly yours,

John P. Sarnas
Chief Sanitary Inspector

JPS:cek
cc: Hudson Regional Health Commission
J. Rogalski, NJ DEP Div. of Enforcement
A. Cavalier, NJ DEP Northern Regional Office

Kearny
Department of Public Health
and Environmental Protection
BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N. J. 07032
997-0600

ALBERT DREISBACH, PRESIDENT
VICTOR RUDOMANSKI, M. D., VICE PRESIDENT
ROBERT N. MARTONE, SECRETARY
JAMES A. DAVITT
CHESTER KOZLIK
PETER MALNATI
LEONARD VAN ORDEN

EDWARD GROSVENOR
HEALTH OFFICER

May 19, 1982

Mr. Morley Cole
Interstate Metals
275 Duke Street
Kearny, New Jersey 07032

RE: Stagnant Pond on your Property

Dear Mr. Cole:

In regard to the above matter, you will recall that about five years ago you were notified to abate a dust nuisance eminating from the slag piles (a waste product of your operation). Your abatement consisted of removal of slag to sanitary landfill. The result has been a stagnant pond of water which when full, is able to partially run off into the meadows. Presently, however, no run off occurs as the pond (which ranges between 6" to 10" deep) has a depth which is below the depth of the run off ditch.

As this pond is causing a nuisance by being a mosquito breeding area, you are hereby notified to illiminate it.

Although the manner of abatement is at your descretion, the optimum way, this could be done is by filling, leveling and grading the area properly so that rain water will not be allowed to accumulate but rather run off in the direction of the ditch or towards the meadows.

Feel free to contact me concerning this matter.

Very truly yours,

John P. Sarnas,
Senior Sanitary Inspector

JPS:cek
cc: Councilman, Richard Naprawa

THE PREVENTION OF DISEASE AND THE PROMOTION OF HEALTH ARE COMMUNITY RESPONSIBILITIES

Kearny
Department of Public Health and Environmental Protection

ES A. DAVITT, PRES.
OR RUDOMANSKI, M. D. VICE PRES.
MILTON J. LERNER, D. D. S.,
CHESTER KOZLIK
ROBERT N. MARTONE
RAYMOND McGAUGHAN
ROBERT T. REID, SECRETARY

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N. J. 07032
997-0600

WALTER J. NICOL
HEALTH OFFICER

EDWARD GROSVENOR
ASST. HEALTH OFFICER

19

998-7660

September 12, 1978

Mr. Morley Cole
Interstate Metals Separating Company
275 Duke Street
Kearny, N. J. 07032

Dear Mr. Cole:

Findings of a recent inspection of your operation conducted by Mr. MacDonald of the North Hudson Regional Health Commission, leads this agency to believe that a possible degree of lead absorption in your metal division's pouring process could be causing an elevated blood lead level in your employees as well as you.

A high number of cases of this sort in industry are found to be caused by the absorption of lead dust and fumes by inhalation, causing workers to form this high blood lead level over a number of years. Only by monitoring these persons by examination can the degree of intake be measured and then controlled.

This department, in the best interests of public health, STRONGLY suggests steps be taken at your level to have every employee receive a blood/urine lead analysis as soon as possible.

If you require any assistance or have any questions in this matter, please feel free to contact Mr. Edward Tintle of this department.

Very truly yours,

Walter J. Nicol

WALTER J. NICOL
Health Officer

WJN:hm

THE PREVENTION OF DISEASE AND THE PROMOTION OF HEALTH ARE COMMUNITY RESPONSIBILITIES

W-5

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201 998-7660

INTERSTATE METALS SEPARATING CORP.

SMELTERS - RECLAIMERS - METALS - ALLOYS

275 DUKES STREET

KEARNY, N. J. 07032

July 14, 1976

Mr. John P. Sarnas
Sanitary Inspector
Dept. of Public Health
645 Kearny Avenue
Kearny, N.J.

Re: Your letter of June 29th

Gentlemen:

With reference to the above letter from your office, we respectfully beg to advise as follows:

About a week prior to receipt of your letter and entirely on our own initiative, we made arrangements with a private concern, to utilize a tractor and dump trucks to remove the "piles" from the area in question. The material being removed is being used elsewhere as land fill. The work of removal was begun during the week of June 21st and will continue through the summer.

The elimination of the "piles" once accomplished, will enable us to grade the land so that everything in the area will be in conformance with the regulations and laws of the town.

We further plan to keep the land area in a moist, murky condition which will have two desired effects. First, this will discourage motorcycle riding in the area. Secondly, it will eliminate the possibility of dust in the area.

We anticipate this work being completed by the end of August.

A review of past records will show that we have always tried to initiate steps on our own rather than wait for the appropriate authorities to tell us what should be done. As in the past, we will seek to cooperate to the fullest extent with your office.

Yours very truly,
INTERSTATE METALS SEPARATING CORP.,

Morley G. Cole

MGC:mel
copies: Alfred J. Statile, Hudson Municipal Air Pollution Commission

Kearny
Department of Public Health

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N. J. 07032
997-0600

EWIS KOOK, M. D., PRES.
TER KOZLIK, VICE PRES.
TON J. LERNER, D. D. S.
ERT T. REID
FRANCIS T. CHICKENE
OWEN McKEEVER
ARTHUR HOOD

WALTER J. NICOL,
HEALTH OFFICER
ARTHUR HOOD
SECRETARY

19

June 29, 1976

Interstate Metals Separating Corp.
275 Dukes Street
Kearny, New Jersey 07032

Attention: Mr. Morley G. Cole

Re: Air Pollution from Trade Wastes

Dear Mr. Cole:

This department has been informed by Councilman Silvestri that dust emanating from motorcycle riding on your slag piles is interfering with the comfort of area residents and workers.

As you may know, this is a violation of the New Jersey Air Pollution Control Code, Chapter II, Section 1.3, which states, "No person shall dispose of refuse in such a manner as to cause air pollution".

Neither the Kearny Police nor the Kearny Health Department can patrol your property continuously to see that trespassers are kept off an unmarked area that is serving as an attraction to motorcyclists. Therefore, you are hereby requested to submit to this department, in writing, the following:

1) Plans that would discourage use of your entire property by would-be trespassers that is satisfactory to this department in in accordance with Chapter 76 of the Code of the Town of Kearny entitled "The Fencing of Certain Lands".

2) A time table of how this plan will be implemented.

Failure to respond to this letter by Friday, July 16, 1976, will result in the following by this department.

1) The issuing of summons to you for any air pollution occurring on your property.

2) Termination of your corporation's dumping of waste product on your property.

Very truly yours,

John P. Sarnas, Sanitary Inspector

JPS:el
CC: Councilman James Silvestri

THE PREVENTION OF DISEASE AND THE PROMOTION OF HEALTH ARE COMMUNITY RESPONSIBILITIES

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Kearny
Department of Public Health

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N. J. 07032
997-0600

LEWIS KOOK, M. D., PRES.
ESTER KOZLIK, VICE PRES.
MILTON J. LERNER, D. D. S.
ROBERT T. REID
FRANCIS T. CHICKENE
OWEN McKEEVER
ARTHUR HOOD

WALTER J. NICOL,
HEALTH OFFICER
ARTHUR HOOD
SECRETARY

19

May 5, 1976
at 11:00 A.M.

REPORT ON HEARING

Re: Interstate Metals

On the above date and time a hearing was conducted at the Kearny Health Center to discuss a dust problem emanating from Interstate Metals at the foot of Dukes Street in Kearny.

In attendance were the following:

John Sarnas - Kearny Health Department
Robert Scapicio - Kearny Health Department
Milton MacDonald - Hudson Regional Health Commission
Max Frankel - Ecology International) Representing
Nathan Frankel - Ecology International) Interstate Metals

Topic under discussion was a dust complaint from Mr. King of Hoyt Street.

Dust samples were taken from Mr. King's home and given to Mr. Frankel for analysis. Samples were also taken from the by-products given off by Interstate for comparison purposes.

The Kearny Health Department made it quite clear that Interstate Metals would be responsible for controlling any dust problem that may come from their slag piles or from any other source that they were responsible for.

Method of prevention was left open to Mr. Frankel to decide although suggestions such as wetting were discussed.

While Mr. Frankel did not accept responsibility on the behalf of Interstate for the dust problem, the Kearny Health Department informed Mr. Frankel that, should any problem in the future be caused by dust from Interstate Metals, they would be liable to legal action by the department.

201, 998-7660

INTERSTATE METALS SEPARATING CORP.

SMELTERS - RECLAIMERS - METALS - ALLOYS

275 DUKES STREET

KEARNY, N. J. 07032

June 1, 1970

Kearny
Dept. of Public Health
645 Kearny Avenue
Kearny, N. J.

Attention: Edward Grosvenor
Sanitarian

Gentlemen:

With reference to your letter of May 18th pertaining to the burning of gas meter parts re: compliance with Chapter VII of the State Air Pollution Code, we respectfully beg to advise as follows:

The operation you refer to was investigated and evaluated by the N. J. State Dept. of Health and was found to be well under the limit of allowed emmission . We were found to be in full compliance with Chapter VII of the State Air Pollution Code, and all requirements were satisfied.

Yours very truly,
INTERSTATE METALS SEPARATING CORP.,

Morley G. Cole

MGC;mel

w-9 p. 228

Town of Kearny

Hudson County, New Jersey

EPH M. HEALEY
MAYOR

DONALD ALLAN
TOWN CLERK

NORMAN A. DOYLE
FRANK X. SMITH
FIRST WARD

FRANCIS A. VINCENT
THOMAS B. BERGEN
SECOND WARD

RICHARD FROELICH
ROWLAND D JOHNSTON
THIRD WARD

LEO S. CARNEY, JR.
FRANCIS A. CASSIN
FOURTH WARD

MEMBERS OF THE TOWN COUNCIL

December 13, 1956.

Mr. Walter J. Nicol
Health Officer
Kearny, New Jersey

Dear Walt:

At a regular meeting of the Council of the Town of Kearny, held December 12, 1956, the attached application of the Coppola Brothers for permission to fill Lot 116C, in Block 285, was referred to the Board of Health for investigation and report back to the Council.

Also advising you that at the aforesaid meeting I was directed to again refer the application of the Interstate Concentrating Co., Inc., for permission to fill Lot 114A in Block 285, to the Board of Health for official action.

By order of the Mayor and Council, I am

Very truly yours,

Donald Allan

DA:SA

Town Clerk

W-10

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COPPOLA BORTHERS
GENERAL CONTRACTORS
10-12 GREYLOCK AVENUE
BELLEVILLE, N. J.

PL- 9-5440

December 6th, 1956.

Hon. Mayor Joseph M. Healey
Town of Kearny
Kearny, N.J.

Att. Members of Town Council.

Re: Meadows
Block 285
Lot 116 C

COPY

Dear Sir:

I would like to obtain a permit to dump clean fill on the above property. I intend to build a truck terminal in the future.

Thank you for your attention in this matter.

Very truly yours,

/s/ John Coppola

0.71 Acres
Bergen Ave., near R.R.

November 28, 56

Hon. Mayor, Joseph M. Healey
and
Members of the Town Council
Town Hall
Kearny, New Jersey

Dear Sirs:

In reply to your letter of November 7th, 1956 regarding the filling of Block 285 - Lot 114A by the Interstate Concentrating Co., Inc., I am writing the following report.

This writer inspected the property described above, the filling has started. The fill is basically used foundry sand with some metallic particles, there is also some fire brick mixed in the fill.

The fill is excellent material having good properties of compaction, drainage and workability.

In my opinion there is nothing contained in the fill that would present a health hazard to the citizens of Kearny.

Very truly yours,

Walter J. Nicol, Health Officer
Kearny Board of Health

wjn:jej

Copy

INTERSTATE CONCENTRATING CO., INC.
~~44 COURT STREET~~
BROOKLYN 1, N. Y.

Nov. 7, 1956.

Mayor J. M. Healey,
Town Hall,
Kearny, N. J.

Dear Mayor Healey:

We have recently purchased a plot of land, Block 285 - 114A on Bergen Avenue. It is our intention over a period of the next several years to move the Kearny Smelting & Refining Corporation, in which we have an interest, over to this area.

Block 285 - Lot 114A is presently nothing more than meadow land. The by products from our present operation would constitute excellent fill for this land. We are, therefore respectfully requesting your permission to use this land fill to fill in the land.

Yours very truly,

INTERSTATE CONCENTRATING CO.

/s/ Morley G. Cole

11/27/56. O.J.M.

Excellent fill:

Predominantly Foundry sand, Fire Brick devoid of combustible material.

[redacted] W-13 p.232

DEPARTMENT OF CONSERVATION
AND ECONOMIC DEVELOPMENT
DIVISION OF WATER POLICY & SUPPLY

Permit No. 26-2381
Application No. _____
County Hudson

WELL RECORD

1. OWNER Wilpet Tool MFG Co. ADDRESS 244 Dukes St
   Owner's Well No. Two SURFACE ELEVATION 10 Feet (Above mean sea level)
2. LOCATION Kearny Hudson Co N.J.
3. DATE COMPLETED April 26 1961 DRILLER Rinbrand Well Drilling Co Inc
4. DIAMETER: top Ten inches Bottom ten inches TOTAL DEPTH 700 Feet
5. CASING: Type steel Diameter 10 inches Length 290 Feet
6. SCREEN: Type _____ Size of Opening _____ Diameter _____ inches Length _____ Feet
   Range in Depth { Top _____ Feet, Bottom _____ Feet } Geologic Formation _____
   Tail piece: Diameter _____ inches Length _____ Feet
7. WELL FLOWS NATURALLY _____ Gallons per Minute at _____ Feet above surface
   Water rises to _____ Feet above surface
8. RECORD OF TEST: Date April 26 1961 Yield 520 Gallons per minute
   Static water level before pumping 40 Feet below surface
   Pumping level 175 feet below surface after 24 hours pumping
   Drawdown 135 Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
   How Pumped Turbine How measured Orific
   Observed effect on nearby wells none
9. PERMANENT PUMPING EQUIPMENT:
   Type Turbine Mfrs. Name Deming
   Capacity 500 G.P.M. How Driven Electric H.P. 75 R.P.M. 1750
   Depth of Pump in well 200 Feet Depth of Footpiece in well 10 Feet
   Depth of Air Line in well 200 Feet Type of Meter on Pump Line Size _____ inches
10. USED FOR Cooling AMOUNT { Average _____ Gallons Daily, Maximum _____ Gallons Daily }
11. QUALITY OF WATER _____ Sample: Yes x No. _____
    Taste no Odor no Color clear Temp. 56 °F
12. LOG Clay, red hard sand Hard panRed rock. Are samples available? no
    (Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy)
13. SOURCE OF DATA Rinbrand Well Drilling Co Inc
14. DATA OBTAINED BY Adam F Rinbrand Date July 24 1961

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements etc.)

X-1 p. 233

Form DWR-138
11/80

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

PERMIT NO. 26-5818

APPLICATION NO. _____

COUNTY _____

FOR OBSERVATION PURPOSES ONLY

WELL RECORD

1. OWNER C+A Exxon ADDRESS 100 Schuyler Ave + Dukes St.
   Owner's Well No. D1 SURFACE ELEVATION _____ Feet (Above mean sea level)
2. LOCATION 100 Schuyler Ave + Dukes St.
3. DATE COMPLETED 9/7/82 DRILLER Lou Ontek
4. DIAMETER: Top 4 inches Bottom 4 inches TOTAL DEPTH 25'6" Feet
5. CASING: Type PVC Diameter 4 Inches Length — Feet
6. SCREEN: Type PVC Size of Opening .20 Diameter 4 Inches Length — Feet
   Range in Depth { Top — Feet / Bottom — Feet } Geologic Formation silty sand
   Tail Piece: Diameter — Inches Length — Feet
7. WELL FLOWS NATURALLY — Gallons per minute at — Feet above surface
   Water rises to — Feet above surface
8. RECORD OF TEST Date — Yield — Gallons per minute
   Static water level before pumping 15'4" Feet below surface
   Pumping level — feet below surface after — hours pumping
   Drawdown — Feet Specific Capacity — Gals. per min. per ft. of drawdown
   How pumped — How measured —
   Observed effect on nearby wells —
9. PERMANENT PUMPING EQUIPMENT:
   Type — Mfrs. Name —
   Capacity — G.P.M. How Driven — H.P. — R.P.M. —
   Depth of Pump in well — Feet Depth of Footpiece in well — Feet
   Depth of Air Line in well — Feet Type of Meter on Pump — Size — Inches
10. USED FOR Observation AMOUNT { Average — Gallons Daily / Maximum — Gallons Daily }
11. QUALITY OF WATER ? Sample: Yes — No ✓
    Taste ? Odor none Color clear Temp — °F.
12. LOG — Are samples available? no
    (Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)
13. SOURCE OF DATA Driller
14. DATA OBTAINED BY Lou Ontek Date 9/20/82

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements, etc.)

X-2 p. 234

PROJECT C + A Exxon

Diamond Drilling Co. Inc.

R. D. 3, BOX 365
JACKSON, N. J. 08527
BORING LOG

SHEET 1 OF 1
Job No. [illegible]
BORING NO. B 1
LINE & STA.
OFFSET

Site: 100 Schuyler Ave. & Dukes St.
Station # 1543 Permit # 26-5818

DATE, START:
DATE, FINISH: 9/7/82

GROUND ELEVATION
GROUND WATER ELEV. 15'4"

CASING O D ____ I D ____
SAMPLER O D ____ I D ____
COUPLING O D ____ I D ____

WEIGHT OF HAMMER CASING ____ LBS.
SAMPLER ____ LBS
INSIDE LENGTH OF SAMPLER ____ IN.

HAMMER FALL ON
CASING ____ SAMPLER ____

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE NO. DEPTHS ELEV. FT	BLOWS PER 6" OR SAMPLED TIME TO 0-6	6-12	12-18	18-24	DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	IDENTIFICATION OF SOILS REMARKS
0		S-1 0-5						2'	Black top 2" cinder fill
								6'	Red - silty sand trace clay with cobbles
		S-2 5-10							Orange Tan - medium fine sand trace silt
10		S-3 10-15						13'	
		S-4 15-20							Red Brown - medium fine sand trace silt No odor
20		S-5 20-25							
							25'6"	29'	
30									Refusal
40									

Soils Engineer ____ Driller Lou Ontek
Drilling Inspector ____ Helper Walt Ontek

VISUAL IDENTIFICATION TERMS USED

	Clayey Soils	At Ball Moisture
Clayey SILT	slight PI	Thread 1/4"
SILT & CLAY	low PI	Thread 1/8"
CLAY & SILT	medium PI	Thread 1/16"
Silty CLAY	high PI	Thread 1/32"
CLAY	very high PI	Thread 1/64"

Relative Density (D_R) of granular soils

loose	(L)	0 - 40%
medium compact	(MC)	40 - 70%
compact	(C)	70 - 90%
very compact		

Consistency of Clayey soils

soft	(S)	0.1 - 0.5 tsf
firm	(F)	0.5 - 1.0 tsf
med. hard	(MH)	1.0 - 2.0 tsf
hard	(H)	2.0 - 4.0 tsf
very hard	(VH)	over 4.0 tsf

Proportions used: trace = 1 - 10%, little = 10 - 20%, some = 20 - 35%, and = 35 - 50%

X-3

p. 235

PROJECT: C + A [illegible]

Diamond Drilling Co. Inc.

R. D. 3, BOX 365
JACKSON, N. J. 08527
BORING LOG

SHEET 1 OF 1
Job No. [illegible]
BORING NO. D 2
LINE & STA.
OFFSET

Site: 100 Schuyler Ave
Station # 1543 Permit # 26-5819

DATE, START:
DATE, FINISH: 9/7/82

GROUND ELEVATION
GROUND WATER ELEV. 14'9"

CASING O.D. ____ I.D. ____
SAMPLER O.D. ____ I.D. ____
COUPLING O.D. ____ I.D. ____

WEIGHT OF HAMMER: CASING ____ LBS. SAMPLER ____ LBS
INSIDE LENGTH OF SAMPLER ____ IN.

HAMMER FALL ON: CASING ____ SAMPLER ____

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE NO. DEPTHS ELEV. FT	BLOWS PER 6" ON SAMPLER FROM TO 0-6	6-12	12-18	18-24	DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	IDENTIFICATION OF SOILS REMARKS
0		S-1 0-5						1'	Black top 2" cinder
									Red - silty sand trace clay fill
								4'6"	
		S-2 5-10							Brown - medium fine sand trace silt
10		S-3 10-15							
								15'	
		S-4 15-20							Red Brown - fine medium sand little silt
20		S-5 20-25							
							22'		No odor
								25'	
30									
40									

Soils Engineer ____ Driller Lou Ontek
Drilling Inspector ____ Helper Walt Ontek

VISUAL IDENTIFICATION TERMS USED

	Clayey Soils	At Ball Moisture
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med. hard	(MH)	1.0 - 2.0 tsf
hard	(H)	2.0 - 4.0 tsf
very hard	(VH)	over 4.0 tsf

Proportions used: trace = 1 - 10%, little = 10 - 20%, some = 20 - 35%, and = 35 - 50%

X-4

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26-12-253 ☐ 26,4571

Form 87

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

Permit No. [redacted]
Application No. _____
County _____

WELL RECORD

1. OWNER Standard Plastics ADDRESS 260 Skyler Ave Kearny
Owner's Well No. 1 SURFACE ELEVATION 10' Feet (Above mean sea level)
2. LOCATION 150' East of Skyler Ave, Lot 2 Blk 242
3. DATE COMPLETED May 17, 74 DRILLER Roland Hipp
4. DIAMETER: top 6 inches Bottom 6 inches TOTAL DEPTH 250 Feet
5. CASING: Type Steel Diameter 6 inches Length 110 Feet
6. SCREEN: Type — Size of Opening — Diameter — inches Length — Feet
Range in Depth { Top _____ Feet, Bottom _____ Feet } Geologic Formation Sand, Clay, Red Shale
0-50 Sandy Clay
Tail piece: Diameter X inches Length X Feet 50-105 Sand & gravel
7. WELL FLOWS NATURALLY X Gallons per Minute at X Feet above surface
Water rises to X Feet above surface 105-250 Red Shale
8. RECORD OF TEST: Date May 17, 74 Yield 150 Gallons per minute good flow of water
Static water level before pumping 30 Feet below surface
Pumping level 120 feet below surface after 4 hours pumping
Drawdown _____ Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
How Pumped air lift How measured drill rods
Observed effect on nearby wells none to my knowledge
9. PERMANENT PUMPING EQUIPMENT: not yet installed
Type _____ Mfrs. Name _____
Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches
10. USED FOR _____ AMOUNT { Average 5,000 Gallons Daily, Maximum _____ Gallons Daily }
11. QUALITY OF WATER good Sample: Yes _____ No. _____
Taste _____ Odor _____ Color _____ Temp. _____ °F
12. LOG _____ Are samples available? _____
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy)
13. SOURCE OF DATA Well Driller
14. DATA OBTAINED BY Roland Hipp Date May 23, 74

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements etc.)

p. 237

X-5

REFERENCE NO. 4

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM — PROJECT NOTES

TO: Interstate Metals file

DATE: 12/15/98

FROM: K. Campbell

COPIES: —

SUBJECT: Site Latitude and Longitude

REFERENCE:

The site latitude and longitude were determined using the USGS topographic map, "Orange-NJ." The coordinates were calculated as follows:

- Latitude $\frac{0.9\text{ cm}}{19.3\text{ cm}}(150'') = 7''$

Base Latitude: 40°45'00" N
+ 7"

Site Latitude ⇒ 40°45'07" N

- Longitude $\frac{6.4\text{ cm}}{14.7\text{ cm}}(150'') = 65'' = 1'05''$

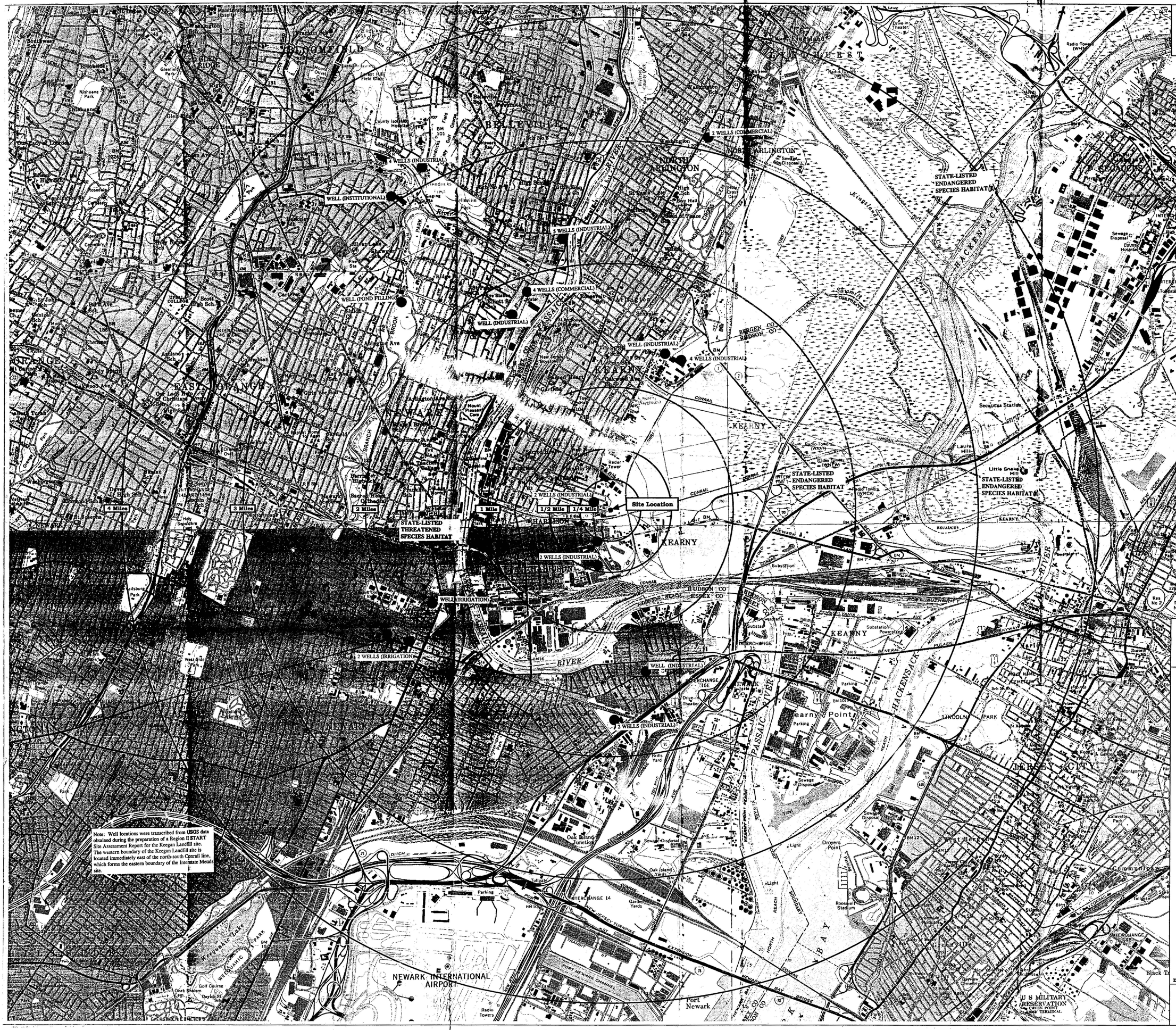
Base Longitude: 74°07'30" W
+ 1'05"

Site Longitude ⇒ 74°08'35" W

Ref. 4

REFERENCE NO. 5

TDD No. 02-99-08-0090
CONTRACT No. 68-W5-0019



Four-Mile Radius Map
Interstate Metals Site
Kearny, Hudson County, NJ

LEGEND

● **Site Location**
-Longitude: -74 08 38.2 West
-Latitude: 40 45 06.6 North

N
W E
S

Scale in Feet

2000 0 2000

SOURCE: USGS 7.5 Minute Series (Topographic) Quadrangles: Orange, NJ, 1955, photorevised 1981; Weehawken, NJ-NY, 1967, photorevised 1981; Jersey City, NJ-NY, 1967, photorevised 1981; Elizabeth, NJ-NY, 1967, photorevised 1981.

Date: 4/23/99

WESTON
MANAGERS DESIGNERS/CONSULTANTS
ENERGY PROGRAMS DIVISION

REFERENCE NO. 6

STARS-02-870

Interstate Metals
Dukes St.
Kearny, NJ

National® Brand	ACCOUNT BOOKS	9⅝ x 6¼"
Green Book Cloth		
Item No.	Numbered Pages	Ruling
Item No. 56-521	200	Record
Item No. 56-522	"	Journal

AVERY DENNISON	Office Products
Made in USA	Diamond Bar, CA

Product Guarantee

Avery is committed to providing you with quality products, and will gladly replace any product which does not provide complete satisfaction. We also welcome your comments and suggestions. Please send your correspondence with product code to:

Avery Division, Consumer Service Center
P.O. Box 5244
Diamond Bar, CA 91765-4000

Ref. 6

22 April 1998 Thursday

1415 Arrive at site location.

Weather: 60°F, overcast, calm.

START: Allen and Campbell arrive at Interstate Metals site for off-site reconnaissance to assess current conditions. Previous site maps do not note that Dukes Street and Toppen Street are connected at the easternmost points. However, it appears that since then, a connecting road has been paved.

IP-1 View looking southeast at property and nearby residential/commercial industrial area from Toppen Street.

An estimated 5 residences are located within 200 feet of the site property. No schools, day care centers noted within 200 feet of site.

IP-2 View looking at packaging business located northeast of the site. [Wilkats Packaging Corp.]

A moving company, All Seasons Movers (Agent for Atlas) is located on the southern half of the former Interstate business. All preexisting buildings have been demolished. The moving company is housed in a large warehouse structure, with surrounding pavements.

IP-3 View looking southwest at front entrance of moving company building.

IP-4 View looking southeast along north face of moving company building.

The unused portion of the property is unpaved and partially vegetated. Unvegetated soils appear to consist of fill material, including small brick. The former lagoon appears to be currently paved (e.g. part of moving company parking lot). In addition, the large pond noted on previous site maps is greatly diminished. Only a small area of standing water is currently on site - located toward northwest corner of property. Phragmites, typical of

wetland areas are located near the small pond and along a portion of the northern site fence. It is not known if the ponded water is perennial.

The site topography is relatively flat. There is a 8-10' earth and rubble berm with silt fencing located outside of the northern (NW) fence.

There is a "For Sale" sign on the unused portion of the property: Russell Realty Corp. (973) 777-1070, 3.84 acres.

[Background information indicates that the site property is 8.4 acres. Total property - "For Sale" property = size of used property.

8.4 acres - 3.84 acres = 4.56 acres.

Therefore, 4.56 acres are currently covered by a building and pavement.]

IP-5, IP-6 Panoramic view looking ~~west~~ (NW) east to north at undeveloped portion of the site, with small pond at left.

IP-7 View looking northwest at ~~NW~~ (NW) northwest corner of site. Packaging business outside fence.

The northern portion of the fencing appears to be continuous from the foot of Tappan Street north, across the northern and eastern boundaries. Although there are previous reports of trespass (motorbikes), there are currently no obvious signs of such activity, namely tracks. There is unrestricted access to the undeveloped portion of the site from the southern, developed portion.

An estimated 150 people work at the site (100) and nearby businesses (50). Conservative estimate.

IP-8 View looking southeast along southern boundary of property, with moving business warehouse to left.

This southern strip of land is unpaved and partially vegetated.

IP-9 View looking northeast at business to east of moving company. (Elgott Corporation Enterprises, 261 Dukes Street - west of paved circle.).

Storm drains are located along Dukes St & Tappan St.

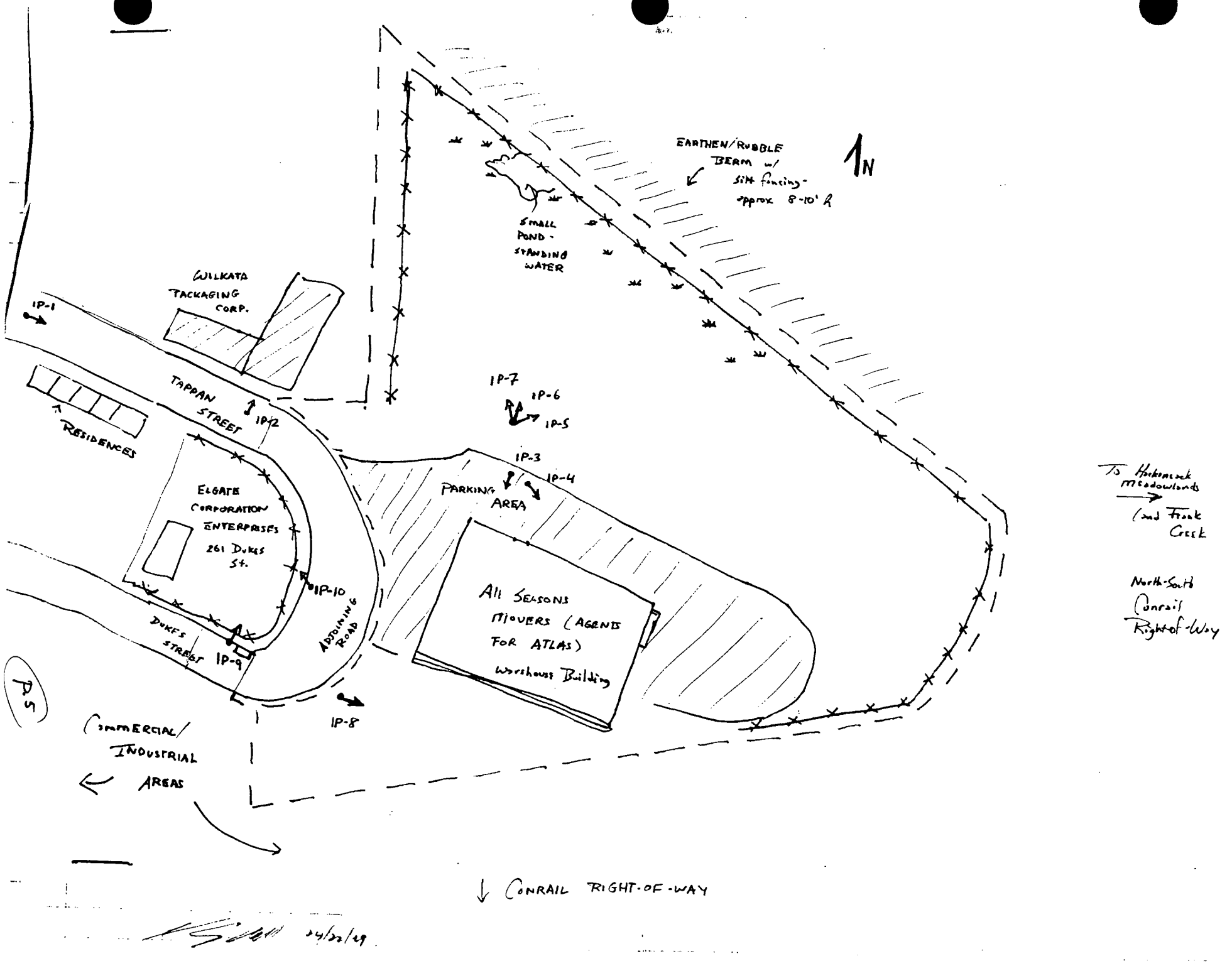
IP-10 View looking northwest from connecting road at neighboring business/residences.

The pavement connecting Dukes & Tappan Streets appears newer than the existing pavement on these streets. It is uncertain what portion, if any, of the former site may have been paved during this road work.

No unusual odors were noted by personnel during the reconnaissance. No obvious drainage patterns were noted. Although the Hackensack Meadowlands and former Keegan Landfill are located to the east, it is suspected to be unlikely for there to be no regular drainage to the Frank Creek due to the distances and intervening terrain (i.e. 2 railroad rights-of-way & elevated rail lines to the east and south of the site.

1530 START off site, returning to offices.

Site Sketch & Photo Location Map



24/22/49

REFERENCE NO. 7

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **PROJECT NOTES**

TO: Interstate Metals file

DATE: 09/02/99

FROM: K. Campbell

SUBJECT: Miscellaneous Site Background Information

REFERENCE:

Region II START obtained a significant amount of site background information from file reviews at the NJDEP Trenton and NJDEP Northern Field Offices. The files included the following site assessment documents: a June 1980 PA form (NJDEP), a June 1980 SI form (EPA), a July 1981 SI form (Fred C. Hart Associates, Inc.), and a July 1988 SI form (NJDEP). These forms are included as Attachments A through D, respectively. It should be noted that Reference 3 of this report presents the NJDEP August 1988 PA Report for this site. Some relevant items from the earlier reports are presented below:

The 1980 PA form noted the on-site presence of lagoons and scrap piles, as well as the potential presence of mercury-contaminated soils (Att. A, pp. 3, 7). The 1980 SI form indicates that NJDEP personnel conducted a site visit on 8 April 1980. State personnel observed similar site conditions as noted in the PA form. In addition, it was stated that it is probable that northern and eastern areas of the property had been filled using process wastes. An attached report indicates that Interstate Metals processed approximately 17 tons of mercury from PPG Industries, Inc.(Att. B, pp. 5, 6, 8, 11).

The July 1981 SI form also noted similar site conditions during the May 1981 site visit. Municipal storm water drainage was noted to collect in a pond adjacent to the on-site lagoon (Att. C, p. 9). The rubble that reportedly contained mercury is located toward the southeast portion of the property (Att. C, p. 11). The form recommended a low priority for the site (Att. C, p. 2).

In July 1988, the NJDEP prepared an additional SI form for the site. During the on-site reconnaissance, NJDEP personnel conducted air monitoring; elevated flame ionization detector (FID) and radiation readings were noted (Att. D, p. 17). The SI data summary indicates that in June 1985, the Hudson County Regional Health Commission collected four soil samples from the property and outside the fenced area for chromium and mercury analyses. Chromium concentrations ranged from 68 to 1,470 ppm, while mercury concentration ranged from 11.2 to 45.3 ppm. In September 1985, the NJDEP collected two composite soil samples. One composite sample was composed of soils outside the fenced area and one composite was composed of soils/materials located in and around the mercury recovery building. Notable concentrations of metals such as chromium, copper, lead, mercury, and nickel were detected in the sample. In addition, analytical data of the samples indicated the presence of PAHs such as phenanthrene, pyrene, fluoranthene, anthracene, and chrysene. Aroclor-1254 was detected in the unfenced area sample at a concentration of 2,900 ppb (Att. D, p. 4).

In January and March 1987 J.H. Crow Co., consultant to Interstate Metals, conducted media sampling at the site. The following samples were collected and analyzed for metal analytes of concern: 102 soil samples, eight groundwater samples, and six surface water/sediment sample pairs. Elevated levels of metals were detected in soils samples throughout the site to depths of 8 to 12 feet below ground surface. In addition copper, chromium, lead and zinc were detected in on-site monitoring well samples. Low levels of copper and zinc were detected in the aqueous lagoon samples. Analytical data of the corresponding sediment samples indicated the presence of elevated levels of the following analytes: copper, lead, mercury, and zinc (Att. D, pp. 5, 6). The SI form recommended a high priority for further action due to the presence of "gross metal contamination" (Att, D, p. 7).

Additional site historical information will be summarized in a separate Project Note of this report.

Ref 7

EPA

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION: II

SITE NUMBER (to be assigned by HQ): 0000100035

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (*Preliminary Assessment*). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (*EN-335*); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Interstate Concentrating Company

B. STREET (or other identifier): 275 DUKES STREET

C. CITY: KEARNY

D. STATE: NJ

E. ZIP CODE:

F. COUNTY NAME: HUDSON

G. OWNER/OPERATOR (*If known*)
1. NAME:
2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP
☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION
METAL Reclaimers

J. HOW IDENTIFIED (*i.e., citizen's complaints, OSHA citations, etc.*)
NJDEP INSPECTION

K. DATE IDENTIFIED (*mo., day, & yr.*): 6/10/80

L. PRINCIPAL STATE CONTACT
1. NAME: Thomas Brady
2. TELEPHONE NUMBER: (609)-292-3801

II. PRELIMINARY ASSESSMENT (*complete this section last*)

A. APPARENT SERIOUSNESS OF PROBLEM
☐ 1. HIGH ☒ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE ☐ 5. UNKNOWN

B. RECOMMENDATION
☐ 1. NO ACTION NEEDED (*no hazard*)
☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:
☐ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:
☐ 4. SITE INSPECTION NEEDED (*low priority*)

C. PREPARER INFORMATION
1. NAME: Richard Ramon
2. TELEPHONE NUMBER: (212)-264-1573
3. DATE (*mo., day, & yr.*): 6-10-80

III. SITE INFORMATION

A. SITE STATUS
☐ 1. ACTIVE (*Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.*)
☐ 2. INACTIVE (*Those sites which no longer receive wastes.*)
☐ 3. OTHER (*specify*): (*Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.*)

B. IS GENERATOR ON SITE?
☐ 1. NO ☒ 2. YES (*specify generator's four-digit SIC Code*): 3399

C. AREA OF SITE (*in acres*): 4

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES
1. LATITUDE (*deg.-min.-sec.*): 40° 45' 05"
2. LONGITUDE (*deg.-min.-sec.*): 74° 08' 05"

E. ARE THERE BUILDINGS ON THE SITE?
☐ 1. NO ☒ 2. YES (*specify*):

Continue On Reverse

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and activities relating to each activity by marking 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL	X	1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE	X	3. DRUMS		3. VOLUME REDUCTION	X	3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND	X	4. RECYCLING/RECOVERY	X	4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND	X	5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

V. WASTE RELATED INFORMATION

A. WASTE TYPE

[ ] 1 UNKNOWN [X] 2 LIQUID [X] 3. SOLID [ ] 4 SLUDGE [ ] 5. GAS

B. WASTE CHARACTERISTICS

[ ] 1 UNKNOWN [ ] 2. CORROSIVE [ ] 3. IGNITABLE [ ] 4 RADIOACTIVE [ ] 5 HIGHLY VOLATILE

[X] 6 TOXIC [ ] 7 REACTIVE [ ] 8 INERT [ ] 9 FLAMMABLE

[ ] 10 OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

2. Estimate the amount (specify unit of measure) of waste by category, mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NONHALOGNTD SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	X (3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	X (6) OTHER (specify): MERCURY	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify)		

Continue On Page 3

Att. A, p.2

WASTE RELATED INFORMATION *(continued)*

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE *(place in descending order of hazard)*.

MERCURY

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD *(mark 'X')*	C. ALLEGED INCIDENT *(mark 'X')*	D. DATE OF INCIDENT *(mo., day, yr.)*	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER	X			SEVERAL LAGOONS for containment of cooling water, wash water.
8. CONTAMINATION OF SURFACE WATER	X			Open dump on east side of property with open water
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL	X			
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS	X			SEVERAL LAGOONS ARE PRESENT FOR HOLDING PROCESS WASH WATER AND COOLING WATER
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER *(specify)*:				

Continued From Front

VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

[ ] 1. NPDES PERMIT [ ] 2. SPCC PLAN [ ] 3. STATE PERMIT (specify): _____

[ ] 4. AIR PERMITS [ ] 5. LOCAL PERMIT [ ] 6. RCRA TRANSPORTER

[ ] 7. RCRA STORER [ ] 8. RCRA TREATER [ ] 9. RCRA DISPOSER

[ ] 10. OTHER (specify): _____

B. IN COMPLIANCE?

[ ] 1. YES [ ] 2. NO [ ] 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number) _____

VIII. PAST REGULATORY ACTIONS

[X] A. NONE [ ] B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

[ ] A. NONE [X] B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
SITE VISIT	4-10-80	State	

X. REMEDIAL ACTIVITY (past or on-going)

[ ] A. NONE [ ] B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

NOT ON STD PRINTOUT

EPA

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION: II

SITE NUMBER (to be assigned by Hq): NJ0000010020

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (*Preliminary Assessment*). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (*EN-335*); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Interstate Concentrating Co.

B. STREET (*or other identifier*): 275 Dukes Street

C. CITY: Kearny

D. STATE: NJ

E. ZIP CODE:

F. COUNTY NAME: Hudson

G. OWNER/OPERATOR (*if known*)
1. NAME: Barry Brown, President
2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP
☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION: metal processing plant + dump site

J. HOW IDENTIFIED (*i.e., citizen's complaints, OSHA citations, etc.*): State referral

K. DATE IDENTIFIED (*mo., day, & yr.*): 4/8/80

L. PRINCIPAL STATE CONTACT
1. NAME: Bob Reed
2. TELEPHONE NUMBER:

II. PRELIMINARY ASSESSMENT (*complete this section last*)

A. APPARENT SERIOUSNESS OF PROBLEM
☐ 1. HIGH ☒ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE ☐ 5. UNKNOWN

B. RECOMMENDATION
☐ 1. NO ACTION NEEDED (*no hazard*)
☒ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: ASAP
b. WILL BE PERFORMED BY: State
☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:
☐ 4. SITE INSPECTION NEEDED (*low priority*)

C. PREPARER INFORMATION
1. NAME: John Jimenez
2. TELEPHONE NUMBER: (212) 264-1573
3. DATE (*mo., day, & yr.*): 6/16/80

III. SITE INFORMATION

A. SITE STATUS
☒ 1. ACTIVE (*Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.*)
☐ 2. INACTIVE (*Those sites which no longer receive wastes.*)
☐ 3. OTHER (*specify*): (*Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.*)

B. IS GENERATOR ON SITE?
☐ 1. NO ☒ 2. YES (*specify generator's four-digit SIC Code*):

C. AREA OF SITE (*in acres*): 3 - 4

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES
1. LATITUDE (*deg.-min.-sec.*): 40°45'05"
2. LONGITUDE (*deg.-min.-sec.*): 74°08'05"

E. ARE THERE BUILDINGS ON THE SITE?
☐ 1. NO ☒ 2. YES (*specify*): Reprocessing Plant

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Continue On Reverse

IV. CHARACTERIZATION OF SITE ACTIVITIES

Indicate the major site activity(ies) and details relating to each activity by making 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL	X	1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE	X	3. DRUMS		3. VOLUME REDUCTION	X	3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND	X	4. RECYCLING/RECOVERY	X	4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND	X	5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify)		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

Company has several lagoons used to contain process waste water & lavatory waste. Garbage dump is also present.

V. WASTE RELATED INFORMATION

A. WASTE TYPE

[ ] 1 UNKNOWN [X] 2 LIQUID [X] 3. SOLID [ ] 4 SLUDGE [ ] 5. GAS

B. WASTE CHARACTERISTICS

[ ] 1 UNKNOWN [ ] 2. CORROSIVE [ ] 3. IGNITABLE [ ] 4 RADIOACTIVE [ ] 5 HIGHLY VOLATILE
[X] 6. TOXIC [ ] 7 REACTIVE [X] 8 INERT [ ] 9 FLAMMABLE

[ ] 10. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Partial - ECKHARDT REPORT

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT Unknown	AMOUNT	AMOUNT Unknown
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			X (10) METALS		
			(11) OTHER (specify):		

Continue On Page 3 -

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Continued From Page 2

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

Mercury

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

The dump at the northeast corner of the property has accepted process waste since 1944.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER	X			Lagoons may be affecting groundwater
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL	X			Soils around lagoons & dump may contain mercury
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS	X			Several lagoons are used to hold process water
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

Continued From Front

VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

[ ] 1. NPDES PERMIT [ ] 2. SPCC PLAN [ ] 3. STATE PERMIT (specify) _____

[ ] 4. AIR PERMITS [ ] 5. LOCAL PERMIT [ ] 6. RCRA TRANSPORTER

[ ] 7. RCRA STORER [ ] 8. RCRA TREATER [ ] 9. RCRA DISPOSER

[ ] 10. OTHER (specify): None

B. IN COMPLIANCE?

[ ] 1. YES [ ] 2. NO [ ] 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number) _____

VIII. PAST REGULATORY ACTIONS

[X] A. NONE [ ] B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

[ ] A. NONE [ ] B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

X. REMEDIAL ACTIVITY (past or on-going)

[ ] A. NONE [ ] B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
Visual inspection	4/8/80	State	

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

EPA

TENTIAL HAZARDOUS WASTE SITE TENTATIVE DISPOSITION

REGION	SITE NUMBER
II	NJ000010035

File this form in the regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME	B. STREET	
Interstate Concentrating Co.	275 Dukes St.	
C. CITY	D. STATE	E. ZIP CODE
Kearny	N.J.	

II. TENTATIVE DISPOSITION

Indicate the recommended action(s) and agency(ies) that should be involved by marking 'X' in the appropriate boxes.

RECOMMENDATION	MARK 'X'	ACTION AGENCY: EPA	STATE	LOCAL	PRIVATE
A. NO ACTION NEEDED — NO HAZARD					
B. INVESTIGATIVE ACTION(S) NEEDED (If yes, complete Section III.)	X	X			
C. REMEDIAL ACTION NEEDED (If yes, complete Section IV.)					
D. ENFORCEMENT ACTION NEEDED (If yes, specify in Part E whether the case will be primarily managed by the EPA or the State and what type of enforcement action is anticipated.)					

E. RATIONALE FOR DISPOSITION

Question concerning 322,000 lbs of mercury/concrete mix which is indicated to be .018% mercury.

F. INDICATE THE ESTIMATED DATE OF FINAL DISPOSITION (mo., day, & yr.)

G. IF A CASE DEVELOPMENT PLAN IS NECESSARY, INDICATE THE ESTIMATED DATE ON WHICH THE PLAN WILL BE DEVELOPED (mo., day, & yr.)

H. PREPARER INFORMATION

1. NAME	2. TELEPHONE NUMBER	3. DATE (mo., day, & yr.)
David J. Cesareo P.E.	340-6695	4/27/81

III. INVESTIGATIVE ACTIVITY NEEDED

A. IDENTIFY ADDITIONAL INFORMATION NEEDED TO ACHIEVE A FINAL DISPOSITION.

Better understanding of material in the inactive fill. .018% mercury is very high yet summary says it is non-hazardous. Further explanation is needed before disposition can be made.

B. PROPOSED INVESTIGATIVE ACTIVITY (Detailed Information)

1. METHOD FOR OBTAINING NEEDED ADDITIONAL INFO.	2. SCHEDULED DATE OF ACTION (mo, day, & yr)	3. TO BE PERFORMED BY (EPA, Contractor, State, etc.)	4. ESTIMATED MANHOURS	5. REMARKS
a. TYPE OF SITE INSPECTION				
(1)				
(2)				
(3)				
b. TYPE OF MONITORING				
(1)				
(2)				
c. TYPE OF SAMPLING				
(1)				
(2)				

NJD009717182

EPA Form T2070-4 (10-79)

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Continue On Reverse

EPA

POTENTIAL HAZARDOUS WASTE SITE LOG

SITE NUMBER: 0000/0035

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

SITE NAME: Interstate Concentrating Company

STATE: New Jersey

ZIP CODE:

CITY: Kearny

SUMMARY OF POTENTIAL OR KNOWN PROBLEM:

ITEM	DATE OF DETERMINATION OR COMPLETION	RESPONSIBLE ORGANIZATION OR INDIVIDUAL (EPA, State, Contractor, Other)	PERSON MAKING ENTRY TO LOG FORM	DATE ENTERED ON LOG (mo.day.yr)
1. IDENTIFICATION OF POTENTIAL PROBLEM	1-10-80 ~~6-10-80~~	STATE	R. RAMON	6/10/80
2. PRELIMINARY ASSESSMENT	6/10/80	EPA	R. RAMON	6/10/80
APPARENT SERIOUSNESS OF PROBLEM	☐ HIGH	☒ MEDIUM ☐ LOW ☐ NONE ☐ UNKNOWN		
3. SITE INSPECTION	4/8/80	STATE	R. RAMON	6/10/80
4. EPA TENTATIVE DISPOSITION (check appropriate item(s) below)				
☐ a. NO ACTION NEEDED				
☐ b. INVESTIGATIVE ACTION NEEDED				
☐ c. REMEDIAL ACTION NEEDED				
☐ d. ENFORCEMENT ACTION NEEDED				
5. EPA FINAL STRATEGY DETERMINATION (check appropriate item(s) below)				
☐ a. NO ACTION NEEDED				
☐ b. REMEDIAL ACTION NEEDED				
☐ c. REMEDIAL ACTION NEEDED BUT, NO RESOURCES AVAILABLE				
☐ d. ENFORCEMENT ACTION NEEDED				
☐ (1) CASE DEVELOPMENT PLAN PREPARED				
☐ (2) ENFORCEMENT CASE FILED OR ADMINISTRATIVE ORDER ISSUED				
6. STRATEGY COMPLETED				

EPA Form T2070-1 (10-79)

Att. A. p. 10

HAZARDOUS WASTE SITE STATUS

Name & Address
Interstate Concentrating Co
275 Dukes St.
Kearny, N J

Site Number
NJ 0000/0020

Staff Responsible
John Jimenez

Agency Responsible
____ EPA X State ____ None

County
Hudson

Preliminary Assessment Rating
Medium

Date of Assessment
6/16/80

Tentative Disposition
ENF EPA 1/16/80

Date of Disposition

Site Inspection Requested ____ Yes ✓ No

Date of Request

Date of Inspection
(State [illegible])

Date of Report

Site Inspection Rating

JRB Rating

Sampling Requested ____ Yes ____ No

Date of Request

Date of Sampling

Date of Report

Final Strategy Determination - (based on sampling results)
ENF - EPA

Date of Determination
1/17/80

Enforcement by EPA ____ Yes ____ No

Date of Case Development Plan

Enforcement Team Leader

Technical Staff -

Legal Staff -

S&A Field Staff -

FIT Staff -

Enforcement Case Filed Date

Administrative Order Issued Date

Att. A. p.11

Current Location of File	File Holder
X Assessment Staff	John Timmons
____ Case Development Staff	
____ Enforcement Division	
____ Other	

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

GENERAL INSTRUCTIONS. Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency, Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Interstate Concentrating Company
B. STREET (or other identifier): 275 Dukes Street
C. CITY: Kearny
D. STATE: N J
E. ZIP CODE:
F. COUNTY NAME: Hudson

G. SITE OPERATOR INFORMATION
1. NAME: Same as above
2. TELEPHONE NUMBER:
3. STREET:
4. CITY:
5. STATE:
6. ZIP CODE:

H. REALTY OWNER INFORMATION (if different from operator of site)
1. NAME: Same as above
2. TELEPHONE NUMBER:
3. CITY:
4. STATE:
5. ZIP CODE:

I. SITE DESCRIPTION: operational metal reclaimers

J. TYPE OF OWNERSHIP
[ ] 1. FEDERAL [ ] 2. STATE [ ] 3. COUNTY [ ] 4. MUNICIPAL [X] 5. PRIVATE

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.):
B. APPARENT SERIOUSNESS OF PROBLEM
[ ] 1. HIGH [ ] 2. MEDIUM [ ] 3. LOW [ ] 4. NONE

C. PREPARER INFORMATION
1. NAME:
2. TELEPHONE NUMBER:
3. DATE (mo., day, & yr.):

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION
1. NAME: Thomas Brady
2. TITLE: Princ. Envir. Tech.
3. ORGANIZATION:
4. TELEPHONE NO. (area code & no.):

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Thomas Harrington	DWR - NJDEP	

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
Barry Brown	President	
Morley G Cole	Vice President	

Att. B, p. 1

D. GENERATOR INFORMATION (source of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
Process Waste			

E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
N/A			

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION (mo., day, & yr.)	H. TIME OF INSPECTION	I. ACCESS GAINED BY: (credentials must be shown in all cases)
April 8, 1980	10:30 A.M.	[X] 1. PERMISSION [ ] 2. WARRANT

J. WEATHER (describe)

cool, clear

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify)			

B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS

Continue On Page 3

Att. B, p. 2

Continued From Page 2

IV. SAMPLING INFORMATION (continued)

E. PHOTOS

1. TYPE OF PHOTOS

[ ] a. GROUND [ ] b. AERIAL

2. PHOTOS IN CUSTODY OF:

F. SITE MAPPED?

[X] YES, SPECIFY LOCATION OF MAPS

Attached

G. COORDINATES

1. LATITUDE (deg.-min.-sec.)

40° 45' 05"

2. LONGITUDE (deg.-min.-sec.)

74° 08' 05"

V. SITE INFORMATION

A. SITE STATUS

[X] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)

[ ] 2. INACTIVE (Those sites which no longer receive wastes.)

[ ] 3. OTHER (specify): (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

[ ] 1. NO [X] 2. YES (specify generator's four-digit SIC Code):

C. AREA OF SITE (in acres)

3 - 4

D. ARE THERE BUILDINGS ON THE SITE?

[ ] 1. NO [X] 2. YES (specify):

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
1. RAIL	X	1. PILE		1. FILTRATION		1. LANDFILL
2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
3. BARGE	X	3. DRUM		3. VOLUME REDUCTION	X	3. OPEN DUMP
4. TRUCK		4. TANK, ABOVE GROUND	X	4. RECYCLING/RECOVERY	X	4. SURFACE IMPOUNDMENT
5. PIPELINE		5. TANK, BELOW GROUND	X	5. CHEM./PHYS./TREATMENT		5. MIDNIGHT DUMPING
6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
				7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
				8. SOLVENT RECOVERY		8. OTHER (specify):
				9. OTHER (specify):		

E. SUPPLEMENTAL REPORTS If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this form.

[ ] 1. STORAGE [ ] 2. INCINERATION [ ] 3. LANDFILL [ ] 4. SURFACE IMPOUNDMENT [ ] 5. DEEP WELL

[ ] 6. CHEM/BIO/PHYS TREATMENT [ ] 7. LANDFARM [ ] 8. OPEN DUMP [ ] 9. TRANSPORTER [ ] 10. RECYCLOR/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

[X] 1. LIQUID [X] 2. SOLID [ ] 3. SLUDGE [ ] 4. GAS

B. WASTE CHARACTERISTICS

[ ] 1. CORROSIVE [ ] 2. IGNITABLE [ ] 3. RADIOACTIVE [ ] 4. HIGHLY VOLATILE

[X] 5. TOXIC [ ] 6. REACTIVE [X] 7. INERT [ ] 8. FLAMMABLE

[ ] 9. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Partial - See attached Eckhardt list

Att. B, p. 3

2. Estimate the amount (specify unit of measure) of waste by category. Mark 'X' in boxes where wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT: Unknown	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
(1) PAINT, PIGMENTS	X (1) OILY WASTES	(1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY, PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify)	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify)	(3) CAUSTICS	X (3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	X (6) OTHER (specify): mercury	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify)		

c. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)—

1. SUBSTANCE	2. FORM (mark 'X') a. SOLID	b. LIQ.	c. VAPOR	3. TOXICITY (mark 'X') a. HIGH	b. MED.	c. LOW	d. NONE	4. CAS NUMBER	5. AMOUNT	6. UNIT
Mercury				X						

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

[ ] A. HUMAN HEALTH HAZARDS

Continue On Page 5

[ ] B. NON-WORKER INJURY/EXPOSURE

[ ] C. WORKER INJURY/EXPOSURE

[ ] D. CONTAMINATION OF WATER SUPPLY

[ ] E. CONTAMINATION OF FOOD CHAIN

[X] F. CONTAMINATION OF GROUND WATER

Company has several dug lagoons for containment of scrubber cooling water, process wash water, boiler blowdown, and lavatory waste. All lagoons have overflows leading to dumpsite on north side of property. Possibility of contamination from past reclaimation of mercury and other toxic wastes.

[X] G. CONTAMINATION OF SURFACE WATER

Open dump on east side of property contains standing water with high oil/grease content. This site is used as garbage dump by company for domestic trash and some process scrap. Also spillover from lagoons reaches neighboring drainage ditches.

[ ] H. DAMAGE TO FLORA/FAUNA

[ ] I. FISH KILL

[ ] J. CONTAMINATION OF AIR

[ ] K. NOTICEABLE ODORS

[X] L. CONTAMINATION OF SOIL

Area on north and east side of property used as disposal sites. North side has been used since company first opened in 1941 for disposal of process waste. Although Mr. Brown stated that all material received for recovery is returned to origin, including scrap, he later stated by - products and unwanted materials are disposed of on-site. Mercury-containing materials were processed at the site, so probability of Mercury contamination in dumps exists, along with whatever else was processed.

[ ] M. PROPERTY DAMAGE

Continue On Page 7

[ ] N. FIRE OR EXPLOSION

[X] O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

Several lagoons are present for holding process wash water and cooling water.

[ ] P. SEWER, STORM DRAIN PROBLEMS

[ ] Q. EROSION PROBLEMS

[ ] R. INADEQUATE SECURITY

[ ] S. INCOMPATIBLE WASTES

VIII. HAZARD DESCRIPTION (continued)

[ ] I. MIDNIGHT DUMPING

[X] H. OTHER (specify)

Company is involved in reclaiming metals from scrap and used parts, using gravity seperation and washing. According to Mr. Brown and Cole, they now deal solely with brass scrap and old gas meter boxes.

The gas meters are put through a furnace to melt the solder joints and seperate the parts. Although the two company representatives stated that only before 1970 did they deal with other materials, a report from PPG Industries state that between 1973-1975 17 tons of mercury was processed on site.

It appears that an area north and east of the plant buildings has been used since 1941 as a disposal site for process wastes.

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS	HEAVILY URBANIZED AREA			
2. IN COMMERCIAL OR INDUSTRIAL AREAS	HEAVILY URBANIZED AREA			
3. IN PUBLICLY TRAVELLED AREAS	ADJACENT			
4. PUBLIC USE AREAS (parks, schools, etc.)	ALL WITHIN 1/2 MILE			

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
D. POTENTIAL YIELD OF AQUIFER	E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)	F. DIRECTION TO DRINKING WATER SUPPLY

G. TYPE OF DRINKING WATER SUPPLY

[ ] 1. NON-COMMUNITY < 15 CONNECTIONS* [ ] 2. COMMUNITY (specify town): > 15 CONNECTIONS

[ ] 3. SURFACE WATER [ ] 4. WELL

 Continue On Page 9

Att. B, p. 8

Continued From Page 8

X. WATER AND HYDROLOGICAL DATA (continued)

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark 'X')	5. COMMUNITY (mark 'X')
Process water	230'	on site	X	

I. RECEIVING WATER

1. NAME

[ ] 2. SEWERS [ ] 3. STREAMS/RIVERS

[ ] 4. LAKES/RESERVOIRS [ ] 5. OTHER (specify)

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN

[ ] A. KNOWN FAULT ZONE [ ] B. KARST ZONE [ ] C. 100 YEAR FLOOD PLAIN [ ] D. WETLAND

[ ] E. A REGULATED FLOODWAY [ ] F. CRITICAL HABITAT [ ] G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

X	A. OVERBURDEN	X	B. BEDROCK (specify below)	X	C. OTHER (specify below)
	1. SAND				
	2. CLAY				
	3. GRAVEL				

XIII. SOIL PERMEABILITY

[ ] A. UNKNOWN [ ] B. VERY HIGH (100,000 to 1000 cm/sec.) [ ] C. HIGH (1000 to 10 cm/sec.)

[ ] D. MODERATE (10 to .1 cm/sec.) [ ] E. LOW (.1 to .001 cm/sec.) [ ] F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

[ ] 1. YES [ ] 2. NO 3. COMMENTS

H. DISCHARGE AREA

[ ] 1. YES [ ] 2. NO 3. COMMENTS

I. SLOPE

1. ESTIMATE % OF SLOPE: 0

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.

J. OTHER GEOLOGICAL DATA

Filled land

Att. B, p. 9

XIV. PERMIT INFORMATION

List all applicable permits held by the facility and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRATION DATE (mo., day, & yr.)	F. IN COMPLIANCE (mark 'X')		
					1. YES	2. NO	3. UNKNOWN
None							

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

[X] NONE [ ] YES (summarize in this space)

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition *(Section II)* information on the first page of this form.

Att. B, p.10

SITE: NUMBER 1684 PAGE 1 FOR THIS SITE
INTERSTATE CONCENTRATING CO.
X----
KEARNEY,NJ X----

HUDSON

COMPANY: COMPANY-FACILITY NUMBER 41012
PPG INDUSTRIES, INC.
INDUSTRIAL CHEMICAL DIVISION
NATRIUM PLANT
P.O. BOX 191
NEW MARTINSVILLE,WV 26155

FIRST YEAR USED: 1973
LAST YEAR USED: 1975

HUNDRED TONS: 0.17
THOUSAND CUBIC YDS.: .
THOUSAND GALLONS: .

COMPOSITION OF WASTE:

HEAVY1

HEAVY3

Att. B, p. 11

LEGEND: IF LISTED, THEN PRESENT IN WASTED. IF NOT LISTED, THEN ITEM NOT PRESENT, NOT KNOWN IF PRESENT, OR DATA MISSING.

ROAD CLASSIFICATION

Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
U. S. Route
State Route
Interstate Route

1 MILE

5000 6000 7000 FEET

1 KILOMETER

NEW JERSEY

Att. B, p. 12.

HAZARDOUS WASTE SITE INVESTIGATION
Interstate Concentrating Co.,
Kearny, N.J.

TDD #02-8008-03

July 20, 1981

Participating Personnel: Fred C. Hart Associates, Inc.

Frances B. Barker, Biochemist
Mary Manto, Public Health Specialist
Peter M. Cangialosi, Sr. Environmental Engineer

Report Prepared by: Frances B. Barker

Frances B. Barker
Biochemist

FBB/hs

Frances B. Barker
Biochemist

TDD #02-8008-03

BACKGROUND

Interstate Concentrating Co. is an active brass reprocessing plant with an inactive landfill on site. The four acre plant accepts brass mill skimmings, washes them with recyclable water, and stores the upgraded material in drums. One lagoon holds the recycled plant process water. There is a municipal storm water drainage pond adjacent to the plant lagoon. A dike separates the two ponds. The inactive landfill on site contains 322,000 pounds of mercury/ concrete rubble.

NATURE OF PROBLEM

The inactive landfill on site presents no environmental or health hazard at this time. Chemical analysis of the rubble indicates that the material is nonhazardous.

There is an potential for overflow between the municipal storm water drainage pond and the plant lagoon when inflow is high.

STATUS OF INVOLVEMENT

This site should be rated low priority. No sampling is recommended at this time.

RECORD OF COMMUNICATION	☐ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE ☐ OTHER (SPECIFY) Ten Page Form (Record of item checked above)	
TO: Dr. Richard Spear	FROM: Frances Barker	DATE 3/13/81 TIME 5:00 PM

SUBJECT

INTERSTATE CONCENTRATING COMPANY TDD #02-8008-03

SUMMARY OF COMMUNICATION

The enclosed ten page form contains information on Interstate Concentrating Company located in Kearny, N.J. The site is an active brass reprocessing plant with an inactive landfill on site. The plant accepts brass mill skimmings, washes them with recyclable water, and stores the upgraded material in drums. One lagoon holds the recycled plant process water.

The inactive landfill on site contains 322,000 pounds of mercury/concrete rubble covered by two feet of fill. Chemical analysis of the material indicated that it was nonhazardous. The mercury content was .018%.

A municipal storm water drainage pond is adjacent to the plant lagoon. There is a potential for overflow from either pond to the adjacent pond when inflow is high.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

No sampling is recommended at this time.

INFORMATION COPIES TO:

EPA Form 1320-6 (7-72) REPLACES EPA HQ FORM 5300-3 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

Att. C, p. 3

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: INTERSTATE CONCENTRATING CO.

B. STREET (or other identifier): 275 Dukes Street

C. CITY: Kearny

D. STATE: NJ

E. ZIP CODE: 07032

F. COUNTY NAME: Hudson

G. SITE OPERATOR INFORMATION

1. NAME:

2. TELEPHONE NUMBER:

3. STREET:

4. CITY:

5. STATE:

6. ZIP CODE:

H. REALTY OWNER INFORMATION (if different from operator of site)

1. NAME:

2. TELEPHONE NUMBER:

3. CITY:

4. STATE:

5. ZIP CODE:

I. SITE DESCRIPTION: Active brass reprocessing plant

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.): 3/13/81

B. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☒ 3. LOW ☐ 4. NONE

C. PREPARER INFORMATION

1. NAME: Frances B. Barker

2. TELEPHONE NUMBER: (201) 621-6800

3. DATE (mo., day, & yr.): 3/13/81

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME: Frances B. Barker

2. TITLE: Field Technician

3. ORGANIZATION: Fred C. Hart Associates, Inc.

4. TELEPHONE NO. (area code & no.): (201) 621-6800

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Mary Manto	Fred C. Hart Associates, Inc.	(201) 621-6800
Pete Cangialosi	Fred C. Hart Associates, Inc.	(201) 621-6800

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, resi. etc)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
Max Frenkel	Environmental Engineer (201) 526-2802	400 North Bridge Street Bridgewater, NJ 08807
Barry Brown	President (201) 998-7660	275 Dukes Street Kearny, NJ 07032
Morley Cole	Administrative Assistant (201) 998-7660	275 Dukes Street Kearny, NJ 07032

D. GENERATOR INFORMATION (owner of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
Boise Cascade	(201) 364-4521	Main Street Rumford, Maine 04276	Mercury mixed in concrete rubble

E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION (mo., day, & yr.)	H. TIME OF INSPECTION	I. ACCESS GAINED BY: (credentials must be shown in all cases)
5/4/81	1000	[X] 1. PERMISSION [ ] 2. WARRANT

J. WEATHER (describe)
Sunny, cool (temp. 32°F)

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER		No samples taken	
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
OTHER (specify)			

FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS
	No measurements taken	
		Att. C, p.5

Continued from Page 2

IV. SAMPLING INFORMATION (continued)

C. PHOTOS

1. TYPE OF PHOTOS: N/A
   - [ ] a. GROUND
   - [ ] b. AERIAL

2. PHOTOS IN CUSTODY OF:

D. SITE MAPPED?

[X] YES. SPECIFY LOCATION OF MAPS: Fred C. Hart Associates, Inc.

E. COORDINATES

1. LATITUDE (deg.-min.-sec.): 40° 45' 05"
2. LONGITUDE (deg.-min.-sec.): 74° 08' 05"

V. SITE INFORMATION

A. SITE STATUS

[X] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.) reprocessing plant

[X] 2. INACTIVE (Those sites which no longer receive wastes.) Landfill on site

[ ] 3. OTHER (specify): (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

[ ] 1. NO [X] 2. YES (specify generator's four-digit SIC Code): _____

C. AREA OF SITE (in acres): 4 acres

D. ARE THERE BUILDINGS ON THE SITE?

[ ] 1. NO [X] 2. YES (specify): reprocessing plant

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL	X	1. PILE *		1. FILTRATION	X	1. LANDFILL *
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE	X	3. DRUMS *		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND	X	4. RECYCLING/RECOVERY *		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND	X	5. CHEM./PHYS./TREATMENT *		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify): * Within process operations		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify): * Mercury concrete rubble
					9. OTHER (specify): * Within processing operations		

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this form.

- [ ] 1. STORAGE
- [ ] 2. INCINERATION
- [X] 3. LANDFILL
- [ ] 4. SURFACE IMPOUNDMENT
- [ ] 5. DEEP WELL
- [ ] 6. CHEM/BIO/PHYS TREATMENT
- [ ] 7. LANDFARM
- [ ] 8. OPEN DUMP
- [ ] 9. TRANSPORTER
- [ ] 10. RECYCLER/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

- [ ] 1. LIQUID
- [X] 2. SOLID
- [ ] 3. SLUDGE
- [ ] 4. GAS

B. WASTE CHARACTERISTICS

- [ ] 1. CORROSIVE
- [ ] 2. IGNITABLE
- [ ] 3. RADIOACTIVE
- [ ] 4. HIGHLY VOLATILE
- [X] 5. TOXIC
- [ ] 6. REACTIVE
- [X] 7. INERT
- [ ] 8. FLAMMABLE
- [ ] 9. OTHER (specify):

C. WASTE CATEGORIES

Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Yes - Eckardt Report

Att. C, p. 6

VII. [illegible] RELATED INFORMATION (continued)

2. Estimate the amount (specify unit of measure) of waste by category: mark [illegible] to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT 322,000	AMOUNT —
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE lbs.	UNIT OF MEASURE
[ ] (1) PAINT, PIGMENTS	[ ] (1) OILY WASTES	[ ] (1) HALOGENATED SOLVENTS	[ ] (1) ACIDS	[ ] (1) FLYASH	[ ] (1) LABORATORY/PHARMACEUTICAL
[ ] (2) METALS SLUDGES	[ ] (2) OTHER (specify):	[ ] (2) NON-HALOGNTD. SOLVENTS	[ ] (2) PICKLING LIQUORS	[ ] (2) ASBESTOS	[ ] (2) HOSPITAL
[ ] (3) POTW		[ ] (3) OTHER (specify):	[ ] (3) CAUSTICS	[ ] (3) MILLING/MINE TAILINGS	[ ] (3) RADIOACTIVE
[ ] (4) ALUMINUM SLUDGE			[ ] (4) PESTICIDES	[ ] (4) FERROUS SMELTING WASTES	[ ] (4) MUNICIPAL
[ ] (5) OTHER (specify):			[ ] (5) DYES/INKS	[ ] (5) NON-FERROUS SMELTG. WASTES	[ ] (5) OTHER (specify):
			[ ] (6) CYANIDE	[X] (6) OTHER (specify): Mercury/ concrete rubble	
			[ ] (7) PHENOLS		
			[ ] (8) HALOGENS		
			[ ] (9) PCB		
			[ ] (10) METALS		
			[ ] (11) OTHER (specify):		

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X')			3. TOXICITY (mark 'X')				4. CAS NUMBER	5. AMOUNT	6. UNIT
	a. SOLID	b. LIQ.	c. VAPOR	a. HIGH	b. MED.	c. LOW	d. NONE			
Mercury	X				X					

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

[ ] A. HUMAN HEALTH HAZARDS

N/A

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☐ B. WORKER INJURY/EXPOSURE

N/A

☐ C. WORKER INJURY/EXPOSURE

N/A

☐ D. CONTAMINATION OF WATER SUPPLY

N/A

☐ E. CONTAMINATION OF FOOD CHAIN

N/A

☐ F. CONTAMINATION OF GROUND WATER

N/A

☐ G. CONTAMINATION OF SURFACE WATER

N/A

Att. C, p.8

☐ N. FIRE OR EXPLOSION

N/A

☒ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

One lagoon holds recycled plant process water. This water is used to wash skimmings from brass-producing foundries in order to separate brass from impurities.

☐ P. SEWER, STORM DRAIN PROBLEMS

Municipal storm water drainage collects in a pond adjacent to the north side of the facility. See item "U".

☐ Q. EROSION PROBLEMS

N/A

☐ R. INADEQUATE SECURITY

N/A

☐ S. INCOMPATIBLE WASTES

N/A

Att. C, p. 9

VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

N/A

☐ U. OTHER (specify):

The dike between the plant process water lagoon and the municipal storm water drainage pond is low. Water may flow between either pond when inflow is high.

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS	0	0	0	¼ mile
2. IN COMMERCIAL OR INDUSTRIAL AREAS	0	0	50	¼ mile
3. IN PUBLICLY TRAVELLED AREAS	0			
4. PUBLIC USE AREAS (parks, schools, etc.)	0			

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
Unknown	Unknown	No use
D. POTENTIAL YIELD OF AQUIFER	**E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)**	**F. DIRECTION TO DRINKING WATER SUPPLY**
Unknown	N/A	N/A

G. TYPE OF DRINKING WATER SUPPLY

☐ 1. NON-COMMUNITY <15 CONNECTIONS

☒ 2. COMMUNITY (specify name): Town of Kearny >15 CONNECTIONS

☐ 3. SURFACE WATER

☐ 4. WELL

Continue On Page 9

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Continued From Page 8

X. WATER AND HYDROLOGICAL DATA (continued)

F. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark "X")	5. COMMUNITY (mark "X")
		None		

I. RECEIVING WATER

1. NAME: Meadowlands

☐ 2. SEWERS ☐ 3. STREAMS/RIVERS ☐ 4. LAKES/RESERVOIRS ☒ 5. OTHER (specify): Wetlands

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

Unknown

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☐ D. WETLAND

☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☐ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

*X	A. OVERBURDEN	*X	B. BEDROCK (specify below)	*X	C. OTHER (specify below)
	1. SAND	X	Brunswick Formation		
	2. CLAY				
	3. GRAVEL				

XIII. SOIL PERMEABILITY

☒ A. UNKNOWN ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☐ C. HIGH (1000 to 10 cm/sec.)

☐ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

H. DISCHARGE AREA

☒ 1. YES ☐ 2. NO 3. COMMENTS:

I. SLOPE

1. ESTIMATE % OF SLOPE: Flat

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.

J. OTHER GEOLOGICAL DATA

Att. C, p.11

000

1 MILE

4000 5000 6000 7000 FEET

1 KILOMETER

AL 20 FEET

A LEVEL

MATE LINE OF MEAN HIGH WATER

OXIMATELY 5 1 FEET

P ACCURACY STANDARDS

ROAD CLASSIFICATION

Heavy-duty — Light-duty

Medium-duty — Unimproved dirt

U.S Route — State Route

NEW JERSEY

QUADRANGLE LOCATION

Att. C, p.13

ORANGE, N

N4045—W7407.

... by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, yr.)	E. EXPIRATION DATE (mo., day, yr.)	F. IN COMPLIANCE (mark "X") 1. YES	2. NO	3. UNKNOWN
N/A							

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

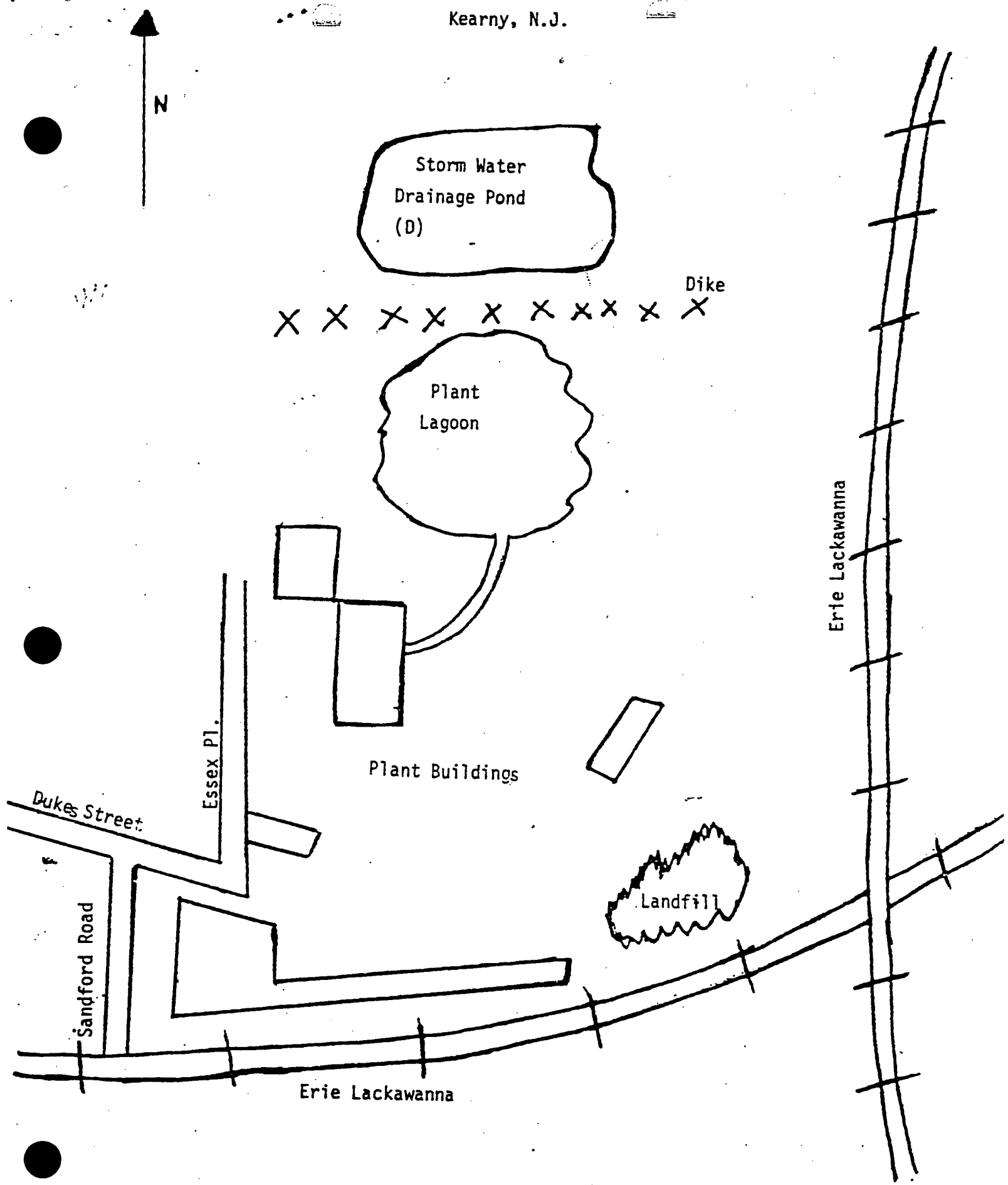
[X] NONE [ ] YES (summarize in this space)

Chemical analysis of the mercury/concrete rubble indicated that the material was nonhazardous. The mercury content was .018%.

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information on the first page of this form.

4H. C, p. 12

Kearny, N.J.



Att. C, p. 14

LANDFILLS SITE INSPECTION REPORT
(Supplemental Report)

Answer and Explain as Necessary.

1. EVIDENCE OF SITE INSTABILITY *(Erosion, Settling, Sink Holes, etc)*
☐ YES ☒ NO

2. EVIDENCE OF IMPROPER DISPOSAL OF BULK LIQUIDS, SEMI-SOLIDS AND SLUDGES INTO THE LANDFILL
☐ YES ☒ NO

3. CHECK RECORDS OF CELL LOCATION AND CONTENTS AND BENCHMARK
☐ YES ☒ NO

4. WASTES SURROUNDED BY SORBENT MATERIAL
☒ YES ☐ NO

5. DIVERSION STRUCTURES ARE EFFECTIVELY CONSTRUCTED AND PROPERLY MAINTAINED
☐ YES ☒ NO

6. EVIDENCE OF PONDING OF WATER ON SITE
☐ YES ☒ NO

7. EVIDENCE OF IMPROPER/INADEQUATE DRAINING
☐ YES ☒ NO

8. ADEQUATE LEACHATE COLLECTION SYSTEM *(If "Yes", specify Type)*
☐ YES ☐ NO N/A

8a. SURFACE LEACHATE SPRING
☐ YES ☒ NO

9. RECORDS OF LEACHATE ANALYSIS
☐ YES ☒ NO

10. GAS MONITORING
☐ YES ☒ NO

11. GROUNDWATER MONITORING WELLS
☐ YES ☒ NO

12. ARTIFICIAL MEMBRANE LINER INSTALLED
☐ YES ☒ NO

13. SPECIFIC CONTAINMENT MEASURES *(Clay Bottom, Sides, etc)*
☐ YES ☒ NO

14. FIXATION *(Stabilization)* OF WASTE
☒ YES ☐ NO

15. ADEQUATE CLOSURE OF INACTIVE PORTION OF FACILITY
☐ YES ☒ NO

16. COVER *(Type)*

Sand and gravel mixture

16a. THICKNESS

2 feet

16b. PERMEABILITY

Unknown

16c. DAILY APPLICATION
☐ YES ☐ NO

N/A

Aff. C, p.15

EPA Form T2070-3E (10-79)

SITE INSPECTION REVIEW

INTERSTATE METALS SEPARATING CORP.
AKA INTERSTATE CONCENTRATING CO.
275 DUKES ST.
KEARNY, HUDSON COUNTY, N.J.
EPA ID# NJD009717182

GENERAL INFORMATION AND SITE HISTORY

Interstate Metals Separating Corp. (IMSC) has operated a scrap metal reclamation facility at the subject site since 1943. The site covers 8.41 acres at the foot of Dukes Street (Block 252, Lots 7 and 8) and is bordered by wetland areas to the east and residential/industrial areas of Kearny on the remaining sides. The property is owned by Metals Realty Corp., which purchased the property from Johnson and Brothers File Co., in 1947. IMSC has operated at the site under a lease agreement since that time. Interstate Metals Separating Corp. may have operated under the following names during different periods of time as shown below:

Interstate Concentrating Co. (1946-1951)
Brown Metal Co. (1949-1956)
Alloys Trading Corp. (1956-1977).

SITE OPERATIONS OF CONCERN

IMSC facility operations included the following processes with approximate time periods shown below:

1. brass reclamation (late 1940's to present)
2. solder reclamation (1945 to present)
3. slag separation (1940's and 1950's)
4. nickel alloy processing (1950's)
5. mercury recovery (late 1950's to early 1960's)
6. copper recovery (1969 to 1976)

Operations currently active include brass and solder reclamation. Brass residues are recovered mechanically by a water process. Solder reclamation involves heating scrap gas meters in a rotary kiln for recovery of the melted solder. Metals handled in above processes include the following substances: antimony, chromium, copper, lead, mercury, tin, and zinc. Residues from past slag separation, brass reclamation, and mercury recovery were discharged into a vacant low-lying section of the property to the north. IMSC also received scrap aluminum from the U.S. military during the late 1940's, which was subsequently buried onsite.

During 1980 and 1981 the facility received 200-300 tons of waste rock, consisting of cement rock slabs from a factory floor of an industry in Maine which used mercury in their process. It was thought that the material contained large amounts of mercury so it was shipped to the Interstaste facility to recover the mercury. Based upon analyses of rock samples submitted by IMSC the EPA determined that the material was non-hazardous and it was shipped offsite for disposal.

Kearny Health Department files contain reports of open slag piles of metal-sand on the facility property during the 1970's. The slag piles were

subsequently removed during 1976 for use as landfill material (location unknown).

GROUNDWATER ROUTE

The site is underlain by 6-10 feet of fill material and about 30 feet of sands and silts. A clay layer of unknown extent was encountered at a depth of 38 feet during site investigations by the consulting firm J.H. Crow Company. The principal aquifer unit in the area is the Brunswick Formation, which occurs below depths of 100-200 feet in this area and is used for industrial purposes.

There are 8 monitoring wells at the site which range in depth from 12 to 38 feet. An environmental report submitted by J.H. Crow Company 9/8/87 on behalf of IMSC contains soil and groundwater sampling data. Groundwater samples were sent to Industrial Corrosion Management to be analyzed for selected metals (copper, cadmium, chromium, lead, mercury, zinc), pH and conductivty. Several metal contaminants were detected in groundwater beneath the site. Results are given in the Summary of Sampling Data section.

Ground water in the area is not used for drinking. No public or private potable wells were identified within a 3 mile radius of the site. Several industrial supply wells are located within 1-2 miles and are on the order of 200-700 feet deep. The potential for further ground water contamination exists due to the extensive soil contamination which has been documented at the site.

SURFACE WATER ROUTE

The nearest downslope surface water is Frank Creek, which is located about 1/2 mile east of the site and flows south before emptying into the Passaic River about 1 mile away. The potential for contaminants at IMSC to affect the above-mentioned surface water is low due to the distance from the site. There is an onsite lagoon which is reportedly used for process water and a pond which receives stormwater runoff. Water and sediment samples collected from the lagoon and pond indicate heavy metal contamination. Samples collected by J.H. Crow were analyzed by Industrial Corrosion Management for metals, pH, and conductivity.

AIR ROUTE

Due to the nature of operations at the IMSC facility, air contamination with metal oxides and particulates may occur if the scrubber is not operating properly. The facility has an air permit for a scrubber which is used in the solder recovery process which involves heating scrap gas meters in a kiln. Windblown dust from the site may also present a potential for air contamination. Kearny Health Department files contain complaints from area residents concerning contaminated dust from motorbike activity on unfenced portions of the site.

SOIL

Soil sampling has been conducted on several occasions by NJDEP personnel during 1981 and 1985, and J.H. Crow Company in 1987. Analytical data show gross contamination of soil with heavy metals such as copper, cadmium, lead, mercury, and zinc to depths up to 8-12 feet. PAH and PCB contamination were also detected in soil samples collected onsite. A rough estimate of the contaminated area would be about 100,000 cubic yards, assuming all 8.4 acres were contaminated to a depth of 8 feet.

DIRECT CONTACT
There have been no reported incidents of direct contact with contaminated areas onsite, however the potential exists since soil contamination has been identified in unfenced areas at the facility. A former employee of Interstate Metals has claimed to be a victim of mercury poisoning from exposure while working at the plant. The facility currently employs about 20 people; the potential exists for employees to become exposed to contaminated areas onsite.

FIRE AND EXPLOSION
Although smelting furnaces are used at the plant, the types of substances involved do not pose a potential for fire or explosive conditions.

ADDITIONAL CONSIDERATIONS
The potential for damage to flora and fauna exposure exists due to documented soil contamination and possible migration of contaminants into nearby wetland areas. Contamination of the food chain is also possible since heavy metals could impact wetland areas to the northeast. Soil contamination detected near the property border and migration of contaminated groundwater indicates a potential for damage to offsite property.

ENFORCEMENT ACTIONS
IMSC has hired the consulting firm J.H. Crow Company to investigate the extent of contamination, under the direction of NJDEP/DHWM Enforcement. A report containing soil and groundwater sampling data was submitted to NJDEP on 9/8/87. Additional sampling for EP Toxicity and offsite contamination has been requested by DHWM/Metro Regional Office.

SUMMARY OF SAMPLING DATA

The following sampling data is available at NJDEP/DHWM Metro Regional Office, 2 Babcock Place, West Orange, N.J.

A. HUDSON COUNTY REGIONAL HEALTH COMMISSION

Sampling Date:	6/14/85
Sampled By:	Hudson County Regional Health Commission
Samples:	soil-4
Laboratory:	NJDEP Bureau of Environmental Laboratories
Parameters:	chromium, mercury
Description:	all samples were collected on IMSC property located outside the fenced area.
Contaminants Detected:	chromium 68-1,470 ppm mercury 11.2-45.3 ppm
QA/QC Information:	analytical data included reagent blanks, lab duplicates, and matrix spikes. No formal QA/QC review of the data was conducted.

B. NJDEP/DHWM/METRO REGIONAL ENFORCEMENT

Sampling Date:	9/20/85
Sampled By:	NJDEP/DHWM Metro Regional Enforcement
Samples:	soil-2
Laboratory:	Environmental Testing and Certification, Edison, N.J.
Parameters:	Priority Pollutants
Sample Description:	Two composite soil samples were collected, one from various points in the unfenced portion of the property, and one from in and around the mercury recovery building.
Contaminants Detected:	Unfenced Area: beryllium (21.6 ppm), cadmium (64 ppm), chromium (249 ppm), copper (70,800 ppm), lead (12,300 ppm), mercury (40,000 ppm), nickel (1,370 ppm), selenium (30 ppm), silver (301 ppm), arochlor-1254 (2900 ppb), hexachlorobenzene (989 ppb), hexachloroethane (1,200 ppb), phenanthrene (941 ppb), pyrene (1400 ppb), fluoranthene (1590 ppb). Mercury Recovery Building: beryllium (32.3 ppm), cadmium (73.3 ppm), chromium (915 ppm), copper (49,100 ppm), lead (15,900 ppm), mercury (220 ppm), nickel (1,880 ppm), chloroform (2.74 ppb), methylene chloride (79.2 ppb), trichloroethylene (3.99 ppb), anthracene (3000 ppb), benzo(b) fluoranthene (1,200 ppb), benzo(k) fluoranthene (512 ppb), chrysene (1130 ppb), fluoranthene (2880 ppb).
QA/QC Information:	No information regarding any field or trip blank samples could be obtained. Analytical data includes QC replicates, QC blank and spiked blanks, matrix spikes, and chain of custody. There was no formal QA/QC review of the data.

C. J.H. Crow Company, Inc.

Sampling Date:	1/28/87, 1/29/87, 3/3/87, 3/4/88
Sampled By:	J.H. Crow Co.
Samples:	soil - 102 groundwater - 8 surface water - 6 sediment - 6
Laboratory:	Industrial Corrosion Management, Randolph, NJ
Parameters:	soil/sediment - copper, cadmium, chromium, lead, mercury, tin, zinc, pH, conductivity groundwater/surface water - copper, chromium, lead, mercury, zinc, pH, conductivity.
Sample Description:	Soil samples were collected onsite from 20 separate boring locations and MW #1-6 at depths up to 39 feet. The majority of samples were collected at 1 foot intervals up to 8 feet. Groundwater samples were collected from each of the 8 monitoring wells, which range in depth from 12-38 feet. Surface water and sediment samples included 3 each from the onsite lagoon and pond.
Contaminants Detected:	Soil contamination with heavy metals such as copper, cadmium, lead, mercury, and zinc was detected throughout the site at depths to 8-12 feet. Metal concentrations were above soil cleanup levels established by the Industrial Site Evaluation Element. Highest concentrations are listed below:

copper	92,000 ppm
cadmium	414 ppm
chromium	160 ppm
lead	38,600 ppm
mercury	3,470 ppm
tin	1,015 ppm
zinc	514,000 ppm

Refer to Table 1 for a summary of metal contamintion by depth. Metal contamination was also detected in groundwater with highest concentrations as follows: copper (510 ppb), chromium (243 ppb), lead (290 ppb), zinc (2100 ppb). Lagoon pond water samples showed low levels of copper and lead, less than 500 ppb. Sediment samples showed contamination with copper (92,000 ppm), lead (14,000 ppm), mercury (61.3 ppm), and zinc (300,000 ppm).

QA/QC Information:	No information regarding any field or trip blanks was evident in the sampling data and report. Analytical data include duplicate samples, method blank analyses, and chain of custody. Industrial Corrosion Management is a NJDEP Certified Drinking Water/Wastewater Laboratory (ID# 14116).

TABLE 1

METAL CONCENTRATIONS (ppm) DETECTED IN SOIL SAMPLES ACCORDING TO DEPTH.

DEPTH (feet)	# SAMPLES	Cu	Cr	Cd	Pb	Hg	Zn	Sn
0.5	14	92,000	160	117	18,360	3,470	300,000	1,015
1.0	1	3,800	-	1.9	1,240	4.9	64,400	200
2.0	14	39,900	106	414	21,100	2,160	445,000	345
2.5	1	14,300	-	180	7,130	4.1	157,000	367
3.0	3	10,200	-	6.7	1,100	1.6	16,900	[illegible]
4.0	15	64,000	68.1	173	38,600	17.8	320,000	[illegible]
5.0	3	512	-	53.3	672	3.0	28,500	ND
6.0	14	64,300	24.7	2.6	20,700	5.8	514,000	ND
7.0	1	10.7	-	-	18.5	ND	37	-
8.0	13	1,950	8.4	5.5	1,670	134	14,300	26
10.0	8	539	7.6	-	302	0.12	5,120	-
12.0	6	520	8.2	-	109	0.23	2,410	-
14.0	5	130	9.1	-	15	ND	270	-
16.0	1	34.4	4.2	-	ND	ND	580	-
18.0	1	25.5	7.0	-	ND	ND	79	-
20.0	1	23.2	4.4	-	ND	ND	46	-
24.0	1	15.0	4.6	-	ND	ND	44	-
28.0	1	25.3	9.9	-	3.7	ND	104	-
35.0	1	66.6	5.1	-	7.4	ND	308	-
37.0	1	130.0	9.8	-	14.0	ND	490	-
38.0	1	50.7	11.2	-	8.5	0.13	180	-
39.0	1	210.0	8.7	-	22.1	ND	710	[illegible]

Att. D, p. 6

RECOMMENDATIONS:
A high priority is assigned to the site due to the gross metal contamination which has been identified. Previous soil sampling and elevated OVA readings at several onsite locations warrant additional sampling for priority pollutants for soil and groundwater. NJDEP/DHWM Enforcement has requested EP Toxicity testing of onsite soils and an offsite investigation of contamination. The case is being transferred to the Bureau of Case Management.

Submitted By:

Edward Gaven

Ed Gaven, HSMS III
Bureau of Planning and Assessment
7-20-88

Site Inspection Report

Interstate Metals Separating Corp.
275 Dukes Street
Kearny, Hudson County, New Jersey

EPA ID# NJD009717182

Att. D, p. 8

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER
Interstate Metals Separating Corp.	275 Dukes Street

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG. DIST.
Kearny	NJ	07032	Hudson		

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
40 45 07	74 08 37	☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION (Month Day Year)	02 SITE STATUS	03 YEARS OF OPERATION
Several	☒ ACTIVE ☐ INACTIVE	1943 (Present (Beginning year, Ending year) ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)

☒ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☒ G. OTHER J.H. Crow Company (Specify)

05 OTHER INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Site Inspection Review			( )

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Facility contacts:			( )
Barry O. Brown	President	275 Dukes St. Kearny, NJ	(201) 998-7660
Morley G. Cole	Secretary		( )
			( )
			( )
			( )
Block 252 Lot 7 and 8 8.41 Acres			

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Ed Phillips	NJDEP/DHWM/Enforcement	(201) 669-3960

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE (Month Day Year)
Ed Gaven	NJDEP	DHWM/BPA	609-292-4320	7 20 88

EPA FORM 2070-13 (7-81)

Att. D, p. 9

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- X A SOLID
- B POWDER, FINES
- X C SLUDGE
- D OTHER _____ (Specify)
- E SLURRY
- F LIQUID
- G GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS: Unknown
CUBIC YARDS: Unknown
NO. OF DRUMS: Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- X A TOXIC
- B CORROSIVE
- C RADIOACTIVE
- X D PERSISTENT
- E SOLUBLE
- F INFECTIOUS
- G FLAMMABLE
- H IGNITABLE
- I HIGHLY VOLATILE
- J EXPLOSIVE
- K REACTIVE
- L INCOMPATIBLE
- M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSC	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Beryllium	~~7440-41-7~~		32.3	ppm
MES	Cadmium	7440-43-9		414	ppm
MES	Chromium	7440-47-3	Concentration shown	915	ppm
MES	Copper	7440-50-8	are the highest	70,800	ppm
MES	Lead	7439-92-1	levels detected in	38,600	ppm
MES	Mercury	~~7439-97-6~~	soil samples.	3,470	ppm
MES	Nickel	~~7440-02-0~~		18,800	ppm
MES	Selenium	7782-49-2		30	ppm
MES	Silver	7440-22-4		301	ppm
MES	Zinc	7440-66-6		514,000	ppm
SOL	Chloroform	~~67-66-3~~		2.74	ppb
SOL	Methylene chloride	~~75-09-2~~		79.2	ppb
SOL	Trichloroethylene	~~79-01-6~~		3.99	ppb
OCC	Anthracene	~~120-12-7~~		3000	ppb
OCC	Benzo(a)anthracene	56-55-3		665	ppb
OCC	Benzo(b)fluoranthene	205-99-2		1200	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
NJDEP Sampling Episode, ETC Analytical Data (Ref. C)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [x] A. SOLID
- [ ] B. POWDER, FINES
- [x] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [x] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [x] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers) Continued

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Fluoranthene	86-73-7		1,590	ppb
OCC	Hexachlorobenzene	118-74-1	concentrations	989	ppb
OCC	Hexachloroethane	67-72-1	shown are the	1,200	ppb
OCC	Phenanthrene	85-01-8	highest levels	941	ppb
OCC	Pyrene	129-00-0	detected in	1,400	ppb
OCC	Arochlor-1254	11097-69-1	soil samples.	2,900	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NJDEP Sampling Episode, ETC Analytical Data (Ref. C)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [X] OBSERVED (DATE 9/8/87) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Groundwater samples show contamination with metals including copper (510 ppb), lead (290 ppb), and mercury (35 ppb).

Ref. A

01 [X] B. SURFACE WATER CONTAMINATION — 02 [X] OBSERVED (DATE 9/8/87) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Water and sediment samples from an onsite lagoon and pond indicate heavy metal contamination. The lagoon is reportedly used for process water by the facility. Frank Creek is located about 1/2 mile to the east.

Ref. A

01 [X] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Due to the nature of operations, air contamination with metal oxide particulates may occur if scrubber is not operating properly. Windblown dust from the site may also present a potential for air contamination.

Ref. T,U,X

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Although smelting furnaces are used at the plant, the substances involved do not pose a potential for fire/explosive conditions.

01 [X] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Contamiantion has been identified in unfenced portions of the site, representing a potential for direct contact.

Ref. A

01 [X] F. CONTAMINATION OF SOIL — 02 [X] OBSERVED (DATE 9/8/87) — [ ] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED 8 4 Acres — 04 NARRATIVE DESCRIPTION

Soil is contaminated with heavy metals to depths up to 8 feet. Soil samples have also shown PAH and PCB contamination.

Ref. A,C

01 [X] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Potential for drinking water contamination is low since public water is supplied from outside sources, although vertical migration of contaminants may affect deeper aquifers.

01 [X] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

A former employee of Interstate Metals has claimed to be a victim of mercury poisoning from exposure while working at the plant. The potential exists for employee exposure to heavy metal contamination onsite. Ref. I

01 [X] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Access to the site is possible since a portion of facility is unfenced. Area residents have complained of contaminated dust in the air as a result of motorbike activity.

Ref. U,X

Att. D, p.12

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X J DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists due to extensive heavy metal contamination and nearby wetlands.

01 X K DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists due to documented heavy metal contamination and nearby wetland areas.

01 X L CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists due to documented heavy metal contamination and nearby wetland areas.

01 X M UNSTABLE CONTAINMENT OF WASTES — 02 X OBSERVED (DATE 9/8/87) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

Residues and tailings from brass reclamation and mercury recovery were dumped onsite during past operations. An unknown amount of alumium foil was also buried at the site. Ref. A

01 X N DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists through surface runoff and possible migration of contaminated groundwater. Soil samples collected near the property border show high levels of heavy metals. Ref. A

01 X O CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Sewer and storm drains which run through the property are reported to be damaged.

Ref. A,X

01 X P ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE _____) — X POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Hazardous materials generated as waste have been deposited throughout the site and used to fill in the marsh land.

Ref. A

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

During periods of heavy rainfall, raw sewage has been observed seeping to the surface from damaged sewer lines which run through the property.

Ref. A,X

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
NJDEP SAmpling Episode, ETC Sampling Data (Ref. C)
Trenton Dispatch Notification Report (Ref. I)
NJDEP Air Permit for Scrubber System (Ref. J)

EPA FORM 2070-13 (7-81)

Correspondence: Ecology International to Kearny Health Dept. (Ref. U)
Kearny Health Dept. Correspondence (Ref. X)

Att. D, p. 13

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A NPDES				
☐ B UIC				
☒ C AIR	Plant ID #10232	11/25/79	11/25/89	Metal roasters with scrubber
☐ D RCRA				
☐ E RCRA INTERIM STATUS				
☐ F SPCC PLAN				
☐ G STATE (Specify)				
☐ H LOCAL (Specify)				
☐ I OTHER (Specify)				
☐ J NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☒ B. PILES	Unknown	
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☒ E. TANK, BELOW GROUND	4,000	Gal.
☒ F. LANDFILL	Unknown	
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☒ G. OTHER RECYCLING RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER
- ☒ A. BUILDINGS ON SITE

06 AREA OF SITE: 8.41 acres

07 COMMENTS

01B. Slag piles containing metallic particles mixed with sand and piles of waste rock have been removed from the site.

01E. Two active 2,000-gallon tanks contain No. 2 fuel oil.

01F. Residues from brass reclamation and mercury recovery were discharged onto the ground at the site. An unknown amount of scrap aluminum is buried onsite.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Documented soil contamination indicates unstable containment of wastes.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☒ YES ☐ NO

02 COMMENTS

Contaminated areas in an unfenced portion of the site have been identified.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

IMSC Environmental Report - J. H. Crow Co. (Ref. A)
NJDEP/DHWM Enforcement Inspection (Ref. F)
NJDEP Underground Storage Tank Questionnaire (Ref. J)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☒
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 20-25 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL INDUSTRIAL IRRIGATION (No other water sources available) ☒ C. COMMERCIAL INDUSTRIAL IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER NA

03 DISTANCE TO NEAREST DRINKING WATER WELL >3 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
2-4 (ft)	West	>100 (ft)	_____ (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (including useage, depth, and location relative to population and buildings)

There are no major public or private potable supply wells within 3 miles of the site. Several industrial supply wells are located within a 1-2 miles and are on the order of 200-700 feet deep, drawing from the Brunswick formation. The Town of Kearny receives water from the North Jersey District Water Supply Commission.

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS	☐ YES ☐ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION, DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☒ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Onsite lagoon/pond	☒	Onsite (m)
Frank Creek	☐	0.5 (mi)
Passaic River	☐	1.0 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 17,800 NO. OF PERSONS	B. 57,800 NO. OF PERSONS	C. 155,300 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION < 0.10 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: Numerous

04 DISTANCE TO NEAREST OFF-SITE BUILDING < 0.10 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Site is located in an industrial area with residential areas of Kearny located a few hundred feet to the west. Population within 3 miles of site includes Kearny, Harrison, North Arlington, and portions of Belleville, Lyndhurst, and Newark.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Describe) Fill material

☐ A 10^{-1} – 10^{-6} cm sec ☐ B 10^{-4} – 10^{-6} cm sec ☒ C 10^{-4} – 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Describe) Shale

A IMPERMEABLE (Less than 10^{-6} cm sec) ☐ B RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm sec) ☒ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm sec) ☐ D VERY PERMEABLE (Greater than 10^{-2} cm sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
>100 (ft)	8-12 (ft)	6.85-11.55

06 NET PRECIPITATION	07 ONE YEAR 24-HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
12 (in)	2.5 (in)	<1 %	East-northeast	<1 %

09 FLOOD POTENTIAL: SITE IS IN NA YEAR FLOODPLAIN

☐ SITE IS ON BARRIER ISLAND COASTAL HIGH HAZARD AREA RIVERINE FLOODWAY NA

11 DISTANCE TO WETLANDS (5 acre min.): ESTUARINE A 0.25 (mi) OTHER B N/A (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species) _____ (mi) NA

ENDANGERED SPECIES _____

13 LAND USE IN VICINITY: DISTANCE TO COMMERCIAL INDUSTRIAL A <0.10 (mi); RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES B <0.10 (mi); AGRICULTURAL LANDS PRIME AG LAND C NA (mi) AG LAND D NA (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY:

Site is relatively flat. Surface runoff flows from higher elevations along Dukes St. and Tappan St. to the east across the site, and may collect in the onsite lagoon and pond. Elevations range from over 6 feet above MSL on the upland portion of the site to below sea level in the storm water pond and lagoon. The site is underlain by approximately 3 feet of fill material, 3-7 feet of organic material (meadowland mat), and sands and silts to depths of 30-40 feet. A clay layer was encountered at 38 feet during the J.H. Crow Co. investigation

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USGS Quad Map
IMSC Environmental Report - J.H. Crow Co. (Ref. A)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	8	Industrial Corrosion Management Randolph, NJ	Available
SURFACE WATER	6	Same as above	
WASTE	2	Stablex-Reuter, Camden, NJ	Available
AIR			
RUNOFF			
SPILL			
SOIL	102 2	Industrial Corrosion Management Environmental Testing Corp., Edison, NJ	Available
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
pH, conductivity	Soil pH 6.85-11.55; lagoon water pH 10.0
OVA (soil gas)	OVA readings at soil headspace: copper processing building
	1000 ppm; between building and pond 70-300 ppm; eastern edge
	of pond 700 ppm.
Geiger Counter	Area between brass operations and lead smelting bldg: 21 micro R/Hr

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS NJDEP/DHWM Metro Region Office

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
NJDEP Sampling Episode, ETC Sampling Data (Ref. C)
NJDEP Site Inspection, Sampling Data (Ref. O)
NJDEP/DHWM/BPA Pre-sampling Assessment (Ref. E)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
Metals Realty Corp.	NA
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
275 Dukes St.	NA
05 CITY / 06 STATE	07 ZIP CODE
Kearny / NJ	07032

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
12 CITY / 13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
12 CITY / 13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
12 CITY / 13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
12 CITY / 13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER
Johnson & Brothers File Co.	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER
Mendel Samuel & Sons, Inc.	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER
Metals Realty Corp.	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
275 Dukes St.	
05 CITY / 06 STATE	07 ZIP CODE
Kearny / NJ	07032

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports.)

Kearny Tax Assessor's Office 201-991-2700

EPA FORM 2070-13 (7-81)

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009717182

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME: Interstate Metals Separating Corp.	02 D+B NUMBER: 00-971-5079
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 275 Dukes St.	04 SIC CODE: 3341 5093
05 CITY: Kearny	06 STATE: NJ / 07 ZIP CODE: 08032
08 YEARS OF OPERATION: 1943-Present	09 NAME OF OWNER:

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME: NA	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME: None identified	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NJDEP Information Resource Center 609-984-2249

EPA FORM 2070-13 (7-81)

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
NA	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
NA			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
NA			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. PAST RESPONSE ACTIVITIES NA

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

EPA FORM 2070-13 (7-81)

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II PAST RESPONSE ACTIVITIES (continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE 1976, 1981 — 03 AGENCY _____
04 DESCRIPTION

Waste slag piles containing metals mixed with sand were removed in 1976; waste rock which may have contained mercury removed in 1981.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Correspondence: Waste Pile Removal (Ref. W)
Kearny Health Department Correspondence (Ref. X)

EPA FORM 2070-13 (7-81)

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D009717182

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

Interstate Metals Separating Corp. has hired a consulting firm, J.H. Crow Company to investigate the extent of contamination. An environmental report containing soil and groundwater sampling data was submitted to DHWM Enforcement in September 1987.

Additional sampling is ongoing at the request of DHWM Enforcement.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IMSC Environmental Report - J.H. Crow Co. (Ref. A)
Correspondence: NJDEP/DHWM Enforcement to IMSC (Ref. D)

EPA FORM 2070-13 (7-81)

REFERENCE NO. 8

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM	PROJECT NOTES

TO: Interstate Metals file

DATE: 09/07/99

FROM: K. Campbell (KJ)

SUBJECT: Additional Site Background Information

REFERENCE:

Region II START obtained a significant amount of site background information during the file review at the NJDEP Northern Field Office. Some relevant items from the earlier reports are summarized:

According the NJDEP information, the area north of the Interstate property is also known as Dead Horse Creek Region Contamination (Att. A). In a 10 July 1991 letter, the Hudson-Essex-Passaic Soil Conservation Project cited the site remediation project activities for being in violation of the Soil Erosion and Sediment Control Act. The letter ordered the cessation of work until the facility submitted a soil erosion and sediment control plan (Att. B).

In April 1988 National Corporate Disposal collected two composite soil samples from the property immediately north of the site for EP Toxicity Metals Leachate and Total Petroleum Hydrocarbon analyses. Laboratory Resources Inc. conducted the analyses; analytical Quality Assurance/Quality Control data are not currently available for review. After data review, the NJDEP determined that the analyses should not be used as part of the investigation (Att. C).

In July 1988, the NJDEP prepared a Responsible Party Investigation Report for the Interstate site. The report noted that during the 1950s, Interstate purchased additional property (Block 254, Lots 5A and 5B). The property was reportedly used for disposal of operation by-products, which are described as "foundry sand with metallic particles" (Att. D.)

During the December 1989 removal of the six fuel oil USTs, Interstate personnel noted that two of the USTs had leaked product to the surrounding soil and water table. The duration of the fuel oil discharge is unknown. An attorney for Interstate informed the Kearny Health Department and the NJDEP of the discharge (Att. E).

In January 1990 Interstate Metals/Metals Realty Corp. entered into an Administrative Consent Order (ACO) with the NJDEP; the ACO directed Interstate to determine the nature and extent of site contamination (Att. F). In November 1997 Tony Sheng, current owner of the property, submitted a Memorandum of Agreement (MOA) application for Non-Residential Properties to the NJDEP. The MOA noted that site operations ceased and all on-site buildings were demolished in June 1991. A Declaration of Environmental Restrictions is attached to the MOA, which includes instructions to limit the migration/disturbance of on-site contaminated soils (Att. G). In February 1998, the property title was transferred from Tony Sheng to 252 Dukes Street, Inc.; Mr. Sheng wholly owns this corporation (Att. H). The remedial action MOA was executed in March 1998 (Att. I). Further information from the state is currently unavailable.

Ref. 8

09-07-60

DEPE-081
8/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

CASE TRANSFER REPORT

The following case is being considered for possible reassignment of lead. See Instructions on back. 9212

ORIGINATING PROGRAM REPORT

IEC NO (Yes/No) Prox. Risk NO (Yes/No)
If Yes, complete Form DEP-081B.

1. Bureau/Division DRPSR/BFO-Metro Name of Person Reporting Gary Greulich Tele # (201) 669-3960
2. SITE INFORMATION
   A. Name of Site Dead Horse Creek Region Contamination
   Operator Multiple Owner Multiple
   SIA(s) Interstate Metals Off site Contamination EPA ID #
   Address Foot of Dukes Street Case ID #
   Municipality Kearny Lot NA Block NA County Hudson
   Type of Business or Operation SIC Code Approx. Acreage
   Hazardous Waste Quantity (tons) unknown
   Environmental Concerns (Check as many as apply, include number of units)

Asbestos		Dumpster		Surface Spill		UST (Reg.)	
AGST		Floor Drain		Roof Drain		UST (Nonreg.)	
Bldg. Decont.		Lagoon		Tank Farm		Waste Pile	
Discharge		Seepage Pit		Transformer		Unknown	
Drum Storage		Septic System		MVA			
Monitoring Well(s)		Potable Well(s)		Other (specify)	regional metal contamination		

If "B" is checked, complete and attach Form DEP-081A on contaminants or to detail other comments.

3. A. Project Activity Code Used RKX B. Was an RP Search Done? NO (Yes/No)
4. Other NJDEPE Programs Involved in this Case are: BGWPA/BSCM/BEERA
5. Were Local Officials notified? ☐ Yes ☐ No Date Organization

ORIGINATING PROGRAM APPROVALS

Gary Greulich 12/3/92 — Inspector/Date
[illegible] 12/3/92 — Section Chief/Date
[illegible] 12-03-92 — Bureau Chief/Date

SITE ASSESSMENT GROUP REVIEW

IEC ____(Yes/No) Prox. Risk ____(Yes/No)
If Yes, complete Form DEP-081B.

1. Case Received: (Date) 12-4-92 Project Activity Code: RKX
   Assigned to: L. Range (Date) ~~RKX~~ 12-4-92
2. Reviewer's Evaluation (Circle One) SIN / RPS Score: 29.69
   A. Remedial Level Determination C3 (B-D) Public ____ Private ____ Transfer Sequence #
   Reason for Determination

RECEIVING PROGRAM DESIGNATIONS

Backlog until SA PA/SIs done to determine source.

Per the Case Management Strategy, this case is being:

(1) Transferred to: BSCM as the Lead Program
Contact Linda Grayson Tele # 633-0719

(2) Referred to:
Div./Bureau Name Action Required
Div./Bureau Name Action Required

SITE ASSESSMENT APPROVALS

L. Range for BUF 12-7-92 — Bureau Chief/Date
Linda Range 12-7-92 — Section Chief/Date
Reviewer/Date

RECEIVING PROGRAM APPROVAL

"This is to acknowledge that case lead assignment has been approved by this Bureau."

Bureau Chief/Date

Att. A, p.1

COPIES: White - Receiving Program Green - Originating Program Yellow - Return to BSA Pink - Tracking Gold - Local Official

09-07-60

New Jersey Natural Resources Conservation Program

HUDSON-ESSEX-PASSAIC SOIL CONSERVATION DISTRICT

571 BLOOMFIELD AVE.
VERONA, N.J. 07044
Telephone: (201) 239-1886

RECEIVED
JUL 11 1991

July 10, 1991

Interstate Concentrate Co.
275 Duke Street
Kearny, NJ 07032

Re: Active remediation project
Bl. 252, lot 8, Kearny, NJ

Gentlemen:

A recent inspection of the above mentioned site indicates that the above mentioned project is in VIOLATION of the Soil Erosion and Sediment Control Act, ch. 251, N.J.S.A. To date, a soil erosion and sediment control plan has NOT been submitted to the District for review and certification and the grading obviously exceeds the minimum 5000 square feet in area.

It is at this time that I must inform you that an erosion control plan, application and associated fee be submitted to this office, as required by the Soil Erosion and Sediment Control Act, by July 31, 1991 or a STOP WORK ORDER will be issued. Please note that any attempt to work through a Stop Work Order may result in fines of up to $3000.00 per each day of violation.

Please contact me if you have any questions.

Yours truly,

Glen Van Olden
Director

cc: Jerome Wagner, Const. Official
N. Staniewicz, District Supervisor

Mr. David Oster, NJDEP, Metro Office

Att. B, p.1

Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
John J. Trela, Ph.D., Acting Director
2 Babcock Place
West Orange, N.J. 07052
201 - 669 - 3960

July 18, 1988

Dennis Krumholz, Esq.
Riker, Danzig, Scherer, Hyland & Perretti
Headquarters Plaza
One Speedwell Avenue
CN 1981
Morristown, NJ 07960-1981

RE: Interstate Metals Separating Corp.
Kearny, NJ

Dear Mr. Krumholz:

This letter serves to advise that I have completed my review of the data generated from the contamination investigation at the site directly north of Interstate Metals (Block 252, Lot 4B). The results were obtained by Ann Kruger of J.H. Crow Company and forwarded to me with a letter dated July 7, 1988. Copies of the letter and the investigation results are attached.

The problems with the investigation and the results are as follows:

1) Samples obtained during the investigation were composited for analysis from different areas of the site. Specifically, samples from test pit #1 and 1A were composited as were samples from test pit 2 and 2A. By compositing samples from 2 or more areas, the possibility exists that "clean" samples will mask samples which contain significant contamination. Using this method there is no way of determining whether or not samples obtained at test pit 1 contained hazardous waste. The method employed by National Corporate Disposal (NCD) should only be used to represent "average" site conditions. I would suspect that this was NCD's intent. The compositing method employed by NCD should not be used as a tool for delineating the extent of any contamination.

2) In his interpretation of the data, Mr. Danna indicated that the presence of hazardous or toxic substances was not detected. The reason hazardous substances were not found is that total metals analysis was not performed. EP Toxicity is used to determine whether or not a solid waste is a hazardous waste. The conclusion that since the samples did not exhibit the characteristic of EP Toxicity they do not contain hazardous substances is inaccurate. A solid waste can contain hazardous substances and not be hazardous waste.

For the two reasons cited above, the data generated by the NCB investigation should not be used as part of Interstate Metals investigation.

In the letter of July 7, 1988, Ms. Kruger indicated that a site access request has been made to the owner of Block 252, Lot 4B. Prior to performing any soil sampling, this office must receive a sampling plan proposal.

Should questions or comments arise, do not hesitate to contact me at 201-669-3960.

Sincerely,

Edward Phillips

Edward Phillips
Environmental Specialist

EP:jap

Att. C, p. 2

J. H. CROW COMPANY, INC.
365 B HOFFMAN ROAD
PORT MURRAY, NEW JERSEY 07865
201-689-0332
FAX 201-689-7818

JUL 11 1988

July 7, 1988

Edwards A. Phillips
Bureau of Field Operations
Metro Region
NJDEP Division of Hazardous Waste Management
2 Babcock Place
West Orange, NJ 07052

Re: Interstate Metals Separating Corp., Kearny, NJ

Dear Mr. Phillips:

Enclosed are environmental data provided us for the tract immediately to the north of the Interstate property. This tract is block 252, lot 4B, whose address is 199 Devon Terrace. These data were recently submitted to the Zoning Board of Adjustment of the Town of Kearny by the proposed developer of the property in connection with an application to develop this parcel of land. In reliance upon these data, the developer has taken the position before the Board that the parcel is free of contamination.

Interstate has requested permission of the property owner of this parcel to be allowed to enter onto the site to take soil samples. We are currently awaiting a reply. It is entirely possible that the response of the developer, and perhaps the owner as well, will be that no additional sampling is necessary in light of the enclosed report. We would appreciate your comments.

Sincerely yours,
For J. H. Crow Company, Inc.

Anne L. Kruger

Anne L. Kruger, Ph.D.

Enclosure

c. Thomas Shervinskie
Theodore Hayes
Dennis Krumholz, Esq.
Barry Brown

Exhibit A

NATIONAL CORPORATE DISPOSAL

ENVIRONMENTAL SERVICES

560 Hudson Street, Hackensack, NJ 07601 ■ (201) 807-0500

May 10, 1988

Geyer & Morrocco Development Company
1955 Springfield Avenue
Maplewood, New Jersey

Dear Mr. Morrocco,

RE:: Property at end of Devon Terrace, Kearney, NJ

As per your request we have conducted a sampling and analysis of your above referenced property. The purpose of this survey was to indicate whether or not the presence of contamination existed within the above referenced site.

Based on the parameters which we tested for, EP Toxicity Metals Leachate and total petroleum hydrocarbons, using the biased sampling approach as per N.J. D.E.P field sampling manual, we were unable to detect the presence of any hazardous or toxic substances.

Based upon the parameters which we tested all levels fell below the maximum allowable limits as per N.J.A.C. 7:26.

If you have any questions or require any additional information please contact me.

Sincerely,

National Corporate Disposal

Michael Danna
Environmental Coordinator

MD/cc

National Chemical Disposal
ENVIRONMENTAL SERVICES
560 Hudson Street, Hackensack, NJ 07601 ■ (201) 807-0500

Client: Geyer & Morrocco Development Company
1955 Springfield Avenue
Maplewood, New Jersey 07040
(201) 762-7100

Site Location: Property at the end of Devon Terrace, Kearney, NJ

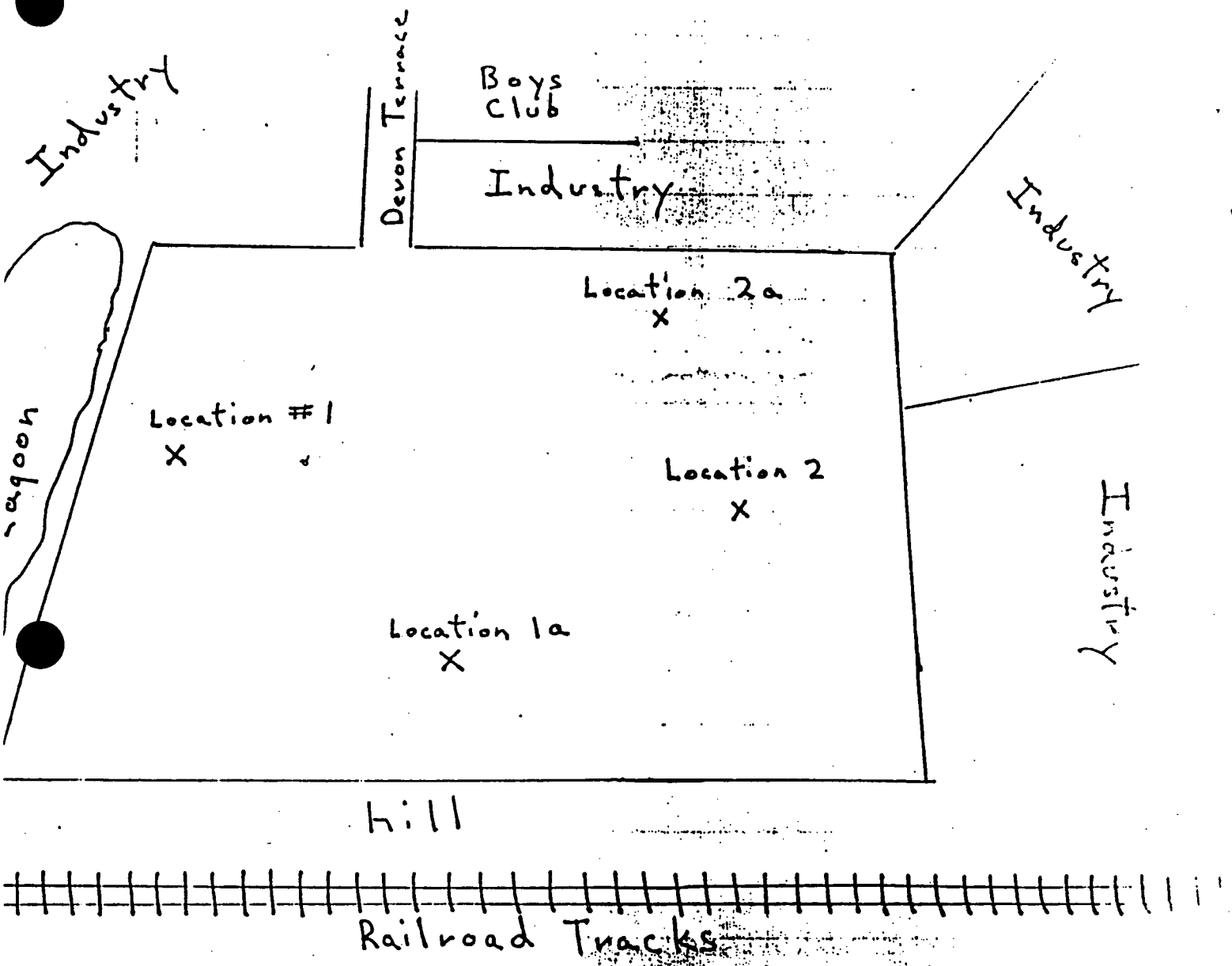
Sampling Technique: Test pits were dug using a backhoe to a depth of approximately 10 feet. The sample was obtained by removing a small portion of the dirt from each bucket until the desired depth was reached. These portions were consolidated into one sample. (Ref.: N.J.D.E.P. Field Sampling Procedures Manual Feb. 1988 pg. 151)

Sample Identification:

#1 Test Pits 1 & 1A
#2 Test Pits 2 & 2A

Sample Location: Refer to map.

Analysis:
1. EP TOX Metals
2. Total Petroleum Hydrocarbons


Industry
Devon Terrace
Boys Club
Industry
Industry
Location 2a
Location #1
Location 2
Industry
Lagoon
Location 1a
Hill
Railroad Tracks

Laboratory Resources, Inc.
363 Old Hook Road
Westwood, New Jersey 07675
201-666-6644

CLIENT: 000706
National Corporate Disposal
560 Hudson Street
Hackensack, N.J. 07601

Date of Report: 5/09/88
Sample Identification No.: 3380-33
Date Sample Received: 4/28/88
Collected From: DEVON ST. KEARNY

Sample Collected by:
Laboratory Resources, Inc. ☐
Client ☐

REPORT

EP TOXICITY

PARAMETER	Sample 1	Sample 2
Arsenic	<0.50 *	<0.50*
Barium	<1.00	<1.00
Cadmium	<0.10	<0.10
Chromium	<0.10	<0.10
Lead	<0.2	<0.2
Mercury	<0.01	<0.01
Selenium	<0.50 *	<0.50 *
Silver	<0.50	<0.50

* Tentative results. Will be confirmed by furnace.

Petroleum Hydrocarbons	1011 mg/kg dry weight	405 mg/kg dry weight

Patrick A. Corla
Manager—Laboratory Services

All results expressed in mg/ℓ unless otherwise stated. Att. G, p. 7
All analysis performed in accordance with the latest edition of Standard Methods for the Examination

RESPONSIBLE PARTY INVESTIGATION SUMMARY

INTERSTATE METALS SEPARATING CORP.
AKA INTERSTATE CONCENTRATING CO.
275 DUKES STREET
KEARNY, HUDSON COUNTY, N.J.
EPA ID # NJD009717182

Interstate Metals Separating Corporation (IMSC) has operated a scrap metal reclamation facility at the subject site since the mid-1940's. The site covers 8.41 acres at the foot of Dukes St., Block 252 Lots 7 and 8, Kearny, N.J. It is bordered by meadowland areas to the east and residential and industrial areas of Kearny on the remaining sides. The property is owned by Metals Realty Corp., which purchased the property from Johnson and Brothers File Company in 1947. Interstate Metals has operated at the site under a lease agreement since that time.

Interstate Metals Separating Corp. may have operated under the following names during various time periods as listed below:

- Interstate Concentrating Co. (1946-1951)
- Brown Metal Co. (1949-1956)
- Alloys Trading Corp. (1956-1977)

Interstate Metals Separating Corp (IMSC) incorporated in New Jersey in 1951 with its place of business listed as 275 Dukes St., Kearny, N.J. The original incorporators of IMSC were William A. Hamlin, Frederick Farran, and William R. Badger. Current Dun and Bradstreet records indicate the following corporate officers for IMSC:

1. Barry O. Brown, President
2. Morley G. Cole, Secretary

Metals Realty Corp., owner of the subject site was incorporated in 1947 (principal office 275 Dukes St.) by Jack M. Corbin, Shirley Priceman, and Dinah Pode. A Certificate of Ammendment filed in 1953 was signed by the following corporate officers:

1. Herman L. Brown, President
2. Morley G. Cole, Secretary

Interstate Concentrating Co., Brown Metal Co., and Alloys Trading Corp. all list their principal address as 275 Dukes St. or the foot of Dukes St., Kearny, N.J.

Operations by the Interstate facility included the following processes with approximate time periods shown below:

1.	brass reclamation	(late 1940's - present)
2.	solder reclamation	(1945 - present)
3.	slag separation	(1940's and present)
4.	nickel alloy processing	(1950's)
5.	mercury recovery	(late 1950's - early 1960's)
6.	copper recovery	(1969 - 1976)

Metals handled in the above processes included the following substances: antimony, chromium, copper, lead, mercury, tin, and zinc. Residues from slag separation, brass reclamation, and mercury recovery were discharged into a vacant low-lying section of the property to the north. IMSC also received aluminum foil from the U.S. military during the late 1940's, which was subsequently buried onsite.

Kearny Health Department records indicate that during the 1950's IMSC purchased a plot of land covering about 5.8 acres (now known as Block 253 Lots 5A and 5B) for landfilling of by-products from their operation, described as "foundry sand with metallic particles." Present ownership of this property is as follows:

Block 253 Lot 5A: Ann Newmark and Others, Forest Hills, NY
Block 253 Lot 5B: Port-O-Sand Corp., 450 Bergen Ave., Kearny, NJ

Hudson County Regional Health Commission and Kearny Health Department files reported dust problems from open slag piles (metal-sand) on the facility property during the 1970's. The slag piles were subsequently removed sometime during 1976 and used as landfill material (location unknown). The excavation created a stagnant pond, which still remains at the site.

During 1980 and 1981 IMSC accumulated 200-300 tons of waste rock onsite. The material consisted of cement rock slabs from a factory floor of an industry in Maine which used mercury in their operation. It was thought that the demolition material contained large amounts of mercury so it was shipped to IMSC to recover the mercury. Based upon analyses of rock samples submitted by the facility the EPA determined that the material was non-hazardous and it was shipped offsite for disposal. Samples of soil and rock were collected by NJDEP in March 1981; a copy of an analysis designated as "waste samples" showed mercury contamination up to 500 ppm. Additional soil samples were collected by NJDEP in May 1981, however no analytical data could be located in Department files.

In 1985 the Hudson Regional Health Commission collected soil samples from an unfenced area of the IMSC property; the results showed contamination with chromium and mercury up to 1470 ppm and 45 ppm, respectively.

NJDEP representatives collected 2 soil samples in September 1985 for priority pollutant analyses, one from outside the fenced area of the property and one from inside a mercury processing building. The results showed gross contamination with metals along with low levels of the following substances:

- benzo (a) anthracene
- benzo (b) fluoranthene
- chrysene
- fluoranthene
- hexachlorobenzene
- hexachloroethane
- phenanthrene
- pyrene
- arochlor-1254

IMSC hired the consulting firm J.H. Crow Company to perform an

investigation of site contamination. A report submitted in September 1987 contained a study of soil and groundwater contamination and recommendations for remedial action. The study included soil borings at 10 locations, water/sediment samples from the onsite pond and lagoon, and installation of 8 monitoring wells. Sampling data show gross soil contamination with metals at depths up to 12 feet, with much lower levels detected beyond 12 feet. The highest levels of contamination are as follows:

soil: copper (64,300 ppm), cadmium (414 ppm), lead (38,600 ppm), mercury (3470 ppm), zinc (514,000 ppm).

groundwater: copper (510 ppb), chromium (243 ppb), lead (304 ppb).

NJDEP/DHWM Enforcement referred the site to DWR/Geological Survey for a hydrogeological assessment and to the Bureau of Planning and Assessment for a preliminary assessment in September 1987.

On 11/14/87 a meeting was held between Ed Phillips, DHWM Enforcement, and Thomas Whitehead, former employee of IMSC from 1979-1983, which revealed the following information:

1. Water from the onsite lagoon was periodically pumped into a nearby manhole, and was also pumped to the solder recovery building to be used as scrubber water.

2. The lagoon was periodically cleaned by a backhoe and material dumped and spread over the northern portion of the site.

3. Mercury tailings were dumped onto an area north of the solder building.

4. Tailings from various processes and fly ash from the solder recovery operation were dumped outside the fenced area.

A follow-up inspection conducted 11/24/87 by Ed Phillips, DHWM Enforcement, indicated that contamination may extend beyond the property border, based upon visual observations and sampling data given in J.H. Crow report.

During an inspection conducted by representatives of the Bureau of Planning and Assessment and DHWM Enforcement on 2/2/88 the site was surveyed using field monitoring equipment. Relavant findings include the following:

1. The Organic Vapor Analyzer (OVA) showed elevated readings at the soil headspace at several different locations onsite ranging from several hundred ppm to over 1000 ppm.

2. The Geiger counter indicated readings above background in an area between the brass operations building and lead smelting building, up to 21 micro R/Hr.

3. Elevated pH levels were detected in the lagoon water (pH = 9.0) and in discharges to the lagoon from the brass and zinc operations (pH = 10.0).

A Supplemental Environmental Report was submitted by J.H. Crow Company to DHWM Enforcement during March 1988. A letter of response from DHWM

Enforcement to the legal firm representing IMSC indicated that two specific areas of concern have not been sufficiently addressed:

1. Soil sampling for EP Toxicity to determine whether or not contamination should be considered a hazardous waste.

2. Soil sampling to investigate any offsite contamination on properties adjacent to the IMSC site.

RECOMMENDATIONS:
Sampling data submitted by J.H. Crow Company for IMSC shows gross soil contamination with metals and low levels of groundwater contamination with selected metals. Soil samples collected by NJDEP showed contamination with metals as well as low level PAH and PCB contamination. DHWM Enforcement has requested an offsite investigation as well as EP toxicity testing to determine if the contamination identified onsite should be considered a hazardous waste. Previous soil sampling results and elevated OVA readings at several onsite locations warrant the sampling of onsite monitor wells for priority pollutants.

Interstate Metals Separating Corp. is clearly responsible for contamination which has been identified onsite. Metals Realty Corp. should also be considered a responsible party as owner of the subject site since 1947. Interstate has hired the following legal firm for representation in this matter:

Riker, Danzig, Scherer, Hyland, and Perreti
Headquarters Plaza
1 Speedwell Avenue
CN 1981
Morristown, NJ
(201) 791-0862
Contacts: Dennis J. Krumholz/Jerry Savinelli

Relavant contacts for J.H. Crow Company are as follows:

J.H. Crow Company, Inc.
365 B Hoffman Rd.
Port Murray, NJ 07865
(201) 689-0332
Contacts: John H. Crow/Anne L. Kruger

RESPONSIBLE PARTY

1. Corporate Name: Interstate Metals Separating Corp.
AKA: Interstate Concentrating Co.
Brown Metal Co./Alloys Trading Corp.
Address: 275 Dukes St.
Kearny, N.J.
Block 252 Lot 7 and 8
201-998-7660
Registered Agent: Jack M. Corbin
275 Dukes St.
Kearny, N.J.
Corporate Status: Active, SIC codes 3341, 5093. IMSC operates a single manufacturing location in Kearny, N.J., with 20 employees. NJDEP/ORS indicates corporate status as being void through proclamation, date of suspension 1/14/82.
Financial Status: Dun and Bradstreet records indicate annual sales of $3,500,000. No information on total corporate assets was available.
Principals: Barry O. Brown
President
255 Westervelt Pl.
Englewood Cliffs, N.J.
Block 307 Lot 5
1979 assessed value: $83,800

Morley G. Cole
Secretary
799 Stelton Avenue
Teaneck, N.J.
Block 3085 Lot 1
Present Value: $221,400

2. Corporate Name: Metals Realty Corp.
Address: 275 Dukes St.
Kearny, N.J.
Block 252 Lot 7 and 8
Registered Agent: Herman L. Brown
275 Dukes St.
Kearny, N.J.
Corporate Status: No information available in Dun and Bradstreet or Standard and Poors Records.

Finanicial Status: No information available in Duns Finanicial Records. Value of land plus improvements per Kearny Tax Assessor:

Block 252 Lot 7:	$ 61,300	(land)
Lot 8:	$439,700	(land)
	$190,300	(building)
	$691,300	Total

Principals: Herman L. Brown
President
608 Warwick Ave.
Teaneck, N.J.
Block 1808 Lot 15
Present value: $243,900

Att. D, p.5

Morley G. Cole
Secretary
Address and property value given under IMSC corporate principal information.

DISCHARGE/ABANDONMENT INFORMATION

Location: Interstate Metals Separating Corp. facility
275 Dukes St. (Foot of Dukes St.)
Kearny, Hudson County, N.J.
Block 252 Lots 7 and 8

Substances Discharged/Abandoned:
Soil contaminants include the following substances along with highest concentrations shown in parenthesis: beryllium (32.3 ppm), cadmium (414 ppm), chromium (915 ppm), copper (92,000 ppm), lead (38,600 ppm), mercury (3,470 ppm), nickel (18,800 ppm), selenium (30 ppm), silver (301 ppm), tin (1015 ppm), zinc (514,000 ppm), chloroform (2.74 ppb), methylene chloride (79.2 ppb), trichloroethylene (3.99 ppb), anthracene (3,000 ppb), benzo(a) anthracene (665 ppb), benzo(b) fluoranthene (1200 ppb), fluoranthene (288 ppb), hexachlorobenzene (989 ppb), hexachloroethane (1,200 ppb), phenanthrene (941 ppb), pyrene (1,400 ppb), arochlor-1254 (2,900 ppb).

Description of Property Affected:
Soil throughout the 8.41 acre site is contaminated with metals to a depth of 8-12 feet at concentrations above soil cleanup criteria established by the Industrial Site Evaluation Element. Levels of soil contamination decrease substantially below 8 feet for mercury and lead, and below 12 feet for copper and zinc. High levels of metals were detected in samples collected near the property border, indicating a potential for off-site contamination. An unknown amount of scrap aluminium is buried onsite. Neighboring properties which may be affected along with current owners are listed below.

Block 252 Lots 5 and 6, Block 275: Erie Lackawanna RR
Block 252 Lot 4B: Joseph C. Cassini, West Orange, N.J.

During the 1950's by-products from the IMSC facility were reportedly landfilled at another property in Kearny, Block 253, Lots 5A and 5B, which encompass 5.8 acres along Bergen Avenue. Current ownership is given on page 2 in the narrative summary.

Investigation Conducted By:

Ed Gaven, HSMS III EG 7/25/88
Bureau of Planning and Assessment
65 Prospect Street
Trenton, NJ 08618
609-292-4320

RELAVANT FILES:

1. NJDEP ENFORCEMENT FILES, METRO REGION
   2 BABCOCK PL.
   WEST ORANGE, N.J.
   DHWM FILE #09-07-60: FACILITY INSPECTIONS, SAMPLING DATA, CORRESPONDENCE
   DEQ FILE PLANT ID # 10272: AIR PERMIT INFORMATION

2. NJDEP/DHWM/BPA
   65 PROSPECT ST.
   TRENTON, N.J.
   PA REPORT, FACILITY INSPECTIONS

3. NJDEP INFORMATION RESOURCE CENTER
   432 E. STATE ST.
   TRENTON, N.J.
   DUN AND BRADSTREET FINANCIAL ASSESSMENTS, CORPORATE INFORMATION

4. N.J. DEPARTMENT OF STATE, DIVISION OF COMMERCIAL RECORDING
   MOUNTAIN VIEW OFFICE COMPLEX
   20 BEAR TAVERN RD.
   WEST TRENTON, N.J.
   CERTIFICATES OF INCORPORATION

5. HUDSON COUNTY ADMINISTRATION BUILDING, RECORDER OF DEEDS
   595 NEWARK AVENUE
   JERSEY CITY, N.J.
   PROPERTY DEEDS

6. HUDSON REGIONAL HEALTH COMMISSION
   313 HARRISON AVENUE
   HARRISON, N.J.
   FACILITY INSPECTIONS, SAMPLING

7. KEARNY HEALTH DEPARTMENT
   645 KEARNY AVENUE
   KEARNY, N.J.
   FACILITY INSPECTIONS, CORRESPONDENCE

8. NJDEP/DWR CENTRAL FILE
   401 E. STATE ST.
   TRENTON, N.J.]
   NO CASE FILE

9. NJDEP/DHWM/BHWE CENTRAL FILE
   401 E. STATE ST.
   TRENTON, N.J.
   NO CASE FILE

CONTACT PERSONS:

1. ED PHILLIPS
   NJDEP/DHWM ENFORCEMENT
   2 BABCOCK PL.
   WEST ORANGE, NJ
   201-669-3960

2. ED GROSVENOR/JOHN SARNAS
   KEARNY HEALTH DEPT.
   645 KEARNY AVENUE
   KEARNY, NJ
   201-997-0600

3. BOB FERRAIUOLO/GARY GARETANO
   HUDSON REGIONAL HEALTH COMMISSION
   313 HARRISON AVENUE
   HARRISON, NJ
   201-485-7001

4. Ex. 6
   FORMER EMPLOYEE, IMSC
   Ex. 6

The redacted information consists of names, addresses and/or phone numbers of private individuals. Disclosure of this information would constitute a clearly unwarranted invasion of personal privacy and thus is exempt from mandatory disclosure by virtue of Exemption 6 of the FOIA, 5 U.S.C. § 552(b)(6).

#09-07 60

Dan — F.Y.I. Case on this is handled by B.C.M. — MFC

RIKER, DANZIG, SCHERER & HYLAND

WILLIAM F. HYLAND
NICHOLAS DEB. KATZENBACH
WILLIAM C. CONNELLY
EDWARD A. ZUNZ, JR.
PETER F. ELD
PETER L. BERKLEY
BENJAMIN P. MICHEL
THOMAS E. COLLETON, JR.
GERALD A. LILOIA
JOHN P. SHERIDAN, JR.
ROBERT FISCHER III
JAMES S. ROTHSCHILD, JR.
VINCENT J. SHARKEY, JR.
DOUGLAS S. EAKELEY
DENNIS J. O'GRADY

MICHAEL K. FUREY
PHILLIP ENGLAND
MICHAEL R. COLE
GARY E. WALSH
SUSAN SCOTT
ROBERT D. BORTECK
EDWARD K. DEHOPE
SHAWN L. KELLY
MARK S. RATTNER
DENNIS J. KRUMHOLZ
ALAN E. KRAUS
GLENN A. CLARK
ROBERT J. SCHOENBERG
STUART PEIM
CAROL A. SIMON

CHARLES DANZIG
EVERETT M. SCHERER
SIDNEY M. SCHREIBER
ALEXANDER P. WAUGH
BENNETT FEIGENBAUM
HOWARD F. CASSELMAN
OF COUNSEL

SAMUEL P. MOULTHROP
CHARLES F. WASKEVICH, JR.
COUNSEL

MARYANN P. KICENUIK
VICTORIA A. MORRISON
CHARLES E. REUTHER
PAMELA P. WARNEMENT
JAN L. BERNSTEIN
SIGRID S. FRANZBLAU
NANCY STEWART
KENNETH M. VAN DEVENTER
SHARI LOE
JOHN M. PELLECCHIA
ANTHONY J. SYLVESTER
STEVEN P. BENENSON
JEFFREY S. BERGER
DAVID G. CHERNA
GLENN D. CURVING
RAFAEL PEREZ
MICHELLE ROSEN SILVERMAN
KAREN T. TESTA
ROBERT D. TOWEY
STEVEN H. TEMARES
DEBORAH T. BORSINGER

DAVID W. GARLAND
STUART M. LEDERMAN
PATTI S. LIBERMAN
JEFFREY B. WAGENBACH
ROBERT J. GILSON
JEFFREY J. MILLER
ROSALIND KENDELLEN
DANIEL C. FLEMING
JANET FALLETTI MOSS
LINDA H. PRENTISS
LAURA J. LOKKER
JEANNE M. BRATSAFOLIS
ROBERT C. DALEO
JOSEPH V. MACMAHON
WARREN J. MARTIN JR.
JOYCE A. HOWELL
DAVID W. PHILLIPS
ANDREW J. PEREL
HOWARD B. SHAPIRO
EVA J. GOLDENBERG

MARILYNN R. GREENBERG
J. SCOTT MACKAY
BARBARA SCHEADER
DAVID WALLACE
KENDALL E. JAMES*
DAVID ARCISZEWSKI
RENÉE M. BUMB
JOHN J. FARMER, JR.
SABRINA A. HODGES
DAVID B. KATZ
LYNNE ANNE ANDERSON
MICHAEL J. CALLAHAN
LORI A. CIARROCCA
JAY A. JAFFE
ANDREW M. LANKLER
SARAH J. LOCANTORE
JAMES C. MEYER
DENISE DICICCO PURSLEY
MICHAEL J. ROSSIGNOL
BEATRIX W. SHEAR
*CA. BAR ONLY

HEADQUARTERS PLAZA
ONE SPEEDWELL AVENUE
PO BOX 1981
MORRISTOWN, NEW JERSEY 07962-1981
(201) 538-0800
FAX (201) 538-1984
TELEX: 642022

744 BROAD STREET
NEWARK, NEW JERSEY 07102-3867
(201) 622-7700

132 WEST STATE STREET
TRENTON, NEW JERSEY 08608-1102
(609) 396-2121
FAX (609) 396-4578

December 27, 1989

Michael Beard, Housing Inspector
Health Department
Town of Kearny
Town Hall
Kearny Avenue
Kearny, NJ 07032

JAN 10

Re: Interstate Metals Separating Corp.
275 Duke Street, Block 252, Lots 7 and 8
Kearny, New Jersey
Discharge of Fuel Oil

Dear Mr. Beard:

This letter will confirm this firm's telephone notice on behalf of Interstate Metals Separating Corp. ("Interstate") pursuant to the New Jersey Hazardous Substance Discharge - Reports and Notices Act, N.J.S.A. 13:1K-15 et seq. to the Kearny Health Department on December 21, 1989 of a discharge of fuel oil from two (2) underground storage tanks ("UGST") at the above-captioned site (the "Site").

Interstate discovered the discharge on December 19, 1989. Also, on December 19, 1989, this firm, on behalf of Interstate, notified the New Jersey Department of Environmental Protection ("NJDEP") Spill Hotline of the discharge pursuant to the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11e (the "Spill Act").

Att. F, p.1

N1 - 21

Interstate first discovered the discharge as it was removing all of its six (6) UGSTs located at the Site under the supervision of representatives of J. H. Crow Co. ("Crow"), environmental consultant to Interstate. All of the UGSTs had contained fuel oil. Interstate had the fuel oil drained from the UGSTs one month prior to removing them. On December 18, 1989, Interstate uncovered and removed the first two (2) UGSTs without incident. However, on December 19, 1989, when Interstate uncovered the next two (2) UGSTs, it discovered that the UGSTs were sitting in water. It removed the UGSTs and noted that there was a sheen on the water, indicating the presence of oil. It also noted that the UGSTs had holes in them caused by rust and, therefore, concluded that the oil had leaked from the UGSTs into the water.

Interstate cannot determine when the UGST developed the holes and therefore, cannot determine when the apparent discharge occurred. Furthermore, because Interstate had drained the fuel oil from the UGSTs one month prior to discovering the discharge, it cannot determine how much oil was discharged.

Currently, Interstate is working with the Bureau of Case Management within NJDEP to remediate certain contamination at the Site. Therefore, Interstate also notified its Case Manager of the discharge immediately upon discovering it. When Interstate continued its efforts to remove the last two (2) UGSTs on Decemebr 21, 1989, three (3) representatives of NJDEP, two (2) of whom were from the Bureau of Case Management, inspected the discharge and observed the UGST removal efforts. After Interstate uncovered the last two (2) UGSTs, it noted the presence of oil in the soil surrounding the UGSTs. Interstate, therefore, suspects that these two (2) UGSTs also have leaked.

Interstate is awaiting instruction from Case Management regarding measures it must take in response to the discharges. In the meantime, due to the physical nature of the Site, Crow believes that the oil is not migrating from the area of the discharges. For all of the above reasons, Interstate cannot describe in detail the action it has taken to "contain" and/or remove any waste material, nor submit any other information or data as to its investigation into, or response to, the discharges as required by N.J.A.C. 7:1-7.5(b)10 through 13.

Please note that Interstate is not a "major facility" as defined by the Spill Act and, therefore, is not required to develop a Discharge Prevention Containment and Countermeasure Plan. N.J.A.C. 7:1E-4.5. Therefore, it cannot submit a copy of such plan to your office as noted in N.J.A.C. 7:1-7.5(a)1.

By copy of this letter, Interstate is filing this written report directly with NJDEP as required by N.J.A.C. 7:1-7.5(a)1.

If you have any comments or questions, please contact Dennis Krumholz of this office or me as the authorized representatives of Interstate.

Very truly yours,

Sarah L. Monaghan

Sarah L. Monaghan

SLM:jek

cc: New Jersey Department of Environmental Protection
Attn: Assistant Director

Lynne Leshefsky, Case Manager
New Jersey Department of Environmental Protection

Barry Brown, President
Morley Cole, Vice President
Interstate Metals Separating Corp.

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

Lance R. Miller, Acting Director

CN 028

Trenton, N.J. 08625-0028

609 633-1408

IN THE MATTER OF THE INTERSTATE METALS SITE AND INTERSTATE METALS SEPARATING CORP.; and METALS REALTY CORP.	:	ADMINISTRATIVE CONSENT ORDER

Respondents

This Administrative Consent Order is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "NJDEP" or the "Department") by N.J.S.A. 13:1D-1 et seq. and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq. and duly delegated to the Assistant Director for the Responsible Party Cleanup Element, Division of Hazardous Waste Management, pursuant to N.J.S.A. 13:1B-4.

FINDINGS[1]

1. Interstate Metals Separating Corp., a New Jersey corporation, (hereinafter "Interstate Metals" or "Respondent"), which may also be known or have been known as "Interstate Concentrating Co.", "Brown Metal Co." and "Alloys Trading Corp." (hereinafter "Respondents"), operates a metals reclaiming and recovery facility on an approximately 8.41 acre parcel located at or around 275 Dukes Street, Kearny, Hudson County, New Jersey, designated as Block 252, Lots 7 and 8 on the Town of Kearny municipal tax map, (hereinafter, "the Site"). The Site is located in the Hackensack Meadowlands between the Passaic River and the Hackensack River and is presently bordered by meadowland areas to the east and northeast, and by industrial areas of Kearny on the remaining sides. There is a residential area within one-quarter (1/4) of a mile of the Site.

2. Metals Realty Corp., a New Jersey corporation, (hereinafter "Metals Realty" or "Respondent"), with its principal offices located at 275 Dukes Street, Kearny, Hudson County, New Jersey, is the current owner of the Site , having purchased the property in the 1940's. Prior to its purchase of the Site the property was reportedly unused.

3. Since the late 1940's, Respondents have conducted a metals reclamation operation at the Site. The operation presently utilizes a water

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carrier to mechanically recover brass and other metals from brass mill residues. Interstate Metals has reported to the Department that the brass reclamation operation was conducted as described below is the only currently active metals reclaiming and/or recovery operation on the Site. Within either of the two brass reclamation building at the Site, process water carrying brass mill materials passes through several mechanical separation processes, including a shaker table, each of which removes progressively smaller pieces of the denser metallic materials. From a shaker table the process water flows into one of three large concrete block settling basins. In the settling basin a material of the recycling operation, whose primary constituent is zinc, settles out. This material, which contains zinc, is periodically removed and transferred to dewatering and drying area which is surrounded by a berm. After drying in the drying building the zinc material is transferred to a stockpile on the Site until sold as an agricultural soil additive. The process water from the settling basins, and overflow from the floor drains of the brass reclamation buildings flow into an unlined horseshoe shaped lagoon located on-site. The lagoon is used for the temporary storage of process water until it is recycled through the separation process. Respondents reported in their initial environmental reported submitted to the Department that from the late 1940's to the mid 1960's, process water from the brass reclamation building flowed onto the low-lying area located north/northeast of the horseshoe shaped lagoon which is presently referred to as the "pond area". A berm was constructed around the pond area to help contain the standing water. When must of the water had been removed from the zinc by evaporation, draining off or seepage into the ground, the zinc material was sold.

4. Beginning in approximately the 1940's, Respondents processed composition slags on the Site using a process similar to that described in Paragraph 3 above. Interstate Metals has reported that composition slag separation process was conducted as described below. As part of the separation process, particles with a lower specific gravity and a lower metallic content were carried in the process water which flowed into the pond area. In the pond area the less dense fraction settled to the ground and the process water then flowed into the unlined horseshoe shaped lagoon. A berm around the pond area controlled the flow of water after it was released from the separation building. Most of the water drained back to the lagoon fro which it was recycled as process water. Some of the water was lost to evaporation or seepage into the ground. Respondents either sold the material that settled out into the pond area or used the material to construct the berms. Interstate Metals has reported to the Department that this operation had been discontinued by the mid 1960's.

5. From approximately 1946 to 1988, Respondents conducted a solder reclamation operation at the Site. In approximately 1965, an air scrubber system was installed in this operation which used water to wash pollutants and/or hazardous substances, emitted from the furnace, out into the air. Respondents periodically removed particulates (fly ash) from the scrubber system. Interstate Metals has reported to the Department that this operation has been discontinued.

6. Beginning in approximately the 1950's, Respondents processed nickel alloy materials at the Site, containing nickel, copper and chromium, using a process similar to the one described in Paragraph 4 above.

Interstate Metals has reported to the Department that this operation has been discontinued.

7. Beginning in approximately the late 1950's, Respondents reclaimed mercury at the Site from materials containing mercury using a process similar to the one described in Paragraph 3 above. Interstate Metals reported process water residuals from its mercury operation flowed into a concrete lined settling basin where the mercury product settled out. Overflow from the settling basin flowed into the pond area and eventually flowed back into the lagoon. Interstate sold the mercury product recovered from this process back to the supplier. Interstate Metals has reported to the Department that this operation had been discontinued in the 1960's.

8. Beginning in approximately 1969, Respondents recovered copper and aluminum at the Site from aluminum and copper wire, employing a burning process which removed the insulation from the wire. Interstate Metals has reported to the Department that this operation has been discontinued.

9. On August 10, 1972, the Kearny Health Department, issued a Summons to Interstate Metals for dust emanating from its property.

10. By letter dated June 29, 1976, the Kearny Health Department informed Interstate Metals that dust was emanating from Interstate Metals' slag piles which was interfering with the comfort of area residents and workers in violation of the New Jersey Air Pollution Control Code.

11. By letter dated July 14, 1976, Interstate Metals advised the Kearny Health Department that the slag piles at the Site would be removed during the summer of 1976 and would be used off-site as fill material. Interstate Metals reported that it removed the berms XX which had been erected from material from the composition slag and the nickel alloy processes.

12. Interstate Metals states in a letter dated August 28, 1978 to the Hudson Regional Health Commission, that unconsolidated sand metal piles were present on the Site and there was dust emanating from the plant's premises.

13. On May 19, 1982, the Kearny Health Department notified Interstate Metals that the elimination of the slag piles created a stagnant pond at the site. In addition the Kearny Health Department notified Interstate Metals that the pond should be eliminated.

14. In the summer of 1984, the Department collected soil samples from inside a fenced area of the Site for the purpose of mercury analysis. Mercury was found in three surface samples in concentrations ranging from 12.7 ppm to 44.1 ppm. Mercury was also found at a concentration of 7.92 ppm in a sample of soil obtained at a depth of 18 to 30 inches.

15. On June 14, 1985, the Hudson Regional Health Commission collected four soil samples from outside of the fenced area of the Site for the purpose of mercury and chromium analysis. Mercury and chromium were found in concentrations ranging from 11.2 ppm to 45.3 ppm and from 68.1 ppm to 1,470 ppm, respectively.

16. In September 1985, the Department collected two composite soil samples, one from outside of the fenced area of the Site and one from inside a mercury processing building, for the purpose of priority pollutant analysis. The substances found in the highest concentration of each substance expressed include: antimony (380 parts per million), arsenic (13 ppm), beryllium (32.3 ppm), cadmium (73.3 ppm), chromium (915 ppm), copper (70,800 ppm), lead (15,900 ppm), mercury (40,000 ppm), nickel (1,880 ppm), selenium (30 ppm), silver (301 ppm), thallium (0.5 ppm), cyanide (total) (1.0 ppm), phenolics (total) (0.8 ppm), Aroclor 1254 (2,900 ug/kg), heptachlor (230 ug/kg), anthracene (3,000 ug/kg), benzo(a) anthracene (665 ug/kg), benzo(a) pyrene (223 ug/kg), benzo(b) fluoranthene (1,200 ug/kg), benzo(k) fluoranthene (512 ug/kg), chrysene (1,130 ug/kg), fluoranthene (2,880 ug/kg), hexachlorobenzene (989 ug/kg), hexachloroethane (1,200 ug/kg), phenanthrene (941 ug/kg), pyrene (1,400 ug/kg), chloroform (2.74 ug/kg), methylene chloride (79.2 ug/kg) and trichloroethylene (9.90 ug/kg).

17. On January 8, 1986, the Department and the Kearny Health Department attended a meeting at Interstate Metals in order to discuss the results of the soil samples taken from inside and outside of the area of the Site. The Department advised Interstate Metals at that time that remedial actions were necessary at the Site.

18. On July 9, 1986, Interstate Metals submitted to the Department a response to an Underground Storage Tank Questionnaire. Interstate Metals indicated in its response that five underground storage tanks with a combined capacity of 13,000 gallons were present at the Site. Interstate Metals reported that a 5,000 gallon tank and two 2,000 gallon tanks had previously been used to store home heating oil (No. 2) and were abandoned in place. Interstate Metals also reported that two 2,000 gallon tanks were still operational and contained home heating oil (No. 2).

19. Interstate Metals submitted to the Department an "Environmental Report", dated September 2, 1987, which contained a study of soil and groundwater conditions along with recommendations for remedial action. Interstate Metals indicated in its Environmental Report that zinc, copper, lead and mercury concentrations above the NJDEP guidelines for levels of concern were present in the soil at the Site at depths of not much beyond twelve (12) feet. Interstate Metals reported that the highest concentrations of contaminants found at the Site included but were not limited to:

a. Soil: copper (64,300 ppm), cadmium (414 ppm), lead (38,600 ppm), mercury (3,470 ppm), tin (1,015 ppm) and zinc (514,000 ppm).

b. Lagoon sediment: copper (92,000 ppm), chromium (90.8 ppm), lead (14,000 ppm), mercury (190 ppm) and zinc (300,000 ppm).

c. Pond sediment: copper (30,000 ppm), chromium (160 ppm), lead (11,000 ppm), mercury (780 ppm) and zinc (68,000 ppm).

d. Groundwater: copper (510 parts per billion, hereinafter "ppb"), cadmium (3 ppb), chromium (243 ppb), lead (290 ppb) and zinc (2,100 ppb).

e. Lagoon water: copper (410 ppb), lead (304 ppb) and zinc (70 ppb).

f. Pond water: copper (430 ppb), lead (136 ppb), mercury (4 ppb) and zinc (480 ppb).

20. On November 13, 1987 a Department inspection revealed that the on-site pond referenced above in paragraph 11 was overflowing and that the water from it was discharging into channels and flowing off the Site.

21. On November 14, 1987, a former employee of Interstate Metals reported to the Department that the following incidents had taken place at the Site:

a. Water from the on-site lagoon had been periodically discharged into the adjacent storm water sewer and/or into the pond on the northern portion of the Site.

b. Water from the on-site lagoon that Interstate Metals discharged from its solder recovery process was acidic and that, at times when the air scrubber system used in the solder recovery process was halted, process water overflowed and discharged on to the ground surface of the Site.

c. Materials from the various metals reclamation operations were periodically removed from the lagoon with a backhoe, dumped in an area north of the lagoon and then subsequently spread over the northern portion of the Site.

d. Tailings from the mercury reclamation process had been discharged to an area north of the solder recovery building.

e. Fly ash, from the solder recovery process, and tailings from Interstate Metals' various processes had been dumped on and/or adjacent to the Site outside of the fenced in area.

f. The pond on the northern portion of the Site was periodically drained, when levels became exceedingly high, by discharging its contents into the manhole on the storm water sewer near the on-site lagoon.

22. On December 2, 1987, representatives from Interstate Metals and the Department met to discuss the Environmental Report referenced in Paragraph 19 above. The Department advised Interstate Metals at that time, that based upon the data presented, significantly high levels of contamination exist beyond the Interstate Metals' property boundary and that no remediation proposal which failed to include a complete delineation of the contamination would be acceptable to the Department. The Department also advised Interstate Metals that additional ground water testing was required and that the boring logs must be submitted.

23. By letter dated February 4, 1988, the Department advised Interstate Metals that further investigation of the Site would be required. Specific requirements placed upon Interstate Metals by the Department included but were not limited to:

a. Full delineation of off-site contamination;

b. Additional on-site soil sampling;

c. Soil sample analysis for total metals and E.P. Toxicity;

d. Installation of piezometers to determine local ground water flow direction;

e. A prohibition against the screening of monitoring wells across strata;

f. Ground water sample analysis for dissolved metals;

g. Submission of a Sampling Plan to the Department; and

h. Submission of the boring logs of all monitor wells.

The Department further advised Interstate Metals at that time that it should consult with NJDEP's Division of Water Resources, Permit Section, to determine whether a discharge permit would be required for the lagoon referenced in paragraph 3 above.

24. On March 15, 1988, Interstate Metals submitted to the Department a report entitled, "Interstate Metals Separating Corp., Working Document for Environmental Report Addendum A", as well as Appendices 1, 2 and 3 to the Environmental Report referenced in paragraph 19 above. Interstate Metals submitted these documents in response to questions posed to them at the December 2, 1987 meeting and in the Department's letter of February 4, 1988.

25. By letter dated April 27, 1988, the Department advised Interstate Metals that the reports, referenced in Paragraph 24 above, did not address all the additional requirements required by the Department referenced in Paragraph 23 above. The April 27, 1988 letter specifically notified Interstate Metals of Interstate Metals' failure to analyze soil samples for E.P. Toxicity and to fully delineate off-site contamination.

26. On July 7, 1988, Interstate Metals submitted to the Department sampling data from an off-site property known as 199 Devon Terrace located immediately to the north of the Site. ~~in an effort to demonstrate that the property north of the Site was not contaminated.~~ This data was generated from samples taken by the proposed developer of 199 Devon Terrace and indicated that 199 Devon Terrace was not contaminated. The Department rejected this data due to errors in sampling and analysis methods.

27. On December 9, 1988, a Department inspection at the Site revealed the following:

a. The brass reclamation operation appeared to be the only currently active metals reclaiming and/or recovery operation remaining at the Site.

b. Interstate Metals was discharging the process wastewater from the settling basins referenced above in paragraph 3 into the floor

drains in the brass reclamation building which ultimately was being discharged to the on-site lagoon.

c. The material from the settling basins was stored within an bermed area for further dewatering and/or drying. Dried material was stockpiled on an unpaved area adjacent to the settling basins.

d. A large pond was present on the northern portion of the Site which extended to the north approximately 50 to 100 feet beyond the Site. The pond was connected to a series of channels that funneled into a low-lying, marsh-like area to the north and east of the Site.

e. The Site and the adjacent property to the north of the Site appeared to be devoid of vegetation and was relatively flat with the exception of a large area of depression in which the pond was located.

f. Piles of raw materials and materials the various metals reclamation operations were present on-site.

g. An area on the adjacent property beyond the north eastern end of the Site appeared to have been filled with materials from a processing operation.

h. Piles of Interstate Metals' process materials and discarded aluminum foil, which appeared to have been created by surficial dumping or bulldozing, were observed in off-site areas.

i. The manhole on the storm sewer across from the lagoon appeared to have been damaged.

28. On February 27, 1989, the Department held a NJPDES pre-application conference with representatives of Interstate Metals to discuss the applicability of a NJPDES permit; the type of permit required; and the applicability of certain NJPDES regulations to Interstate Metals specifically N.J.A.C. 7:14A-6.15(d)2 and N.J.A.C. 7:14A-6.2(a)1-2.

29. On March 13, 1989, Interstate Metals submitted at the request of the Department an application for a NJPDES permit. In the application Interstate Metals stated that additional information would be submitted later as "Environmental Report -- Addendum B" (hereinafter "Addendum B Report").

30. On June 16, 1989, Interstate Metals submitted the Addendum B Report to the Department which focused on the use of the Site and its effect on the ground water at the Site.

31. The substances referenced in paragraphs 14, 15, 16 and 19 above are hazardous substances pursuant to the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11b(k).

32. The hazardous substances referenced above were discharged and continue to discharge into the waters and onto the lands of the State of New Jersey, in violation of the Spill Compensation and Control Act, specifically N.J.S.A. 58:10-23.11c.

33. The substances referenced in paragraphs 14, 15, 16 and 19 above are pollutants pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-3n.

34. Respondents discharged the pollutants referenced above onto the lands and into the waters of the State of New Jersey without a valid New Jersey Pollution Discharge Elimination System permit in violation of the Water Pollution Control Act, specifically N.J.S.A. 58:10A-6.

35. Respondents are responsible for the discharges referenced in in paragraphs 3, 4, 5, 6, 7, 13, 14, 15, 16, 19, 20 and 21.

36. Based on these FINDINGS, the Department has determined that Respondents have violated the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., specifically N.J.S.A. 58:10A-6, and the regulations promulgated pursuant thereto, N.J.A.C. 7:14A-1 et seq., specifically N.J.A.C. 7:14A-1.2(c) and/or the Spill Compensation and Control Act, 58:10-23.11 et seq. and regulations promulgated pursuant thereto, N.J.A.C. 7:1E-1.1 et seq.

37. To determine the nature and extent of the problem presented by the discharge of pollutants and/or hazardous substances at the Site and adjacent areas and to develop environmentally sound remedial actions, it is necessary to conduct a remedial investigation and feasibility study of remedial action alternatives (hereinafter "RI/FS") for the Site and adjacent areas. To correct the problems presented by the discharges, it is necessary to implement a remedial action plan.

38. To resolve this matter without the necessity for litigation, Respondents have agreed to conduct an RI/FS for the Site and adjacent areas and to design and implement a remedial action alternative to remedy all pollution at or emanating from the Site, or which has emanated from the Site.

ORDER

NOW THEREFORE IT IS HEREBY ORDERED AND AGREED THAT:

I. Penalty and Reimbursement of Damages

A. Penalty

39. Within fourteen (14) calendar days after the effective date of this Administrative Consent Order, Respondents shall pay a penalty of $35,000.00 to the Department, by a cashier's or certified check payable to the "Treasurer, State of New Jersey", for the violations referenced in the FINDINGS hereinabove.

B. Reimbursement of Prior Costs and Damages

40. Within thirty (30) calendar days after receipt from the Department of a summary accounting of all costs incurred by the Department in connection with the investigation of, and response to, the matters described in the FINDINGS hereinabove, including the costs associated with the preparation of this Administrative Consent Order, Respondents shall submit to the Department a cashier's or certified check payable to the "Treasurer, State of New Jersey" for the full amount of the Department's prior costs. Payment shall be submitted to the contact listed in Paragraph 66 below.

II. Remedial Investigation and Cleanup

A. Remedial Investigation

41. Within sixty (60) calendar days after the effective date of this Administrative Consent Order, Respondents shall provide to the Department:

a. a summary of each metal, hazardous substance and pollutant now existing and formerly existing at the Site, which clearly details the date of arrival at the Site; the manufacturing, recycling, storage and transportation history and practices as to each such metal and contaminant, and the names of all persons and entities who have sold, traded, gave, leased, consigned, owned, used, recycled, preserved, stored, moved and controlled such metals and contaminants.

b. a detailed description of all manufacturing, recycling and storage practices presently engaged in by your company and by any other individuals or companies on the Interstate Metals Site.

c. the name of the individuals and companies that presently have an ownership or interest in: (i) the Site or any portions thereof; (ii) the Interstate Metals Corp. business and machinery, equipment and inventory; and (iii) raw materials; products and wastes related to operations on the Site.

The information required in this paragraph only shall be submitted to:

New Jersey Department of Environmental Protection
Division of Regulatory Affairs
401 East State Street - Seventh Floor
CN-402
Trenton, New Jersey 08625

42. Within sixty (60) calendar days after Respondents receipt of the Department's final written comments on the Addendum A and B, referenced in above, Respondents shall submit to the Department a detailed draft Remedial Investigation Work Plan (hereinafter the "RI Work Plan") which shall conform to the Department's written comments and shall be prepared in accordance with the scope of work set forth in Appendices A, B and C, attached hereto and made a part hereof.

43. Within thirty (30) calendar days after Respondents' receipt of the Department's written comments on the draft RI Work Plan, Respondents shall modify the draft RI Work Plan to conform to the Department's comments and

shall submit a modified RI Work Plan to the Department. The determination as to whether or not the modified RI Work Plan, as resubmitted, conforms to the Department's comments and is otherwise acceptable to the Department shall be made solely by the Department in writing.

44. Upon receipt of the Department's written final approval of the RI Work Plan, Respondents shall conduct the remedial investigation in accordance with the approved RI Work Plan and the schedule therein.

45. Respondents shall submit to the Department a draft Remedial Investigation Report (hereinafter "RI Report") in accordance with Appendix A and the RI Work Plan and the schedule therein.

46. If, upon review of the draft RI Report, the Department determines that additional remedial investigation is required, Respondents shall conduct additional remedial investigation as directed by the Department and submit a second draft RI Report.

47. Within thirty (30) calendar days after Respondents' receipt of the Department's written comments on the draft (or second draft, whichever is applicable), Respondents shall modify such draft RI Report to conform to the Department's comments and shall submit the modified RI Report to the Department. The determination as to whether or not the modified RI Report, as resubmitted, conforms with the Department's comments and is otherwise acceptable by the Department shall be made solely by the Department in writing.

B. <u>Feasibility Study</u>

48. Within forty-five (45) calendar days after Respondents' receipt of the Department's written final approval of the RI Report, or as otherwise directed by the Department, Respondents shall submit to the Department a detailed draft Feasibility Study Work Plan (hereinafter, "FS Work Plan") in accordance with the scope of work set forth in Appendix D, attached hereto and made a part hereof.

49. Within thirty (30) calendar days after Respondents' receipt of the Department's written comments on the draft FS Work Plan, Respondents shall modify it to conform to the Department's comments and shall submit a modified FS Work Plan to the Department. The determination as to whether or not the modified FS Work Plan, as resubmitted, conforms to the Department's comments and is otherwise acceptable to the Department shall be made solely by the Department in writing.

50. Upon receipt of the Department's written final approval of the FS Work Plan, Respondents shall conduct the feasibility study in accordance with the approved FS Work Plan and the schedule therein.

51. Respondents shall submit to the Department a draft Feasibility Study Report (hereinafter "FS Report") in accordance with Appendix D and the approved FS Work Plan and the schedule therein.

52. Within thirty (30) calendar days after Respondents' receipt of the Department's written comments on the draft FS Report, Respondents shall

modify the draft FS Report to conform to the Department's comments and shall submit the modified FS Report to the Department. The determination as to whether or not the modified FS Report, as resubmitted, conforms to the Department's comments and is otherwise acceptable to the Department shall be made solely by the Department in writing.

C. Remedial Action

53. The Department will make the selection of the remedial action alternative based on the criteria set forth in Appendix D, Section I.D.

54. Within forty-five (45) calendar days after Respondents' receipt of the Department's written notification of selection of a remedial action alternative, Respondents shall submit to the Department a detailed draft Remedial Action Plan in accordance with the scope of work set forth in Appendix E, attached hereto and made a part hereof.

55. Within thirty (30) calendar days after Respondents' receipt of the Department's written comments on the draft Remedial Action Plan, Respondents shall modify the draft Remedial Action Plan to conform to the Department's comments and shall submit the modified Remedial Action Plan to the Department. The determination as to whether or not the modified Remedial Action Plan, as resubmitted, conforms to the Department's comments and is otherwise acceptable to the Department shall be made solely by the Department in writing.

56. Upon receipt of the Department's written final approval of the Remedial Action Plan, Respondents shall implement the approved Remedial Action Plan in accordance with the schedule therein.

D. Additional Remedial Investigation and Remedial Action

57. If at any time prior to Respondents' receipt of written notice from the Department pursuant to Paragraph 109 the Department determines that any or all of the criteria set forth in Appendix D (Section I.D.) are not being achieved, or that additional remedial investigation and/or remedial action is required to protect human health or the environment, Respondents shall conduct such additional activities as directed by the Department and in accordance with this Administrative Consent Order.

E. Progress Reports

58. Respondents shall submit to the Department quarterly progress reports; the first progress report shall be submitted on or before the 30th calendar day of the month following the first full quarter after the effective date of this Administrative Consent Order. Each progress report thereafter shall be submitted on or before the 30th calendar day of the month following the quarter being reported. Each progress report shall detail the status of Respondents' compliance with this Administrative Consent Order and shall include the following:

a. Identification of Site and reference to this Administrative Consent Order;

b. Identify specific requirements of this Administrative Consent Order (including the corresponding paragraph number or schedule) which were initiated during the reporting period;

c. Identify specific requirements of this Administrative Consent Order (including the corresponding paragraph number or schedule) which were initiated in a previous reporting period, which are still in progress and which will continue to be carried out during the next reporting period;

d. Identify specific requirements of this Administrative Consent Order (including the corresponding paragraph number or schedule which were completed during this reporting period;

e. Identify specific requirements of this Administrative Consent Order (including the corresponding paragraph numbers or schedule) which should have been completed during the reporting period but were not so completed;

f. An explanation of any non-compliance with any approved work plan(s), schedule(s) or Remedial Action Plan, and actions taken or to be taken to rectify non-compliance;

g. Identify the specific requirements of this Administrative Consent Order (including the corresponding paragraph number or schedule) that will be initiated during the upcoming reporting period.

III. Permits

59. This Administrative Consent Order shall not be construed to be a permit, or to be in lieu of a permit, for future activities which require permits and it shall not relieve Respondents from obtaining and complying with all applicable Federal, State and local permits necessary for any future activities which Respondents must perform in order to carry out the obligations of this Administrative Consent Order.

60. Respondents shall submit complete applications for all Federal, State and local permits required to carry out the obligations of this Administrative Consent Order in accordance with the approved time schedules.

61. Within thirty (30) calendar days after Respondents' receipt of written comments concerning any permit application to a Federal, State or local agency, or sooner if required by the permitting agency, Respondents shall modify the permit application to conform to such agency's comments and resubmit the permit application to the agency. The determination as to whether or not the permit application, as resubmitted, conforms with the agency's comments or is otherwise acceptable to the agency shall be made solely by the agency in writing.

62. This Administrative Consent Order shall not preclude the Department from requiring that Respondents apply for any permit or permit modification issued by the Department under authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and/or any other statute for the matters

covered herein. The terms and conditions of any such permit or permit modification shall not be preempted by the terms and conditions of this Administrative Consent Order even if the terms and conditions of any such permit or permit modification are more stringent than the terms and conditions of this Administrative Consent Order. To the extent that the terms and conditions of any such permit or permit modifications are substantially equivalent to the terms and conditions of this Administrative Consent Order, Respondents waive any rights they may have to a hearing on such terms and conditions during any such permit process.

IV. Project Coordination

63. Respondents shall submit to the Department all documents required by this Administrative Consent Order, including correspondence relating to force majeure issues, by certified mail, return receipt requested or by hand delivery with an acknowledgement of receipt form for the Department's signature. The date that the Department executes the receipt or acknowledgement will be the date the Department uses to determine Respondents' compliance with the requirements of this Administrative Consent Order and the applicability of stipulated penalties and any other remedies available to the Department.

64. Within seven (7) calendar days after the effective date of this Administrative Consent Order, Respondents shall submit to the Department the name, title, address and telephone number of the individual who shall be the Respondents' contact for the Department for all matters concerning this Administrative Consent Order. The individual identified in the following paragraph shall be the Department's contact for the Respondents for all matters concerning this Administrative Consent Order.

65. Respondents shall submit four (4) copies of all documents required by this Administrative Consent Order, unless otherwise directed by the Department, to:

David Sweeney, Section Chief
Bureau of State Case Management
Division of Hazardous Waste Management
New Jersey Department of Environmental Protection
401 East State Street - Fifth Floor
CN-028
Trenton, New Jersey 08625

66. Respondents shall notify, both verbally and in writing, the contact person listed above at least two weeks prior to the initiation of any field activities.

V. Financial Requirements

A. Financial Assurance

67. Within thirty (30) calendar days after the effective date of this Administrative Consent Order, Respondents shall obtain and provide to the Department financial assurance in the form of either an irrevocable letter of credit or a performance bond in the amount of ~~$1,000,000.00~~ $400,000.00.

AH. F, p.13

Respondents shall also establish an irrevocable standby trust fund, with an initial deposit of One Thousand dollars ($1,000.00). The irrevocable letter of credit, the performance bond and the irrevocable trust fund agreement shall meet the following requirements:

i. Letter of credit

a. Is identical to the wording specified in Appendix F for letters of credit, which is attached hereto and made a part hereof;

b. Is issued by a New Jersey State or Federally chartered bank, savings bank, or savings and loan association, which has its principal office in New Jersey, unless otherwise approved by the Department; and

c. Is accompanied by a letter from Respondents referring to the Letter of Credit by number, issuing institution and date and providing the following information: the name and address of the facility and/or Site which is the subject of the Administrative Consent Order and the amount of funds securing the Respondents' performance of all its obligations under the Administrative Consent Order.

ii. Performance Bond

a. Is identical to the wording specified in Appendix G for performance bonds, which is attached hereto and made a part hereof;

b. The surety company issuing the performance bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in the most recent version of Circular 570 issued by the U.S. Department of the Treasury, which is published annually on July 1 in the Federal Register; and

c. Is accompanied by a letter from Respondents referring to the Performance Bond by number, issuing institution and date and providing the following information: the name and address of the facility and/or Site which is the subject of the Administrative Consent Order and the amount of fund securing the company's performance of all its obligations under the Administrative Consent Order.

iii. Standby Trust

a. Is identical to the wording specified in Appendix H, which is attached hereto and made a part hereof;

b. The irrevocable standby trust fund may, at the discretion of the Department, be the depository for all funds paid pursuant to a draft by the Department against the letter of credit or payments made under the performance bond as directed by the Department;

c. The trustee shall be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or New Jersey agency;

d. Is accompanied by an executed certification of acknowledgement that is identical to the wording specified in Appendix H.

68. Respondents shall establish and maintain the standby trust fund until terminated by the written agreement of the Department, the trustee and Respondents, or of the trustee and the Department if Respondents cease to exist. Respondents shall maintain the letter of credit or performance bond until the Department provides written notification to Respondents that the financial assurance is no longer required for compliance with this Administrative Consent Order. In the event that the Department determines that Respondents have failed to perform any of their obligations under this Administrative Consent Order, the Department may proceed to have the financial assurance deposited into the standby trust; provided, however, that before the Department draws on the letter of credit or makes a claim against the performance bond, the Department shall notify Respondents in writing of the obligation(s) which they have not performed, and Respondents shall have a reasonable time, not to exceed thirty (30) calendar days, unless approved in writing by the Department, to perform such obligation(s).

69. At any time, Respondents may apply to the Department to substitute other financial assurances in a form, manner and amount acceptable to the Department.

B. Project Cost Review

70. Beginning three hundred sixty-five (365) calendar days after the effective date of this Administrative Consent Order and annually thereafter on that same calendar day, Respondents shall submit to the Department a detailed review of all costs required for Respondents' compliance with this Administrative Consent Order. This cost review shall include a detailed summary of all monies spent to date pursuant to this Administrative Consent Order, the estimated cost of all future expenditures required to comply with this Administrative Consent Order (including any operation and maintenance costs), and the reason for any changes from the previous cost review submitted by Respondents.

71. At any time after Respondents submit the first cost review pursuant to the preceding paragraph, Respondents may request the Department's approval to reduce the amount of the financial assurance to reflect the remaining costs of performing their obligations under this Administrative Consent Order. If the Department grants written approval of the request, Respondents may amend the amount of the then existing letter of credit or performance bond.

72. If the estimated cost of meeting Respondents' obligations in this Administrative Consent Order at any time increases to an amount greater than the financial assurance, Respondents shall, within fourteen (14) calendar days after receipt of written notice of the Department's determination, increase the amount of the then existing letter of credit or performance

bond so that it is equal to the estimated cost as determined by the Department. Respondents shall provide the amended financial assurance to the Department within seven calendar days (7) after it has been obtained.

C. Oversight Cost Reimbursement

73. Within thirty (30) calendar days after receipt from the Department of a summary accounting of all costs incurred in connection with its oversight functions of this Administrative Consent Order for a fiscal year, or any part thereof, Respondents shall submit to the Department a cashier's or certified check payable to the "Treasurer, State of New Jersey" for the full amount of the Department's oversight costs.

D. Stipulated Penalties

74. Upon a demand made by the Department, Respondents shall pay stipulated penalties to the Department for their failure to comply with any of the deadlines or schedules required by this Administrative Consent Order including those established and approved by the Department in writing pursuant to this Administrative Consent Order. Each deadline or schedule not complied with shall be considered a separate violation. Payment of stipulated penalties shall be made according to the following schedule, unless the Department has modified the compliance date pursuant to the force majeure provisions hereinbelow:

Calendar Days After Due Date	Stipulated Penalties
1 - 7	$ 1,000 per calendar day
8 - 14	2,000 per calendar day
15 - 21	3,000 per calendar day
22 - 28	5,000 per calendar day
29 - over	10,000 per calendar day

75. Any such penalty shall be due and payable fourteen (14) calendar days following receipt of a written demand by the Department. Payment of stipulated penalties shall be made by a cashier's or certified check payable to the "Treasurer, State of New Jersey".

76. Respondents agree that they will not seek to take as a tax deduction any stipulated penalty payments made pursuant to the above paragraphs.

VI. Force Majeure

77. If any event as specified in the following paragraph occurs which Respondents believe or should believe will or may cause delay in the compliance or non-compliance with any provision of this Administrative Consent Order, Respondents shall notify the Department in writing within seven (7) calendar days of the delay or anticipated delay, as appropriate, referencing this paragraph and describing the anticipated length of the delay, the precise cause or causes of the delay, any measures taken or to be taken to minimize the delay, and the time required to take any such measures to minimize the delay. Respondents shall take all necessary action to prevent or minimize any such delay.

78. If the Department finds that: (a) Respondents have complied with the notice requirements of the preceding paragraph; (b) that any delay or anticipated delay has been or will be caused by fire, flood, riot, strike or other circumstances beyond the control of Respondents; and (c) Respondents have taken all necessary action to prevent or minimize any such delay, the Department shall extend the time for performance hereunder for a period no longer than the delay resulting from such circumstances. If the Department determines that (i) Respondents have not complied with the notice requirements of the preceding paragraph; (ii) the event causing the delay is not beyond the control of Respondents; (iii) Respondents have not taken all necessary action to prevent or minimize the delay, this paragraph shall not be applicable, and failure to comply with the provisions of this Administrative Consent Order shall constitute a breach of the requirements of this Administrative Consent Order. The burden of proving that any delay is caused by circumstances beyond the control of Respondents and the length of any such delay attributable to those circumstances shall rest with Respondents. Increases in the cost or expenses incurred by Respondents in fulfilling the requirements of this Administrative Consent Order do not constitute a force majeure. Delay in an interim requirement shall not automatically justify or excuse delay in the attainment of subsequent requirements. Force majeure shall not include nonattainment of the goals, standards, guidelines and requirements set forth in the appendicies attached hereto. Force majeure shall not include contractor's breach.

VII. Reservation of Rights

79. If Respondents fail to pay stipulated penalties pursuant to paragraph 75, the Department may assess administrative or civil administrative penalties for the violations of this Administrative Consent Order or may institute proceedings to collect stipulated penalties; the Department may also bring an action in New Jersey Superior Court pursuant to N.J.S.A. 58:10A-10 to enforce the provisions of this Administrative Consent Order.

80. Respondents' payment of stipulated penalties pursuant to this Administrative Consent Order shall not preclude the Department from electing to pursue any injunctive relief to enforce the terms of this Administrative Consent Order.

81. The Department reserves the right to unilaterally terminate this Administrative Consent Order in the event Respondents violates the terms of this Administrative Consent Order.

82. Nothing in this Administrative Consent Order shall preclude the Department from seeking civil or civil administrative penalties against Respondents.

83. This Administrative Consent Order shall not be construed to affect or waive the claims of federal or state natural resource trustees against any party for damages for injury to, destruction of, or loss of natural resources.

84. The Department reserves the right to require Respondents to take or arrange for the taking of, any and all additional measures should the

Department determine that such actions are necessary to protect human health or the environment. Nothing in this Administrative Consent Order shall constitute a waiver of any right of the Department to require Respondents to undertake such additional measures should the Department determine that such measures are necessary.

VIII. General Provisions

85. This Administrative Consent Order shall be binding, jointly and severally, on Respondents, their agents, successors, assignees and any trustee in bankruptcy or receiver appointed pursuant to a proceeding in law or equity.

86. Respondents shall perform all work conducted pursuant to this Administrative Consent Order in accordance with prevailing professional standards.

87. Respondents shall conduct all site operations in accordance with the Health and Safety plan developed for this site (as set forth in Appendix A). All site activities shall be conducted in accordance with all general industry (29 CFR 1910) and construction (29 CFR 1926) standards of the federal Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, as well as any other State or municipal codes or ordinances that may apply. Special attention shall be given to compliance with those requirements set forth in OSHA's final rule entitled "Hazardous Waste Operations and Emergency Response", Section 1910.120 of Subpart H of 29 CFR (published March, 1989, Volume 54, Number 42, Federal Register).

88. In accordance with N.J.S.A. 45:8-45, all plans or specifications involving professional engineering submitted pursuant to this Administrative Consent Order, shall be submitted affixed with the seal of a professional engineer licensed pursuant to the provisions of N.J.S.A. 45:8-1 et seq.

89. Respondents shall conform all actions pursuant to this Administrative Consent Order with all applicable Federal, State, and local laws and regulations. Respondents shall be responsible for obtaining all necessary permits, licenses and other authorizations required to comply with this Administrative Consent Order.

90. All appendices referenced in this Administrative Consent Order, as well as all reports, work plans and documents required under the terms of this Administrative Consent Order are, upon approval by the Department, incorporated into this Administrative Consent Order by reference and made a part hereof.

91. Each field activity to be conducted pursuant to this Administrative Consent Order shall be coordinated by an on-site professional(s) with experience relative to the particular activity being conducted at the Site each day, such as experience in the area of hydrogeology, geology, environmental controls, risk analysis, health and safety or soils.

92. Upon the receipt of a written request from the Department, Respondents shall submit to the Department all data and information

concerning pollution at and/or emanating from the Site, or which has emanated from the Site, including raw sampling and monitor data, whether or not such data and information was developed pursuant to this Administrative Consent Order.

93. Respondents shall make available to the Department all technical records and contractual documents maintained or created by Respondents or their agents in connection with this Administrative Consent Order.

94. Respondents shall preserve, during the pendency of this Administrative Consent Order and for a minimum of six (6) years after its termination, all data, records and documents in their possession or in the possession of their divisions, employees, agents, accountants, contractors, or attorneys which relate in any way to the implementation of work under this Administrative Consent Order, despite any document retention policy to the contrary. After this six year period, Respondents shall notify the Department within thirty (30) calendar days prior to the destruction of any such documents. If the Department requests in writing that some or all of the documents be preserved for a longer time period, Respondents shall comply with that request. Upon receipt of a written request by the Department, Respondents shall submit to the Department all non-privileged records or copies of any such records.

95. Obligations and penalties of this Administrative Consent Order are imposed pursuant to the police powers of the State of New Jersey for the enforcement of the law and the protection of the public health, safety and welfare and are not intended to constitute debt or debts which may be limited or discharged in a bankruptcy proceeding.

96. In addition to the Department's statutory and regulatory rights to enter and inspect, Respondents shall allow the Department and its authorized representatives access to the Site at all times for the purpose of monitoring Respondents' compliance with this Administrative Consent Order and/or to perform any remedial activities Respondents fail to perform as required by this Administrative Consent Order.

97. Respondents shall not construe any informal advice, guidance, suggestions, or comments by the Department, or by persons acting on behalf of the Department, as relieving Respondents of their obligation to obtain written approvals as required herein, unless the Department specifically relieves Respondents of such obligations, in writing, in accordance with the following paragraph.

98. No modification or waiver of this Administrative Consent Order shall be valid except by written amendment to this Administrative Consent Order duly executed by Respondents and the Department.

99. Respondents hereby consent to and agree to comply with this Administrative Consent Order which shall be fully enforceable as an Order in the New Jersey Superior Court upon the filing of a summary action for compliance pursuant to N.J.S.A. 13:1D-1 et seq., and/or the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.

100. In the event that the Department determines that a public meeting concerning the cleanup of the Site is necessary at any time, Respondents shall ensure that the Respondents' appropriate representative is prepared, available, and participates in such a meeting upon notification from the Department of the date, time and place of such meeting.

101. Respondents waive their rights to an administrative hearing concerning the entry of this Administrative Consent Order pursuant to N.J.S.A. 52:14B-1 et seq. and N.J.S.A. 58:10A-1 et seq.

102. Respondents agree not to contest the authority or jurisdiction of the Department to issue this Administrative Consent Order; Respondents further agree not to contest the terms or conditions of this Administrative Consent Order, except as to interpretation or application of such terms and conditions in any action brought by the Department to enforce the provisions of this Administrative Consent Order.

103. Respondents shall provide a copy of this Administrative Consent Order to each contractor and subcontractor retained to perform the work required by this Administrative Consent Order and shall condition all contracts and subcontracts entered for the performance of such work upon compliance with the terms and conditions of this Administrative Consent Order. Respondents shall be responsible to the Department for ensuring that their contractors and subcontractors perform the work herein in accordance with this Administrative Consent Order.

104. Respondents shall give written notice of this Administrative Consent Order to any successor in interest within 90 calendar days prior to transfer of ownership of Respondents' facilities which are the subject of this Administrative Consent Order, and shall simultaneously verify to the Department that such notice has been given. This requirement shall be in addition to any other statutory or regulatory requirements arising from the transfer of ownership of Respondents' facilities.

105. Respondents agree not to bring an action or maintain any existing or future claim or demand upon any State funds, including the New Jersey Spill Compensation Fund, N.J.S.A. 58:10-23.11i and the Sanitary Landfill Closure Fund, for the cost of investigation and remediation or any other actions required by this Administrative Consent Order and for damages sustained by Respondents or their successors and assigns as a result of contamination attributable to Respondents' or their predecessor's ownership and/or operations at the Site. This provision shall be construed as a covenant not to sue or make any claim or demand; provided however, Respondents do not release or waive any right they may have to seek damages from a third party for such costs or damages.

106. Within thirty (30) calendar days after the effective date of this Administrative Consent Order, Respondents shall record a copy of this Administrative Consent Order with the County Clerk, Hudson County, State of New Jersey.

107. Respondents agree not to make any use of the Site or take any actions inconsistent within this Administrative Consent Order. Respondents agree to impose such use and/or access restrictions regarding the Site as

may be deemed necessary by the Department. The use and access restrictions shall run with the land, shall be for the benefit of and enforceable by the Department and the citizens of the State of New Jersey and shall provide actual and constructive notice of any subsequent grantee. Respondents shall record the restrictions with the Hudson County Clerk immediately upon request of the Department that Respondents do so.

108. The requirements of this Administrative Consent Order shall be deemed satisfied upon the receipt by Respondents of written notice from the Department that Respondents have demonstrated, to the satisfaction of the Department, that the obligations imposed by this Administrative Consent Order have been completed by Respondents.

109. Respondents shall submit to the Department, along with the executed original Administrative Consent Order, the appropriate documentary evidence (such as a corporate resolution) that the signatories for Respondents have the authority to bind Respondents to the terms of this Administrative Consent Order.

110. This Administrative Consent Order shall become effective upon the execution by all parties.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DATE: _____ BY: _____

Ronald T. Corcory
Assistant Director
Responsible Party Cleanup Element
Division of Hazardous Waste Management

INTERSTATE METALS SEPARATING CORP.

DATE: 1/29/90 BY: _____

NAME: Barry Brown

TITLE: President

METALS REALTY CORP.

DATE: 1/29/90 BY: _____

NAME: Barry Brown

TITLE: President

Endnote to Administrative Consent Order

In The Matter Of

Interstate Metals Separating Corp.

[1]Findings set forth herein at paragraphs one through thirty-eight are the findings of NJDEP. Respondents do not necessarily agree with any or all of these findings.

[2]Respondents maintain that 1) the stagnant pond results from a ruptured sewer line that traverses the property and which, during periods of high flow, discharges contaminants, sewage, and other debris onto the Site; 2) a portion of the flooding also results from blockage of two inadequately maintained culverts which traverse the railroad embankment located to the east of the Site, and 3) the majority of the flooding is caused by haphazard development in the Town of Kearny and in the Hackensack Meadowlands in conjunction with inadequately maintained floodgates.

UPDATED 28 Aug 97: Certification statement added.

| Adobe Acrobat PDF (15 Kb) | Microsoft Word 6.0/95 document (30 Kb) | ZIP of the Word document (7 Kb) |

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE REMEDIATION PROGRAM

MEMORANDUM OF AGREEMENT APPLICATION FOR NON-RESIDENTIAL PROPERTIES

This Memorandum of Agreement ("MOA") Application has been developed so that any party interested in conducting Preliminary Assessments/Site Investigations or remedial activities can do so with oversight from the Department. The Department will provide oversight as long as the Department is reimbursed for the cost of its review. The MOA Application must be completed by the party interested in conducting the remedial activities and/or the party's authorized agent. Once completed, the MOA Application must be submitted to the following address:

Division of Responsible Party Site Remediation
Bureau of Field Operations
401 East State Street-P.O. Box 434
Trenton, NJ 08625-0434

Attention: Section Chief - Case Assignment

Upon receipt of a MOA Application, the Department will review the application for completeness and prepare the MOA. The applicant must respond completely and in full to all the questions and information requested in the attached application. To the extent possible, all MOAs will be prepared by the Department on a first come, first served basis within 30 days after receipt of a complete application. The Department will not process any applications unless all information requested is complete and all questions are answered to the satisfaction of the Department.

MOAs will be granted at the Department's discretion in cases which the Department has not scheduled for publicly funded remediation.

The Site Remediation Program has prepared this application for an MOA to facilitate the Department's preparation and issuance of MOAs. If you have questions regarding the completion of the MOA Application, please call the Case Assignment Section at (609) 292-2943.

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE REMEDIATION PROGRAM

MEMORANDUM OF AGREEMENT APPLICATION FOR NON-RESIDENTIAL PROPERTIES

Answer all questions as completely as possible. If you have any questions when completing this form, it is recommended that you contact the Case Assignment Section at (609) 292-2943 between the hours of 8:00 AM and 4:30 PM for assistance.

PLEASE TYPE OR PRINT

DATE _____

Ah. 6.p.1

A. Current Property Use: Agricultural _____ Industrial _____ Commercial _____ Undeveloped _____ Other _____

B. Site Name Tony Sheng c/o Honeyware
Street Address 275 Dukes Street Zip Code 07032
Municipality Kearny County Hudson

Tax Block and Lot Number(s) Block 252, Lots 7 and 8

Latitude _____ Longitude _____
Acreage _____
Geographic Boundaries Hackensack Meadowlands, Industrial areas of Kearny
EPA ID # (if applicable) _____

C. Who will be executing this MOA? (if different than Question B)

Name Tony Sheng
Affiliation _____
Address 244 Dukes Street
City Kearny State NJ Zip Code 07032
State of Incorporation _____ Corp. Status _____

D. Select which phase(s) of the remediation process are to be performed and what document(s) are to be submitted pursuant to the MOA being requested.

REMEDIAL PHASE	DOCUMENTS TO BE SUBMITTED
[ ] Preliminary Assessment	[ ] Preliminary Assessment Report
[ ] Site Investigation	[ ] Site Investigation Report
[ ] Remedial Investigation	[ ] Remedial Investigation Workplan
[X] Remedial Action	[ ] Remedial Investigation Report
	[ ] Remedial Action Selection Report
	[X] Remedial Action Workplan
	[X] Remedial Action Report

E. Current Property Owner(s)

Name(s) Tony Sheng
Firm Honeyware Telephone # _____
Street Address 244 Dukes Street
Municipality Kearny
State NJ Zip Code 07032

F. Current Business Operator(s)
Name(s) _____
Firm _____ Telephone # _____
Street Address _____
Municipality _____
State _____ Zip Code _____

G. Current Business Owner(s) (if different than question Part E. or F.)
Name(s) _____
Firm _____ Telephone # _____
Street Address _____
Municipality _____
State _____ Zip Code _____

H. Provide the information requested below on the previous owners of the site and the entities who operated at the site.

Name	Owner or Operator	From	To
See Administrative Consent Order dated 1/29/90 which is attached hereto.			

RECEIVED DEC 30 1997

I. For those former Owner(s) and/or Operator(s) identified above (in paragraph H), give a brief discussion of all operations at the site, including but not limited to types of operations, materials used, waste generated, and waste disposal techniques.

See Administrative Consent Order dated 1/29/90 which is attached hereto.

J. Are there currently, or have there ever been any hazardous substances as defined by N.J.A.C. 7:1E-1 et seq., used, generated, treated, stored, disposed or discharged at the site? (ie. Fuel Oil, Gasoline)

Yes X No ____ See Administrative Consent Order dated 1/29/90 which is attached hereto.

K. Are there currently, or have there ever been any hazardous wastes as defined by N.J.A.C. 7:26-8 et seq., used, generated, treated, stored, disposed or discharged at the site?

Yes X No ____

L. Are there currently, or have there ever been, any above or below ground storage tanks at the site?

Yes X No ____

M. Did the discharge impact groundwater?

Yes X No ____

N. What are the current operations at the site?

All previous operations ceased and all buildings were demolished in June 1991. 90% of the site is unused with a small strip being used as a driveway for trucks loading and unloading at Mr. Sheng's adjacent facility.

O. What are the intended future uses of the site?

Tony Sheng proposes to construct on a portion of the premises an extension of an existing warehouse and loading facility by 18,000 square feet. The existing warehouse is not located on the subject site.

P. Describe briefly the major types of contaminants found at the site and what media they affect.

See Administrative Consent Order dated 1/29/90 and Declaration of Environmental Restrictions dated 12/4/91.

Q. Describe in detail how the contamination came to exist at the site. For example, were there past spills, landfill operations, industrial septic systems, USTs, deposition of fill material, etc.?

See Administrative Consent Order dated 1/29/90 and Declaration of Environmental Restrictions dated 12/4/91.

R. List any civil/criminal actions taken against the owner/operator, managers or officials associated with the site for violations of any environmental laws or statutes.

Check here if no violations or alleged violation [ ]
Date of action ____
Section of law or statute violated ____
Type of enforcement action ____

Description of the viol- ion _____

How was the violation or alleged violation resolved?
Execution of Declaration of Environmental Restrictions dated 12/4/91. The site was fully remediated pursuant to an Administrative Consent Order, dated January 29, 1990.

S. List all permits currently held by the applicant for the site. (NJPDES, RCRA, etc.)

_____

T. Has a Hazardous Discharge Site Remediation Fund Grant or Loan Application been filed with the Department?

Yes ____ No ____

U. Who will be the contact for all matters of this application?

Name Tony Sheng Title _____
Affiliation _____
Address 244 Dukes Street
City/Town Kearny State NJ
Zip Code 07032
Phone 201-997-5900

V. Is the site currently, or has it ever been, under the oversite of any other program within the Department of Environmental Protection?

Yes ____ No ____

If Yes, explain:

(9/96)

Mail Completed Applications To: Division of Responsible Party Site Remediation
Bureau of Field Operations
401 East State Street
P.O. Box 434
Trenton, NJ 08625-0434
(609) 292-2943
Attention: Section Chief, Case Assignment

CERTIFICATIONS
N.J.A.C. 7:26-1.2 et seq.

Any person making a submission to the Department required by the chapter, shall include the following signatures and notarized certification, for each submittal, pursuant to A and B below. Additionally, the certifications shall indicate the case name and address, case number, type of documents submitted (e.g. MOA application) for each submittal.

CASE NUMBER: _____

CASE ADDRESS: _____

A. The following certification shall be signed by the highest-ranking individual at the site with overall responsibility for that site or activity. Where there is no individual at the site with overall responsibility for that site or activity, this certification shall be signed by the individual having responsibility for the overall operation of the site or activity.

I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Typed/Printed Name Tony Sheng Title Pres.

Signature T. Sheng Date 11/17/97

Sworn to and Subscribed before Me

On this 17th Date of November 1997

Notary

B. The following certification shall be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official; or
4. For persons other than 1-3 above, by the person with the legal responsibility for the site.

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute I am personally liable for the penalties.

Typed/Printed Name Tony Sheng Title Pres.

Signature T. Sheng Date 11/17/97

Sworn to and Subscribed before Me TONY L. SHENG

On this Date of Nov 17th 1997

Notary

EXHIBIT A

METES AND BOUNDS DESCRIPTION OF LOT 7 AND LOT 8, in BLOCK 252, AS SHOWN ON THE TOWN OF KEARNY TAX MAPS NOW IN USE

Prepared for Metals Realty Corporation:

Beginning at a point at the easterly terminus of the centerline of Dukes Street, said point being distant three hundred and twenty and eighty-three hundredths feet (320.83') easterly from the intersection formed by centerline of Dukes Street with the centerline of Sanford Avenue (projected), which point is the true point and place of beginning, thence;

(1) North 05° 49' 45" East, distant twenty-six and eighty-three hundredths feet (26.83') to a point, thence;

(2) South 62° 55' 15" East, distant twenty-eight and forty-six hundredths feet (28.46') to a point, thence;

(3) North 26° 53' 45" East, distant two hundred and forty-one and thirty-three hundredths feet (241.33') to a point, thence;

(4) North 84° 10' 15" West, distant one hundred and thirteen and ninety-nine hundredths feet (113.99') to a point, thence;

(5) North 05° 49' 45" East, distant fifty-three and sixty-four hundredths feet (53.64') to a point, thence;

(6) South 84° 10' 15" East, distant ninety-five feet (95.00') to a point, thence;

(7) North 05° 49' 45" East, distant three hundred and ninety-nine and twenty hundredths feet (399.20') to a point, thence;

(8) South 49° 23' 15" East, distant eight hundred and twenty-three and seventy-two hundredths feet (823.72') to a point, thence;

(9) Along an arc of a curve to the right, arc distance two hundred and sixty and forty-four hundredths feet (260.44'), having a radius of three hundred and forty-nine and twenty six hundredths feet (349.26') (chord bearing South 32° 41' 33" West) chord distance two hundred and fifty-four and forty-five hundredths feet (254.45') to a point, thence;

(10) South 81° 08' 45" West, distant one hundred and forty-four and eight-three hundredths feet (144.83') to a point thence;

(11) Along an arc of a curve to the right arc distance, five hundred and twenty-five and ninety-five feet (525.95') having a radius of three thousand, seven hundred and forty-four and eighty-three hundredths feet (3,744,83') (chord bearing South 85° 10' 06" East) chord distance, five hundred and twenty-five and fifty-two hundredths feet (525.52') to a point, thence;

(12) North 05° 49' 45" East, distant one hundred and thirty-six and fifty-six hundredths feet (136.56') to the point and place of beginning.

Parcel also known as 275 Dukes Street, Town of Kearny, Hudson County, New Jersey.

Parcel contains 8.4 acres or 366,063.33 square feet.

EXHIBIT B

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
LANCE R. MILLER, DIRECTOR
CN 028
Trenton, N.J. 08625-0028
(609) 633-1408
Fax # (609) 633-1454

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO. P 713 693 123

JUL 09 1991

Ms. Sara Monaghan
Riker, Danzig, Scherer, Hyland, Perretti
Headquarters Plaza
P.O. Box 1981
Morristown, N.J. 07962-1981

Re: Interstate Metals Company, 275 Duke Street, Kearny, N.J.

Dear Ms. Monaghan:

Pursuant to Paragraph 45 of the Administrative Consent Order (ACO) between the New Jersey Department of Environmental Protection (Department) and Interstate Metals (ISM), signed January 29, 1990, the Department has reviewed the Remedial Investigation (RI) Report submitted April 1991 by Interstate Metals.

The above mentioned Report included a Feasibility Study (FS) portion as well as the results of RI investigations. The results of this report confirm the soils at this site are grossly contaminated with heavy metals. Results indicate that the most prevalent pathway to human exposure is airborne dusts. The report also indicates that there is minimal contamination to ground water due to said metals. In reviewing the above mentioned report, the Department has found it to be acceptable. However, the Department provides the following comments to be incorporated into, and made part of the RI Report, ISM's response must be made within 30 calendar days of receipt of this correspondence.

1. The Department has determined it is now appropriate to segregate this site into two sections: One section is to contain the area bounded by the property line consisting of the former processing facility, (on-site), and the second area outside of the property lines (off-site).

New Jersey is an Equal Opportunity Employer

2. The Department has determined that no further delineation of the soils is necessary in the area defined by the property lines. However, further soils delineation is necessary on both sides of the railroad tracks in the marsh lands.

3. The on-site marsh lands and adjacent non-wetland areas must be characterized by proposing a sampling regime to fully delineate the horizontal and vertical extent of metals contamination. This may be carried out by establishing transects radiating outward from the ISM site boundary. Soils must be sampled from the first 6 inches of every two-foot depth interval, and continue until a clean sample is obtained. Samples must be analyzed for Zn, Pb, Cu, and Hg.

4. The off-site sampling must be proposed to adequately delineate the marsh land and associated creek sediments. Sampling in this area is best achieved by in-field locating of sampling points by a Department representative and the consultant. Two sediment samples must be taken from each location. One from the 0-3" interval and one from the 12"-15" interval. Twenty percent of all samples must be analyzed for priority pollutant (PP) metals, grain size, and total organic carbon (TOC), the remaining 80 percent are to be for Hg, Zn, Pb, Cu. Pending examination of the requested maps (discussed supra), approximately 10 wetland/creek sediment sampling locations in total will be necessary. Final sample locations must be field located in the presence of Department personnel.

5. The Department approves the application of a one-foot earthen cap seeded so as to reintroduce and support vegetation between the property lines. Marsh sediment samples will dictate further remedial activities. However, in order to judge the success of the capping activities after site remediation has been preferred, surface water samples in the drainage swale must be taken ~~to determine~~ the success of the capping. Samples will be taken for ~~Zn~~, Cu, Pb, and Hg. If elevated levels persist, alternate additional ~~measures will~~ be taken. Let it be known that the Department considers the soil associated with the one-foot cap to be comprised entirely of soils capable of sustaining vegetative growth. Please note that a deed restriction is forthcoming upon acceptance of this paragraph.

6. Interstate Metals will also provide the Department with site maps that indicate each sample point location, and the results of said sample. Maps must be a survey map which includes all surrounding land marks such as railroads and buildings and marsh areas.

7. Since the Final RI must stand as a complete unabridged document, Interstate Metals must submit all relevant information from previous investigations into the Final RI document as an appendix to the RI Report.

If you have any questions, please feel free to call David M. DeClement at (609) 633-0719.

Sincerely,

David Sweeney

David Sweeney, Section Chief
Bureau of State Case Management

cm/DMD

006985 #16347 Prepared by: Sarah L. Monaghan

Exhibit C

Sarah L. Monaghan

DECLARATION OF ENVIRONMENTAL RESTRICTIONS

This Declaration of Environmental Restrictions, made as of the 4th day of December, 1991, by

W I T N E S S E T H:

WHEREAS, Metals Realty Corp. ("Owner") is the owner in fee simple of certain real property (the "Property) designated as Lots 7 and 8, and Block 252 on the tax map of the Town of Kearny, Hudson County, more particularly described on Exhibit A attached hereto and made a part hereof; and

WHEREAS, the New Jersey Department of Environmental Protection and Energy (together with its successors, "NJDEPE") has issued the decision document (the "Decision Document") attached hereto as Exhibit B and made a part hereof, concerning the Property; and

WHEREAS, the areas described on Exhibit C attached hereto and made a part hereof (the "Affected Areas") contain residual contaminants (collectively, the Contaminants"); and

WHEREAS, the type, concentration and location of the Contaminants are described on Exhibit D attached hereto and made a part hereof, and the specific location of the Contaminants is shown on the survey plat attached hereto as Exhibit E; and

AH. G, p.11

WHEREAS, the type, concentration and location of the Contaminants are described on Exhibit D attached hereto and made a part hereof, and the specific location of the Contaminants is shown on the survey plat attached hereto as Exhibit E; and

WHEREAS, to prevent the migration of the Contaminants and any potential hazard to human health, safety and the environment; a permeable surface cover is in place at the Property, at the location shown on Exhibit E; and

WHEREAS, in accordance with the Decision Document, and in consideration for the terms and conditions of the Decision Document and other good and valuable consideration, Owner desires to impose certain restrictions upon the use and occupancy of the Property, and to restrict certain activities at the Property; and

WHEREAS, Owner intends that such restrictions shall run with the Property, and be binding upon and enforceable against Owner's successors and assigns.

NOW, THEREFORE, Owner agrees as follows:

1. Disturbance of Surface Cover. To the best of its ability, owner shall refrain from taking any action, suffering or allowing any other person or entity to take any action, or omitting to take any action, if such action or omission is reasonably likely to result in a disturbance of the integrity of the surface cover or

create or increase either a risk of migration of the Contaminants or a potential hazard to human health, safety and the environment.

2. Alterations and Improvements. Owner shall not make, nor allow to be made, any alteration or improvement in, to or about the Affected Areas without first obtaining the express written consent of NJDEPE, which consent shall not be withheld unreasonably.

3. Maintenance of Surface Cover. Owner shall not engage in any activity which would in any way diminish the prophylactic effect of the surface cover. Owner shall maintain the surface cover in good condition and repair to ensure the integrity thereof and to prevent migration of the Contaminants into the environment. See Exhibit F for a definition of the surface cover.

4. Notice and Time of Entry onto Property. NJDEPE shall have the right to enter onto the Property upon reasonable notice and at reasonable times, for the purpose of:

(a) ensuring the integrity of the surface cover described above, and its continued ability to prevent migration of the Contaminants;

(b) preventing or eliminating any restricted use of any portion of the Affected Areas as described above; or

(c) protecting human health, safety or the environment,

provided however, that entry shall not be subject to these limitations if NJDEPE determines that immediate action is necessary to protect human health, safety or the environment.

5. Notice of Disposition of Property.

(a) Owner shall provide NJDEPE with written notice of any voluntary or involuntary conveyance, grant, sale, assignment, transfer or other disposition of any portion of the Property or any interest therein (other than the grant of a leasehold interest) at least five (5) days before such grant, sale, assignment, transfer or other disposition or encumbrance.

(b) Within ten (10) days after the execution of a lease of any portion of the Property, Owner shall provide NJDEPE with written notice of such lease, including a true copy of such lease. Within ten (10) days after the grant of a leasehold interest in any portion of the Property, which grant is not evidenced by a written lease, Owner shall provide NJDEPE with written notice of the identity of the lessee, the terms of the leasehold, and evidence satisfactory to NJDEPE demonstrating that the lessee has been provided with a copy of this Declaration of Environmental Restrictions.

(c) Notices required under this Paragraph 6 shall be addressed to NJDEPE at the following address:

New Jersey Department of Environmental Protection and Energy
Division of Hazardous Waste Management
Bureau of State Case Management
401 East State Street
Trenton, New Jersey 08625

(d) Nothing contained in this Paragraph 5 shall be construed as limiting any obligation of Owner to provide any notice required by any law, regulation, or order of any governmental authority.

6. Notice of Lessees. Owner shall cause all leases of any portion of the Property to contain a provision expressly requiring the lessee to comply with this Declaration of Environmental Restrictions.

7. Persons Entitled to Enforce Restrictions.

(a) The restrictions provided herein are for the benefit of, and shall be enforceable by the following persons and entities:

i. NJDEPE;

ii. any person or entity (an "Interested Person") who is reasonably likely to suffer Damages (as hereinafter defined) as a result of any

violation of the restrictions provided herein; and

iii. any citizen of the State of New Jersey, and any corporation or other entity organized under the laws of the State of New Jersey, or authorized to do business in New Jersey.

(b) "Damages" means any direct damages, arising in connection with a violation of the restrictions provided herein, including but not limited to the following:

i. Any cost of restoring, repairing, maintaining, or replacing any real or personal property damaged or destroyed, and any reduction in value of such property caused by such violation in comparison with its value immediately before the violation;

ii. Any cost of restoration or replacement, where possible, of any natural resource damage or destroyed, and

iii. Any personal injury.

8. Injunctive Relief. Owner expressly recognizes and agrees that these restrictions are necessary to protect human health, safety and the environment. Owner expressly agrees that if NJDEPE seeks injunctive relief to enforce these restrictions, and if NJDEPE is successful in obtaining such injunctive relief, Owner agrees to pay the reasonable attorneys' fees and expenses incurred by NJDEPE in obtaining such injunction.

9. Severability. If any court or other tribunal determines that any provision of the restrictions or easement contained herein is invalid or unenforceable, such provision shall be deemed to have been modified automatically to conform to the requirements for validity and enforceability as determined by such tribunal. In the event that the provision invalidated is of such a nature that it cannot be so modified, the provision shall be deemed deleted from this instrument as though it had never been included herein. In either case, the remaining provisions of this instrument shall remain in full force and effect.

10. Successor and Assigns. This Declaration of Environmental Restrictions shall be binding upon Owner and upon Owner's successors and assigns, and shall run with the Property. This Declaration of Environmental Restrictions shall terminate only upon recording of an instrument, executed by NJDEPE, in the office of the Town of Kearny, Hudson County, New Jersey, expressly terminating this Declaration of Environmental Restrictions.

IN WITNESS WHEREOF, Owner has executed this instrument as of the date first written above.

ATTEST:

Barry Brown

METALS REALTY CORP.

By: _____
Barry Brown

R|R to:

RIKER, DANZIG, SCHERER,
HYLAND & PERRETTI
HEADQUARTERS PLAZA CN-1981
ONE SPEEDWELL AVENUE
MORRISTOWN, NEW JERSEY 07962-1981
Attn: Sarah L. Monaghan, Esq.

Att. G, p. 17

ACKNOWLEDGMENT

STATE OF NEW JERSEY)
) SS.:
COUNTY OF HUDSON)

I certify that on December 4 , 19 91, personally came before me, and his person acknowledged under oath, to my satisfaction, that: Barry Brown

(a) this person is the of Metals Realty Corp., the corporation named in this document;

(b) this person is the attesting witness to the signing of this document by the proper corporate officer who is the President of the corporation;

(c) this document was signed and delivered by the corporation as its voluntary act duly authorized by a proper resolution of its Board of Directors;

(d) this person knows the proper seal of the corporation which was affixed to this document; and

(e) this person signed this proof to attest to the truth of these facts.

Attesting Witness
Barry Brown
Secretary

Signed and sworn before me on
December 4 , 19 91.

STEPHANIE A. CONTI
NOTARY PUBLIC OF NEW JERSEY , Notary Public
My Commission Expires Nov. 23, 1992

Att. G, p. 18

BURKE & MACKIEWICZ, P.C.

JAMES J. BURKE, ESQ.*
RICHARD W. MACKIEWICZ, JR., ESQ.*

*ADMITTED IN NEW JERSEY AND NEW YORK

COUNSELLORS AT LAW
625 WASHINGTON STREET
HOBOKEN, NEW JERSEY 07030

TELEPHONE: (201) 222-8000
FACSIMILE: (201) 222-3292
PLEASE REPLY TO THE HOBOKEN OFFICE

New York Office
225 BROADWAY, SUITE 515
NEW YORK, NEW YORK 10007
TELEPHONE: (212) 964-1661

FEBRUARY 18, 1998

NJ Department of Environmental
Protection
Division of Responsible Party
Site Remediation
Bureau of Field Operations - Case
Assignment Section
401 East State Street
P.O. Box 434
Trenton, New Jersey 08625-0434

Attention: Ralph Downs

Re: Memorandum of Agreement
275 Dukes Street
Kearny, Hudson County, NJ
Block 252, Lots 7 and 8
Case #: 98-01-14-0334-33

Dear Mr. Downs:

With reference to the above-captioned matter, you should now be in receipt of an executed memorandum of agreement from my client.

Please note that the title to the property has now been transferred from Tony Sheng to 252 Dukes St., Inc., which is wholly owned by Mr. Sheng.

This is the only change that has been made.

Very truly yours,

James J. Burke

JJB/dac
cc: Tony Sheng

Middlesex County Office
407 MAIN STREET • METUCHEN, NEW JERSEY 08840 • TELEPHONE: (732) 549-0800

Att. H, p. 1

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

IN THE MATTER OF	:	
THE 275 DUKES STREET SITE	:	MEMORANDUM
AND	:	OF
TONY SHENG	:	AGREEMENT

This Memorandum of Agreement is entered into pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "the Department" or "NJDEP") by N.J.S.A. 13:1D-1 et seq. and N.J.S.A. 58:10B et seq. and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq. and duly delegated to the Section Chief, Division of Responsible Party Site Remediation, Case Assignment Section pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. The property that is the subject of this Memorandum of Agreement is owned by 252 Dukes St., Inc., and is located at 275 Dukes Street and is designated as Block 252, Lots 7 and 8 on the tax maps of the Town of Kearny, Hudson County, New Jersey (hereinafter the "Site").

2. Tony Sheng of 244 Dukes Street, Town of Kearny, New Jersey is the person executing this Memorandum of Agreement.

3. The intent of this Memorandum of Agreement is to allow Tony Sheng to conduct any of the remedial activities outlined herein with oversight from the Department. Tony Sheng has indicated to the Department, that he wishes to conduct the following activities at the Site with the Department's oversight:

a. Remedial Action

4. By entering into this Memorandum of Agreement, Tony Sheng does not admit to any fact, fault or liability under any statute or regulation for conditions which existed before, during, or after Tony Sheng's execution of this Memorandum of Agreement nor shall it be construed as a waiver of any right or defense Tony Sheng may have with regard to the Site.

AGREEMENT

I. Remediation

5. Tony Sheng agrees to submit the following documents and the Department agrees to review and comment on documents submitted.

a. Remedial Action Workplan
b. Remedial Action Report

6. Within thirty (30) calendar days after the Department's receipt of any submission pursuant to this Memorandum of Agreement, the Department will inform Tony Sheng in writing of any administrative deficiencies in the submission, pursuant to N.J.A.C. 7:26E, that will prevent the Department from conducting its review. When the Department determines that the submission is administratively complete, the Department will notify Tony Sheng in writing of the timeframe required for the Department to complete the review. This review will include a determination by the Department whether or not all remedial activities have been carried out consistent with applicable rules, standards, and guidelines.

7. Within seven (7) calendar days after the effective date of this Memorandum of Agreement, Tony Sheng will submit to the Department: a) the name, address and telephone number of the individual who will be the contact for Tony Sheng regarding technical matters concerning this Memorandum of Agreement and b) the name and address of the designated agent for Tony Sheng for the purpose of service for all matters concerning this Memorandum of Agreement.

8. Tony Sheng may terminate this Memorandum of Agreement if Tony Sheng determines that it is no longer feasible or desirable to continue with this Memorandum of Agreement, when Tony Sheng:

a. Submits full payment to the Department for any Department oversight costs the Department incurred pursuant to this Memorandum of Agreement which Tony Sheng has not paid;

b. Notifies the Department in writing of its intentions to terminate this Memorandum of Agreement;

c. Submits all data generated pursuant to this Memorandum of Agreement; and

d. Ensures that no environmental hazards exist at the Site as a result of Tony Sheng's actions pursuant to this Memorandum of Agreement.

e. The Department will cease review of any submittals under this memorandum of agreement on the date it receives the notice of intent to terminate described in Paragraph 8 (b) above;

and no oversight costs will accrue after the Department has determined that the signatory is in full compliance with Paragraph 8. The Department will then prepare a summary of its costs and provide it to Tony Sheng. The date of termination of this agreement is the date of the Department's receipt of both the full unconditioned payment of all of the Department's oversight costs and all data required by Paragraph 8.c. above.

II. Project Coordination

9. Unless otherwise directed by the Department, Tony Sheng shall submit two (2) copies of all documents required by this Memorandum of Agreement to the person identified below, who shall be the Department's contact for Tony Sheng for all matters concerning this Memorandum of Agreement.

New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Field Operations - Northern
2 Babcock Place
West Orange, New Jersey 07052

Attention: Yacoub Yacoub, Section Chief

III. Financial Obligations

10. Upon receipt of a summary of the Department's costs incurred in connection with its oversight functions of this Memorandum of Agreement, Tony Sheng shall submit to the Department a cashier's or certified check payable to the "Treasurer, State of New Jersey" with NJDEP Form 062A for the full amount of the Department's oversight costs. Tony Sheng cannot be released from his obligations under this Memorandum of Agreement, until all oversight costs, for work performed by the Department, are paid.

11. Beginning three hundred sixty-five (365) calendar days after the effective date of this Memorandum of Agreement, and annually thereafter on that same calendar day, Tony Sheng shall submit to the Department a detailed summary of all monies spent to date pursuant to this Memorandum of Agreement, the estimated cost of all future expenditures associated with this Memorandum of Agreement (including any operation and maintenance costs), and the reason for any changes from the previous cost review Tony Sheng submitted.

IV. Reservation of Rights

12. The Department reserves the right to unilaterally terminate this Memorandum of Agreement in the event that Tony Sheng violates any terms or fails to meet the obligations of this Memorandum of Agreement or in the event that the Site becomes a high priority for the Department.

13. Nothing herein, including any document the Department issues as agreed to above, shall be interpreted to constitute a release or waiver of liability for any of the conditions which existed before, during or after the Department's execution of this Memorandum of Agreement.

V. General Conditions

14. Tony Sheng shall, in addition to any other obligation required by law, notify the Department contact immediately upon knowledge of any condition posing an immediate threat to human health and/or the environment.

15. Tony Sheng shall perform all work conducted pursuant to this Memorandum of Agreement in accordance with N.J.A.C. 7:26E and prevailing professional standards then prevailing.

16. Tony Sheng shall conform all actions required by this Memorandum of Agreement with all applicable federal, State and local laws and regulations.

17. Nothing in this Memorandum of Agreement shall be deemed to impose on Tony Sheng any additional liabilities or obligations, other than those specifically stated herein. Nothing shall relieve Tony Sheng from complying with all other applicable laws and regulations.

18. Tony Sheng shall preserve all potential evidentiary documentation found at the Site, which may provide a nexus between the contaminated site and any responsible party or lead to the discovery of other areas of concern including without limitation, documents, labels, drums, bottles, boxes or other containers, and/or other physical materials that could lead to the establishment of the identity of any person which generated, treated, transported, stored or disposed of contaminants at the Site, until written approval is received from the Department to do otherwise.

19. Upon receipt of a written request from the Department, Tony Sheng shall submit to the Department all data and information concerning contamination at the Site, including technical records and contractual documents, and raw sampling and monitoring data, whether or not such data and information was developed pursuant to this Memorandum of Agreement. If Tony Sheng believes any such data or information is protected by a privilege he will retain the data and information and notify the Department of the nature of the document and the privilege claimed. Tony Sheng may request that the Department keep confidential information contained in a submission to the Department pursuant to N.J.A.C. 7:14A-11.

20. The Department will issue a no further action statement when the Department has determined that the signatory has conducted the agreed upon remedial activities pursuant to this Memorandum of Agreement and the remedial activities are in accordance with all Department requirements.

21. This Memorandum of Agreement shall be governed and interpreted under the laws of the State of New Jersey.

22. This Memorandum of Agreement shall be binding, jointly and severally, on each party, its successors and assignees subject to the right of termination above. No change in the ownership or corporate or business status of any party, or of the facility or Site shall alter any signatories's responsibilities under this Memorandum of Agreement.

23. This Memorandum of Agreement shall become effective upon execution hereof by all parties.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Date: 3/2/98 BY: Mark J. Pedersen
Mark J. Pedersen, Section Chief
DRPSR, Case Assignment Section

Tony Sheng

Date: Feb. 10, 1998 BY: T. Sheng
Signature

TONY L. SHENG 252 DUKES ST., INC.
Print Full Name Signed Above

President
Title

REFERENCE NO. 9

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **PROJECT NOTES**

TO: Keegan Landfill file

DATE: 06/09/97

(Page 1 of 1)

FROM: K. Campbell

SUBJECT: Groundwater & Surface Water Use

REFERENCE

Kearny and its surrounding communities obtain drinking water supplies from sources which are greater than four miles from the site. Groundwater and surface water are not known to be used for drinking water supply within four miles of the site. The following list presents a summary of the surrounding cities and their respective water supply information:

City/Town	Drinking Water Source	Comments
Kearny	Wanaque Reservoir	No known private drinking water wells; industrial wells present (Att. A).
Harrison	Passaic Valley Water Comm.	No known private drinking water wells (Att. A; Ref. No. 8, p. 52).
Newark	Pequannock Watershed (W. Milford Twp., Passaic County) and Wanaque Reservoir (Ringwood, Passaic County).	No known private drinking water wells (Att. B). Sources greater than four miles from the site.
Bloomfield	City of Newark	No known private drinking water wells (Ref.8, p.52).
Belleville	City of Newark	No known private drinking water wells (Ref.8, p.52).
East Newark	Wanaque Reservoir (via Kearny)	No known private drinking water wells (Ref.8, p.52).
North Arlington	Passaic Valley Water Comm.	No known private drinking water wells (Att. C).
Jersey City	Boonton Reservoir	No known private drinking water wells. Also supplies water to Hoboken/Lyndhurst/West Caldwell. United Water Resources operates their system (Att. D).
Lyndhurst	Boonton Reservoir	Via Jersey City (Att. D).
Secaucus	United Water Resources	Sources greater than four miles (Atts. E, F).
	Hackensack River watershed; Oradell/Lk. Tappan/Lk. DeForest/Woodcliff Lk. Reservoirs.	

Ref. 9

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-96-11-0044	04/14/97	1125

DISTRIBUTION:
Keegan Landfill file

BETWEEN:	OF	PHONE
Carol (Donnelly) McDonald	Kearny Water Department	(201) 991-2671

AND
K. Campbell KC

DISCUSSION

Ms. McDonald confirmed that the City of Kearny receives its drinking water supply from the Wanaque Reservoir; the City currently owns 13% of the reservoir. She stated that there are no private drinking water wells, although industrial wells do exist. The City also supplies water to the community of East Newark. She noted that East Newark has one industrial well (for a cement company).

Ms. McDonald stated that the City of Harrison receives its drinking water supply from the Passaic Valley Water Commission.

She provided the following NJDEP contact for water supply systems in Hudson County:

Brian Keune - (609) 292-5550

Mr. Keune may be able to assist us with county-wide water supply information based on Public Water Supply ID Numbers.

ACTION ITEMS:

Ref. 11

Att. A

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-96-11-0044	06/04/97	1455

DISTRIBUTION:
Keegan Landfill file

BETWEEN:	OF	PHONE
Anthony DeBarros	Newark -Department of Engineering	(201) 256-4965

AND
K. Campbell (KC)

DISCUSSION

Mr. DeBarros confirmed that the City of Newark obtains its drinking water supply from the Pequannock watershed (W. Milford Twp., Passaic County) and the Wanaque Reservoir (Ringwood, Passaic County). Nearby surface water bodies, such as Weequahic Lake and the local portion of the Passaic River, are not utilized for drinking water supply. There are no known private drinking water wells; however, groundwater may be used for industrial purposes.

The City also maintains a balancing reservoir in Cedar Grove, which holds water from the Pequannock watershed. The balancing reservoir tends to be used to alleviate substantial flow situations (e.g., large-scale firefighting), although the reservoir can be used and is used for drinking water supply.

ACTION ITEMS:

Ref. 11

Att. B

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM		TELECON NOTE
CONTROL NO: 02-96-11-0044	DATE: 06/04/97	TIME: 1145
DISTRIBUTION: Keegan Landfill file		
BETWEEN: Bob Coup, Water Purveyor	OF North Arlington Water Utility Service	PHONE (201) 955-5665
AND K. Campbell (KC)		

DISCUSSION

Mr. Coup stated that North Arlington purchases its water in bulk from the Passaic Valley Water Commission. No groundwater is used for municipal supply. He is not aware of any private drinking water wells. In emergency situations only, they may supply water to Lyndhurst.

(The "Arlington" that appears on the USGS quadrangle near North Arlington is actually considered part of North Arlington).

ACTION ITEMS:

Ref. 11

Att. C

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-96-11-0044	06/04/97	1121

DISTRIBUTION:
Keegan Landfill file

BETWEEN:	OF	PHONE
Bob Lorfing, Principal Engineer	Jersey City Water Department	(201) 547-4598

AND
K. Campbell (KC)

DISCUSSION

Mr. Lorfing confirmed that the City of Jersey City receives its drinking water supply from the Boonton Reservoir. No groundwater is used for municipal supply. He stated that there are no private drinking water wells. The City also supplies water in bulk to the cities of Hoboken, Lyndhurst, and West Caldwell. In addition, they have an agreement to sell some water to United Water Resources (UWR). The City still owns the distribution system, while UWR is the operator.

The two open-air reservoirs visible on the USGS quadrangle for Jersey City are closed; they are not currently usable as reservoirs, as the containment walls for both have been breached.

No surface water intakes used for drinking water are known to exist in the area.

For further information regarding UWR water supplies, he suggested contacting Michael Barnes (UWR).

ACTION ITEMS:

Ref. 11

Att. D

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-96-11-0044	06/04/97	1435

DISTRIBUTION:
Keegan Landfill file

BETWEEN:	OF	PHONE
Christine Miller, Public Affairs	United Water Resources (UWR)	(800) 575-4433 T

AND
K. Campbell KC

DISCUSSION

Ms. Miller confirmed that UWR supplies drinking water to the communities of Secaucus and Weehawken, in addition to other communities. For the sources of drinking water supply, she will transfer me to Deb Rizzi in the Corporate Communications Department.

ACTION ITEMS:

Att. E

Ref. 11

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM		TELECON NOTE
CONTROL NO: 02-96-11-0044	DATE: 06/04/97	TIME: 1440
DISTRIBUTION: Keegan Landfill file		
BETWEEN: Deb Rizzi, Corporate Communications	OF United Water Resources (UWR)	PHONE (201) 767-2867
AND K. Campbell KC		

DISCUSSION

Ms. Rizzi confirmed that UWR obtains its drinking water supples from: the Hackensack River watershed, the Oradell Reservoir, the Lake Tappan Reservoir, the Lake DeForest Reservoir, and the Woodcliff Lake Reservoir; all sources are outside the area of concern. During drought conditions, UWR has the capability to draw water from the Passaic River Basin, northwest of Oradell.

She suggested that for future inquiries, we may be better served by calling Leo Fung in the Engineering Department at (201) 767-9300, ext. 6011.

ACTION ITEMS:

Ref. 11

Att. F

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-96-11-0044	06/23/97	0928

DISTRIBUTION:
Keegan Landfill file

BETWEEN:	OF Essex County	PHONE
Vince Bucci, Engineer	Parks Department	(973) 268-3500

AND
K. Campbell

DISCUSSION

Mr. Bucci confirmed that the Essex County Parks Department currently operates one well at the Branch Brook Park location. The well is used solely for re-filling Branch Brook Pond, in order to maintain a certain water level and to prevent stagnation.

ACTION ITEMS:

Ref. 12

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REFERENCE NO. 10

APPRAISAL OF WATER RESOURCES IN THE HACKENSACK RIVER BASIN, NEW JERSEY

By L. D. Carswell

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations 76–74

Prepared in cooperation with
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES

June 1976

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GEOLOGY

General Features

During the Late Triassic Epoch downfaulting produced a series of northeastward-trending basins in the Piedmont Plateau from North Carolina to Nova Scotia. Sedimentary and associated igneous rocks of Triassic age occupy the downfaulted basins and are known as the Newark Group. In New Jersey the Newark Group crops out in a band 16 to 30 miles wide trending southwestward from the Hudson River to the Delaware River (fig. 1). In the vicinity of the Delaware River the Newark Group is about 12,000 feet thick (Johnson and McLaughlin, 1957, p. 32). The bedrock in the Hackensack River basin is a part of the Newark Group of Late Triassic age.

The sedimentary rocks of the Newark Group in New Jersey are composed of reddish brown arkosic sandstone, mudstone, siltstone, and conglomerate, and dark-gray argillite. The sediments were derived largely from rocks of Paleozoic and Precambrian age to the southeast and were deposited in a nonmarine intermontane basin (Van Houten, 1965). In Triassic time the sedimentary rocks were intruded by diabase sills (intrusions which parallel the enclosing beds) and dikes (intrusions which cut across the bedding). The diabase is more resistant to erosion than other rocks of the Newark Group and generally forms ridges such as the Palisades.

The Newark Group has been divided into three formations on the basis of distinctive lithology: a lower unit, the Stockton Formation; a middle unit, the Lockatong Formation; and an upper unit, the Brunswick Formation. The Lockatong interfingers with both the underlying Stockton and overlying Brunswick; its presence has been reported at only one locality in the Hackensack River basin (Van Houten, 1964, p. 500). The distribution of the units of the Newark Group in the Hackensack River basin is shown in figure 3.

The beds of the Newark Group generally strike north to northeast in the Hackensack River basin and dip west to northwest at approximately 10 degrees. A prominent set of steeply dipping joints parallels the strike of the beds. A less prominent set of nearly-vertical joints parallels approximately the direction of dip of the beds. In the cliffs along the Hudson River the diabase has well developed columnar jointing which inspired the name "Palisades" for the vertical columns of rock. The faults that cut and displace the Triassic rocks typically strike northeastward and are parallel to or intersect the strike of the beds at a low angle.

Surficial deposits cover most of the bedrock in the Hackensack River basin and are largely a result of several major advances of the continental glaciers across the area during the Pleistocene Epoch. Younger deposits of Holocene age, consisting largely of alluvium deposited by present-day streams, overlie the glacial deposits. The alluvium is restricted to the flood plains of the streams.

During Pleistocene time glaciers which advanced across the basin probably removed an unknown thickness of weathered or easily eroded rock and soil. Part of this material was ground to clay size and the mixture later redeposited on the bedrock. Deposits of the latest (Wisconsin) ice advances now are exposed at the land surface. They consist of unsorted deposits of boulders, pebbles, sand, and rock flour which cover the hills and partly fill the valleys. A few miles south of the Hackensack River basin, frontal deposits from the melting ice sheet accumulated as a terminal moraine.

Streams of melt water issuing from the stagnating and retreating glacier formed stratified deposits of gravel, sand, silt, and clay. As the glacier retreated, crustal downwarping beneath the glacier, as a result of its weight, combined with blockage of drainage by the terminal moraine to the south ponded the melt water forming a lake known as Lake Hackensack in the area of the present Newark Bay and Hackensack Meadows and extending northward into Rockland County, N. Y. Subsequently, this lake was partly filled with deposits of varved silts, and clay prior to the establishment of outlets which drained the lake. The lake beds were eventually veneered with alluvium and a mat of decayed plant material.

Pre-Quaternary Rock Units

Stockton Formation

The Stockton Formation in the Hackensack River basin occurs in a narrow belt, as much as two miles wide, on the western slope of the Palisades from West New York, N. J., northward into Rockland County, New York. The Stockton underlies the Lockatong Formation in the southern part of the basin and intertongues with the Lockatong in the northern part of the basin. The Stockton is locally cut by the Palisades sill.

The Stockton is composed of light-colored arkosic sandstone and some thin beds of red sandstone and shale. The arkosic sandstone contains 50 to 70 percent quartz and 15 to 40 percent feldspar and is atypical in that the content of sodium feldspar exceeds that of potassium feldspar according to Van Houten (1965, p. 832-833). Silica cement is common. Also present are minor amounts of calcite and rarely dolomite cement as well as authigenic feldspar overgrowths and void fillings. In the past some arkosic sandstone has been quarried locally for building stone.

The exact thickness of the Stockton in northeastern New Jersey is unknown (Merrill and others, 1902, p. 6), but it is much less than the 5,000 feet along the Delaware River reported by Johnson and McLaughlin (1957, p. 40).

Lockatong Formation

The Lockatong Formation has been identified at only one location, North Bergen, in the Hackensack River basin. Here it consists of argillite that has been altered to hornsfels during the emplacement of the adjacent diabase sill (Van Houten, 1964, p. 500).

The Lockatong overlies the Stockton Formation and is overlain by the Brunswick Formation. Laterally it intertongues with both the Brunswick and the Stockton Formations.

The Lockatong Formation is composed of cyclic units of chemical and detrital origin that average 15 feet in thickness. The detrital deposits are mudstones composed of abundant sodium feldspar, calcite, illite, and chlorite with very little quartz and potassium feldspar. In the chemical deposits the mudstone contains abundant analcime, albite, dolomite, calcite, illite, and chlorite. Dolomite and analcime casts of skeletal glauberite (and possibly anhydrite) crystals are common in some of the chemical deposits (Van Houten, 1965).

The formation is 90 feet thick at North Bergen. It thins northward and is entirely missing at the New York-New Jersey State line. It presumably thickens south of North Bergen and is 3,750 feet thick in western New Jersey and adjacent Pennsylvania.

Brunswick Formation

The Brunswick Formation overlies the Stockton Formation and forms the bedrock throughout most of the Hackensack River basin. It is reddish-brown and composed of mudstone, siltstone, sandstone, and conglomerate. In the southern part of the basin mudstone is the dominant lithology. The deposits gradually become coarser grained northward (Kümmel 1898, p. 43 and Savage, 1968) so that in the northern part of the basin in New York the Brunswick consists largely of sandstone and commonly contains beds of conglomerate.

Gypsum and glauberite are reported to occur in the Brunswick Formation. Herpers and Barksdale (1951, p. 37) have reported the presence of gypsum from well borings in the Newark area just south of the Hackensack River basin. Glauberite has long been known to be present locally in the Brunswick Formation. Van Houten (1965, p. 834) reports that some beds enclose large complete molds of glauberite, as well as rosettes of elongate calcite casts. The coarser deposits are fledspathic and are commonly cemented by calcite (Van Houten, 1965, p. 834).

The thickness of the Brunswick Formation in the Hackensack River basin is unknown. Herpers and Barksdale (1951, p. 23) estimated the Brunswick to be about 6,000 to 7,000 feet thick in the Newark area just south of the Hackensack River basin.

REFERENCE NO. 11

federal register

Friday
December 14, 1990

Part II

Environmental Protection Agency

40 CFR Part 300
Hazard Ranking System; Final Rule

Ref. 11

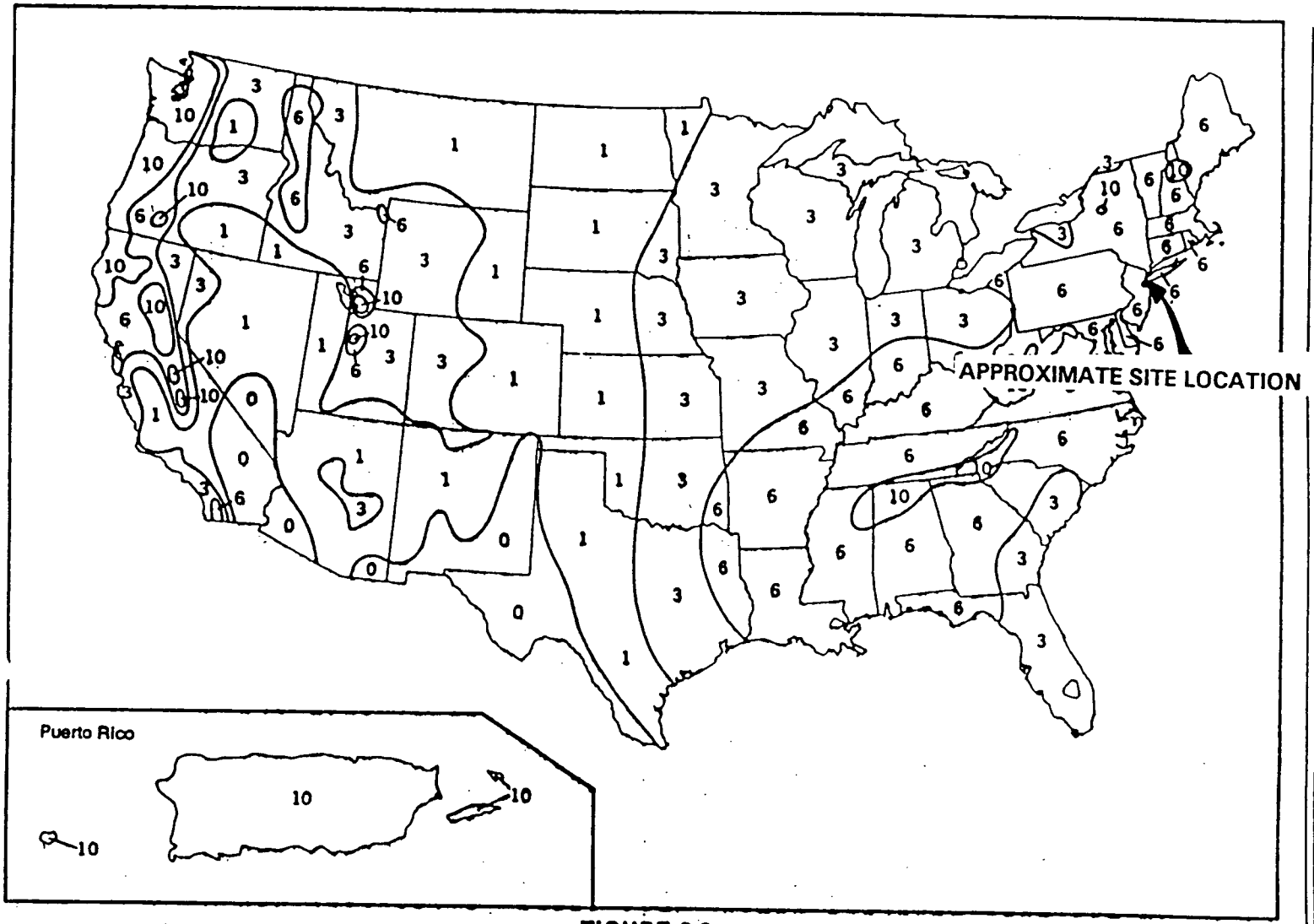

FIGURE 3-2
NET PRECIPITATION FACTOR VALUES

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–When measured monthly evapotranspiration is not available, calculate monthly potential evapotranspiration (E_i) as follows:

$E_i = 0.6\ F_i\ (10\ T_i/I)^a$

where:

E_i = Monthly potential evapotranspiration (inches) for month i.

F_i = Monthly latitude adjusting value for month i.

T_i = Mean monthly temperature (°C) for month i.

$$I = \sum_{i=1}^{12} (T_i/5)^{1.514}$$

$$a = 6.75 \times 10^{-7} I^3 - 7.71 \times 10^{-5} I^2 + 1.79 \times 10^{-2} I + 0.49239$$

Select the latitude adjusting value for each month from Table 3–3. For latitudes lower than 50° North or 20° South, determine the monthly latitude adjusting value by interpolation.

• Calculate monthly net precipitation by subtracting monthly evapotranspiration (or monthly potential evapotranspiration) from monthly precipitation. If evapotranspiration (or potential evapotranspiration) exceeds precipitation for a month, assign that month a net precipitation value of 0.

• Calculate the annual net precipitation by summing the monthly net precipitation values.

• Based on the annual net precipitation, assign a net precipitation factor value from Table 3–4.

Enter the value assigned from Figure 3–2 or from Table 3–4, as appropriate, in Table 3–1.

TABLE 3–3.—MONTHLY LATITUDE ADJUSTING VALUES[a]

Latitude[b] (degrees)	Month											
	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
≥50 N	0.74	0.78	1.02	1.15	1.33	1.36	1.37	1.25	1.06	0.92	0.76	0.70
45 N	0.80	0.81	1.02	1.13	1.28	1.29	1.31	1.21	1.04	0.94	0.79	0.75
40 N	0.84	0.83	1.03	1.11	1.24	1.25	1.27	1.18	1.04	0.96	0.83	0.81
35 N	0.87	0.85	1.03	1.09	1.21	1.21	1.23	1.16	1.03	0.97	0.89	0.85
30 N	0.90	0.87	1.03	1.08	1.18	1.17	1.20	1.14	1.03	0.98	0.89	0.88
20 N	0.95	0.90	1.03	1.05	1.13	1.11	1.14	1.11	1.02	1.00	0.93	0.94
10 N	1.00	0.91	1.03	1.03	1.08	1.06	1.08	1.07	1.02	1.02	0.98	0.99
0	1.04	0.94	1.04	1.01	1.04	1.01	1.04	1.04	1.01	1.04	1.01	1.04
10 S	1.08	0.97	1.05	0.99	1.00	0.96	1.00	1.02	1.00	1.06	1.05	1.09
20 S	1.14	0.99	1.05	0.97	0.96	0.91	0.95	0.99	1.00	1.08	1.09	1.15

[a] Do not round to nearest integer.
[b] For unlisted latitudes lower than 50° North or 20° South, determine the latitude adjusting value by interpolation.

TABLE 3–4.—NET PRECIPITATION FACTOR VALUES

Net precipitation (inches)	Assigned value
0	0
Greater than 0 to 5	1
Greater than 5 to 15	3
Greater than 15 to 30	6
Greater than 30	10

3.1.2.3 *Depth to aquifer.* Evaluate depth to aquifer by determining the depth from the lowest known point of hazardous substances at a site to the top of the aquifer being evaluated, considering all layers in that interval. Measure the depth to an aquifer as the distance from the surface to the top of the aquifer minus the distance from the surface to the lowest known point of hazardous substances eligible to be evaluated for that aquifer. In evaluating depth to aquifer in karst terrain, assign a thickness of 0 feet to a karst aquifer that underlies any portion of the sources at the site. Based on the calculated depth, assign a value from Table 3–5 to the depth to aquifer factor.

Determine the depth to aquifer only at locations within 2 miles of the sources at the site, except: if observed ground water contamination attributable to sources at the site extends more than 2 miles beyond these sources, use any location within the limits of this observed ground water contamination when evaluating the depth to aquifer factor for any aquifer that does not have an observed release. If the necessary geologic information is available at multiple locations, calculate the depth to aquifer at each location. Use the location having the smallest depth to assign the factor value. Enter this value in Table 3–1.

TABLE 3–5.—DEPTH TO AQUIFER FACTOR VALUES

Depth to aquifer[a] (feet)	Assigned value
Less than or equal to 25	5
Greater than 25 to 250	3
Greater than 250	1

[a] Use depth of all layers between the hazardous substances and aquifer. Assign a thickness of 0 feet to any karst aquifer that underlies any portion of the sources at the site.

3.1.2.4 *Travel time.* Evaluate the travel time factor based on the geologic materials in the interval between the lowest known point of hazardous substances at the site and the top of the aquifer being evaluated. Assign a value to the travel time factor as follows:

• If the depth to aquifer (see section 3.1.2.3) is 10 feet or less, assign a value of 35.

• If, for the interval being evaluated, all layers that underlie a portion of the sources at the site are karst, assign a value of 35.

• Otherwise:

–Select the lowest hydraulic conductivity layer(s) from within the above interval. Consider only layers at least 3 feet thick. However, do not consider layers or portions of layers within the first 10 feet of the depth to the aquifer.

–Determine hydraulic conductivities for individual layers from Table 3–6 or from in-situ or laboratory tests. Use representative, measured, hydraulic conductivity values whenever available.

–If more than one layer has the same lowest hydraulic conductivity, include all such layers and sum their thicknesses. Assign a thickness of 0 feet to a karst layer that underlies any portion of the sources at the site.

–Assign a value from Table 3–7 to the travel time factor, based on the thickness and hydraulic conductivity of the lowest hydraulic conductivity layer(s).

TABLE 3-6.—HYDRAULIC CONDUCTIVITY OF GEOLOGIC MATERIALS

Type of material	Assigned hydraulic conductivity [a] (cm/sec)
Clay; low permeability till (compact unfractured till); shale; unfractured metamorphic and igneous rocks	10^{-8} 10^{-9}
Silt; loesses; silty clays; sediments that are predominantly silts; moderately permeable till (fine-grained, unconsolidated till, or compact till with some fractures); low permeability limestones and dolomites (no karst); low permeability sandstone; low permeability fractured igneous and metamorphic rocks	10^{-4} 10^{-6}
Sands; sandy silts; sediments that are predominantly sand; highly permeable till (coarse-grained, unconsolidated or compact and highly fractured); peat; moderately permeable limestones and dolomites (no karst); moderately permeable sandstone; moderately permeable fractured igneous and metamorphic rocks	10^{-2} 10^{-4}
Gravel; clean sand; highly permeable fractured igneous and metamorphic rocks; permeable basalt; karst limestones and dolomites	10^{-1} 10^{-2}

[a] Do not round to nearest integer.

TABLE 3-7.—TRAVEL TIME FACTOR VALUES [a]

Hydraulic conductivity (cm/sec)	Thickness of lowest hydraulic conductivity layer(s)[b] (feet)			
	Greater than 3 to 5	Greater than 5 to 100	Greater than 100 to 500	Greater than 500
Greater than or equal to 10^{-3}	35	35	35	25
Less than 10^{-3} to 10^{-4}	35	25	15	15
Less than 10^{-4} to 10^{-7}	15	15	5	5
Less than 10^{-7}	5	5	1	1

[a] If depth to aquifer is 10 feet or less or if, for the interval being evaluated, all layers that underlie a portion of the sources at the site are karst, assign a value of 35.

[b] Consider only layers at least 3 feet thick. Do not consider layers or portions of layers within the first 10 feet of the depth to the aquifer.

Determine travel time only at locations within 2 miles of the sources at the site, except: if observed ground water contamination attributable to sources at the site extends more than 2 miles beyond these sources, use any location within the limits of this observed ground water contamination when evaluating the travel time factor for any aquifer that does not have an observed release. If the necessary subsurface geologic information is available at multiple locations, evaluate the travel time factor at each location. Use the location having the highest travel time factor value to assign the factor value for the aquifer. Enter this value in Table 3-1.

3.1.2.5 *Calculation of potential to release factor value.* Sum the factor values for net precipitation, depth to aquifer, and travel time, and multiply this sum by the factor value for containment. Assign this product as the potential to release factor value for the aquifer. Enter this value in Table 3-1.

3.1.3 *Calculation of likelihood of release factor category value.* If an observed release is established for an aquifer, assign the observed release factor value of 550 as the likelihood of release factor category value for that aquifer. Otherwise, assign the potential to release factor value for that aquifer as the likelihood of release value. Enter the value assigned in Table 3-1.

3.2 *Waste characteristics.* Evaluate the waste characteristics factor category for an aquifer based on two factors: toxicity/mobility and hazardous waste quantity. Evaluate only those hazardous substances available to migrate from the sources at the site to ground water. Such hazardous substances include:

- Hazardous substances that meet the criteria for an observed release to ground water.
- All hazardous substances associated with a source that has a ground water containment factor value greater than 0 (see sections 2.2.2, 2.2.3, and 3.1.2.1).

3.2.1 *Toxicity/mobility.* For each hazardous substance, assign a toxicity factor value, a mobility factor value, and a combined toxicity/mobility factor value as specified in the following sections. Select the toxicity/mobility factor value for the aquifer being evaluated as specified in section 3.2.1.3.

3.2.1.1 *Toxicity.* Assign a toxicity factor value to each hazardous substance as specified in Section 2.4.1.1.

3.2.1.2 *Mobility.* Assign a mobility factor value to each hazardous substance for the aquifer being evaluated as follows:

- For any hazardous substance that meets the criteria for an observed release by chemical analysis to one or more aquifers underlying the sources at the site, regardless of the aquifer being evaluated, assign a mobility factor value of 1.
- For any hazardous substance that does not meet the criteria for an observed release by chemical analysis to at least one of the aquifers, assign that hazardous substance a mobility factor value from Table 3-8 for the aquifer being evaluated, based on its water solubility and distribution coefficient (K_d).
- If the hazardous substance cannot be assigned a mobility factor value because data on its water solubility or distribution coefficient are not available, use other hazardous substances for which information is available in evaluating the pathway.

TABLE 3-8.—GROUND WATER MOBILITY FACTOR VALUES [a]

Water solubility (mg/l)	Distribution coefficient (K_d) (ml/g)			
	Karst [c]	≤ 10	> 10 to 1,000	> 1,000
Present as liquid [b]	1	1	0.01	0.0001
Greater than 100	1	1	0.01	0.0001
Greater than 1 to 100	0.2	0.2	0.002	2×10^{-5}
Greater than 0.01 to 1	0.002	0.002	2×10^{-5}	2×10^{-7}
Less than or equal to 0.01	2×10^{-5}	2×10^{-5}	2×10^{-7}	2×10^{-9}

[a] Do not round to nearest integer.
[b] Use if the hazardous substance is present or deposited as a liquid.
[c] Use if the entire interval from the source to the aquifer being evaluated is karst.

Drainage area. Determine the drainage area for the sources at the site. Include in this drainage area both the source areas and the area upgradient of the sources, but exclude any portion of this drainage area for which runoff is diverted from entering the sources by storm sewers or run-on control and/or runoff management systems. Assign a drainage area value for the watershed from Table 4–3.

Soil group. Based on the predominant soil group within the drainage area described above, assign a soil group designation for the watershed from Table 4–4 as follows:

• Select the predominant soil group as that type which comprises the largest total area within the applicable drainage area.

• If a predominant soil group cannot be delineated, select that soil group in the drainage area that yields the highest value for the runoff factor.

Calculation of runoff factor value. Assign a combined rainfall/runoff value for the watershed from Table 4–5, based on the 2-year, 24-hour rainfall and the soil group designation. Determine the runoff factor value for the watershed from Table 4–6, based on the rainfall/runoff and drainage area values. Enter the runoff factor value in Table 4–1.

TABLE 4–3.—DRAINAGE AREA VALUES

Drainage area (acres)	Assigned value
Less than 50	1
50 to 250	2
Greater than 250 to 1,000	3
Greater than 1,000	4

TABLE 4–4.—SOIL GROUP DESIGNATIONS

Surface soil description	Soil group designation
Coarse-textured soils with high infiltration rates (for example, sands, loamy sands).	A
Medium-textured soils with moderate infiltration rates (for example, sandy loams, loams).	B
Moderately fine-textured soils with low infiltration rates (for example, silty loams, silts, sandy clay loams).	C
Fine-textured soils with very low infiltration rates (for example, clays, sandy clays, silty clay loams, clay loams, silty clays); or impermeable surfaces (for example, pavement).	D

TABLE 4–5.—RAINFALL/RUNOFF VALUES

2-Year, 24-hour rainfall (inches)	Soil group designation			
	A	B	C	D
Less than 1.0	0	0	2	3
1.0 to less than 1.5	0	1	2	3
1.5 to less than 2.0	0	2	3	4
2.0 to less than 2.5	1	2	3	4
2.5 to less than 3.0	2	3	4	4
3.0 to less than 3.5	2	3	4	5
3.5 or greater	3	4	5	6

TABLE 4–6.—RUNOFF FACTOR VALUES

Drainage area value	Rainfall/runoff value						
	0	1	2	3	4	5	6
1	0	0	0	1	1	1	1
2	0	0	1	1	2	3	4
3	0	0	1	3	7	11	15
4	0	1	2	7	17	25	25

4.1.2.1.2.1.3 *Distance to surface water.* Evaluate the distance to surface water as the shortest distance, along the overland segment, from any source with a surface water containment factor value greater than 0 to either the mean high water level for tidal waters or the mean water level for other surface waters. Based on this distance, assign a value from Table 4–7 to the distance to surface water factor for the watershed. Enter this value in Table 4–1.

4.1.2.1.2.1.4 *Calculation of factor value for potential to release by overland flow.* Sum the factor values for runoff and distance to surface water for the watershed and multiply this sum by the factor value for containment. Assign the resulting product as the factor value for potential to release by overland flow for the watershed. Enter this value in Table 4–1.

4.1.2.1.2.2 *Potential to release by flood.* Evaluate potential to release by flood for each watershed as the product of two factors: containment (flood) and flood frequency. Evaluate potential to release by flood separately for each source that is within the watershed. Furthermore, for each source, evaluate potential to release by flood separately for each category of floodplain in which the source lies. (See section 4.1.2.1.2.2.2 for the applicable floodplain categories.) Calculate the value for the potential to release by flood factor as specified in 4.1.2.1.2.2.3.

4.1.2.1.2.2.1 *Containment (flood).* For each source within the watershed, separately evaluate the containment (flood) factor for each category of floodplain in which the source is partially or wholly located. Assign a containment (flood) factor value from Table 4–8 to each floodplain category applicable to that source. Assign a containment (flood) factor value of 0 to each floodplain category in which the source does not lie.

4.1.2.1.2.2.2 *Flood frequency.* For each source within the watershed, separately evaluate the flood frequency factor for each category of floodplain in which the source is partially or wholly located. Assign a flood frequency factor value from Table 4–9 to each floodplain category in which the source is located.

4.1.2.1.2.2.3 *Calculation of factor value for potential to release by flood.* For each source within the watershed and for each category of floodplain in which the source is partially or wholly located, calculate a separate potential to release by flood factor value. Calculate this value as the product of the containment (flood) value and the flood frequency value applicable to the source for the floodplain category. Select the highest value calculated for those sources that meet the minimum size requirement specified in section 4.1.2.1.2.1.1 and assign it as the value for the potential to release by flood factor for the watershed. However, if, for this watershed, no source at the site meets the minimum size requirement, select the highest value calculated for the sources at the site eligible to be evaluated for this watershed and assign it as the value for this factor.

TABLE 4–7.—DISTANCE TO SURFACE WATER FACTOR VALUES

Distance	Assigned value
Less than 100 feet	25
100 feet to 500 feet	20
Greater than 500 feet to 1,000 feet	16
Greater than 1,000 feet to 2,500 feet	9
Greater than 2,500 feet to 1.5 miles	6
Greater than 1.5 miles to 2 miles	3

TABLE 4–8.—CONTAINMENT (FLOOD) FACTOR VALUES

Containment criteria	Assigned value
Documentation that containment at the source is designed, constructed, operated, and maintained to prevent a washout of hazardous substances by the flood being evaluated.	0
Other	10

TABLE 4–9.—FLOOD FREQUENCY FACTOR VALUES

Floodplain category	Assigned value
Source floods annually	50
Source in 10-year floodplain	50
Source in 100-year floodplain	25
Source in 500-year floodplain	7
None of above	0

Enter this highest potential to release by flood factor value for the watershed in Table 4–1, as well as the values for containment (flood) and flood frequency that yield this highest value.

4.1.2.1.2.3 *Calculation of potential to release factor value.* Sum the factor values assigned to the watershed for potential to release by overland flow and potential to release by flood. Assign this sum as the potential to release factor value for the watershed, subject to a maximum value of 500. Enter this value in Table 4–1.

4.1.2.1.3 *Calculation of drinking water threat-likelihood of release factor category value.* If an observed release is established for the watershed, assign the observed release factor value of 550 as the likelihood of release factor category value for that watershed. Otherwise, assign the potential to release factor value for that watershed as the likelihood of release factor category value for that watershed. Enter the value assigned in Table 4–1.

4.1.2.2 *Drinking water threat-waste characteristics.* Evaluate the waste characteristics factor category for each

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the hazardous substance with the highest toxicity/persistence factor value for the watershed to assign the toxicity/persistence factor value for the drinking water threat for the watershed. Enter this value in Table 4–1.

4.1.2.2.2 *Hazardous waste quantity.* Assign a hazardous waste quantity factor value for the watershed as specified in section 2.4.2. Enter this value in Table 4–1.

4.1.2.2.3 *Calculation of drinking water threat-waste characteristics factor category value.* Multiply the toxicity/persistence and hazardous waste quantity factor values for the watershed, subject to a maximum product of 1 x 10^8. Based on this product, assign a value from Table 2–7 (section 2.4.3.1) to the drinking water threat-waste characteristics factor category for the watershed. Enter this value in Table 4–1.

TABLE 4–12.—TOXICITY/PERSISTENCE FACTOR VALUES [a]

Persistence factor value	Toxicity factor value					
	10,000	1,000	100	10	1	0
1.0	10,000	1,000	100	10	1	0
0.4	4,000	400	40	4	0.4	0
0.07	700	70	7	0.7	0.07	0
0.0007	7	0.7	0.07	0.007	0.0007	0

[a] Do not round to nearest integer.

4.1.2.3 *Drinking water threat-targets.* Evaluate the targets factor category for each watershed based on three factors: nearest intake, population, and resources.

To evaluate the nearest intake and population factors, determine whether the target surface water intakes are subject to actual or potential contamination as specified in section 4.1.1.2. Use either an observed release based on direct observation at the intake or the exposure concentrations from samples (or comparable samples) taken at or beyond the intake to make this determination (see section 4.1.2.1.1). The exposure concentrations for a sample (that is, surface water, benthic, or sediment sample) consist of the concentrations of those hazardous substances present that are significantly above background levels and attributable at least in part to the site (that is, those hazardous substance concentrations that meet the criteria for an observed release).

When an intake is subject to actual contamination, evaluate it using Level I concentrations or Level II concentrations. If the actual contamination is based on an observed release by direct observation, use Level II concentrations for that intake. However, if the actual contamination is based on an observed release from samples, determine which level applies for the intake by comparing the exposure concentrations from samples (or comparable samples) to health-based benchmarks as specified in sections 2.5.1 and 2.5.2. Use the health-based benchmarks from Table 3–10 (section 3.3.1) in determining the level of contamination from samples. For contaminated sediments with no identified source, evaluate the actual contamination using Level II concentrations (see section 4.1.1.2).

4.1.2.3.1 *Nearest intake.* Evaluate the nearest intake factor based on the drinking water intakes along the overland/flood hazardous substance migration path for the watershed. Include standby intakes in evaluating this factor only if they are used for supply at least once a year.

Assign the nearest intake factor a value as follows and enter the value in Table 4–1:

- If one or more of these drinking water intakes is subject to Level I concentrations as specified in section 4.1.2.3, assign a factor value of 50.
- If not, but if one or more of these drinking water intakes is subject to Level II concentrations, assign a factor value of 45.
- If none of these drinking water intakes is subject to Level I or Level II concentrations, determine the nearest of these drinking water intakes, as measured from the probable point of entry (or from the point where measurement begins for contaminated sediments with no identified source). Assign a dilution weight from Table 4–13 to this intake, based on the type of surface water body in which it is located. Multiply this dilution weight by 20, round the product to the nearest integer, and assign it as the factor value.

Assign the dilution weight from Table 4–13 as follows:

TABLE 4–13.—SURFACE WATER DILUTION WEIGHTS

Type of surface water body [a]		Assigned dilution weight [b]
Descriptor	Flow characteristics	
Minimal stream	Less than 10 cfs [c]	1
Small to moderate stream	10 to 100 cfs	0.1
Moderate to large stream	Greater than 100 to 1,000 cfs	0.01
Large stream to river	Greater than 1,000 to 10,000 cfs	0.001
Large river	Greater than 10,000 to 100,000 cfs	0.0001
Very large river	Greater than 100,000 cfs	0.00001
Coastal tidal waters [d]	Flow not applicable, depth not applicable	0.0001
Shallow ocean zone [e] or Great Lake	Flow not applicable, depth less than 20 feet	0.0001
Moderate depth ocean zone [e] or Great Lake	Flow not applicable, depth 20 to 200 feet	0.00001
Deep ocean zone [e] or Great Lake	Flow not applicable, depth greater than 200 feet	0.000005
3-mile mixing zone in quiet flowing river	10 cfs or greater	0.5

[a] Treat each lake as a separate type of water body and assign a dilution weight as specified in text.
[b] Do not round to nearest integer.
[c] cfs = cubic feet per second.
[d] Embayments, harbors, sounds, estuaries, back bays, lagoons, wetlands, etc., seaward from mouths of rivers and landward from baseline of Territorial Sea.
[e] Seaward from baseline of Territorial Sea. This baseline represents the generalized U.S. coastline. It is parallel to the seaward limit of the Territorial Sea and other maritime limits such as the inner boundary of the Federal fisheries jurisdiction and the limit of States jurisdiction under the Submerged Lands Act, as amended.

- For a river (that is, surface water body types specified in Table 4–13 as minimal stream through very large river), assign a dilution weight based on the average annual flow in the river at the intake. If available, use the average annual discharge as defined in the U.S. Geological Survey Water Resources Data Annual Report. Otherwise, estimate the average annual flow.
- For a lake, assign a dilution weight as follows:
  - For a lake that has surface water flow entering the lake, assign a dilution weight based on the sum of the

REFERENCE NO. 12

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

TOWN OF
KEARNY,
NEW JERSEY
HUDSON COUNTY

COMMUNITY-PANEL NUMBER
340224 0001 B

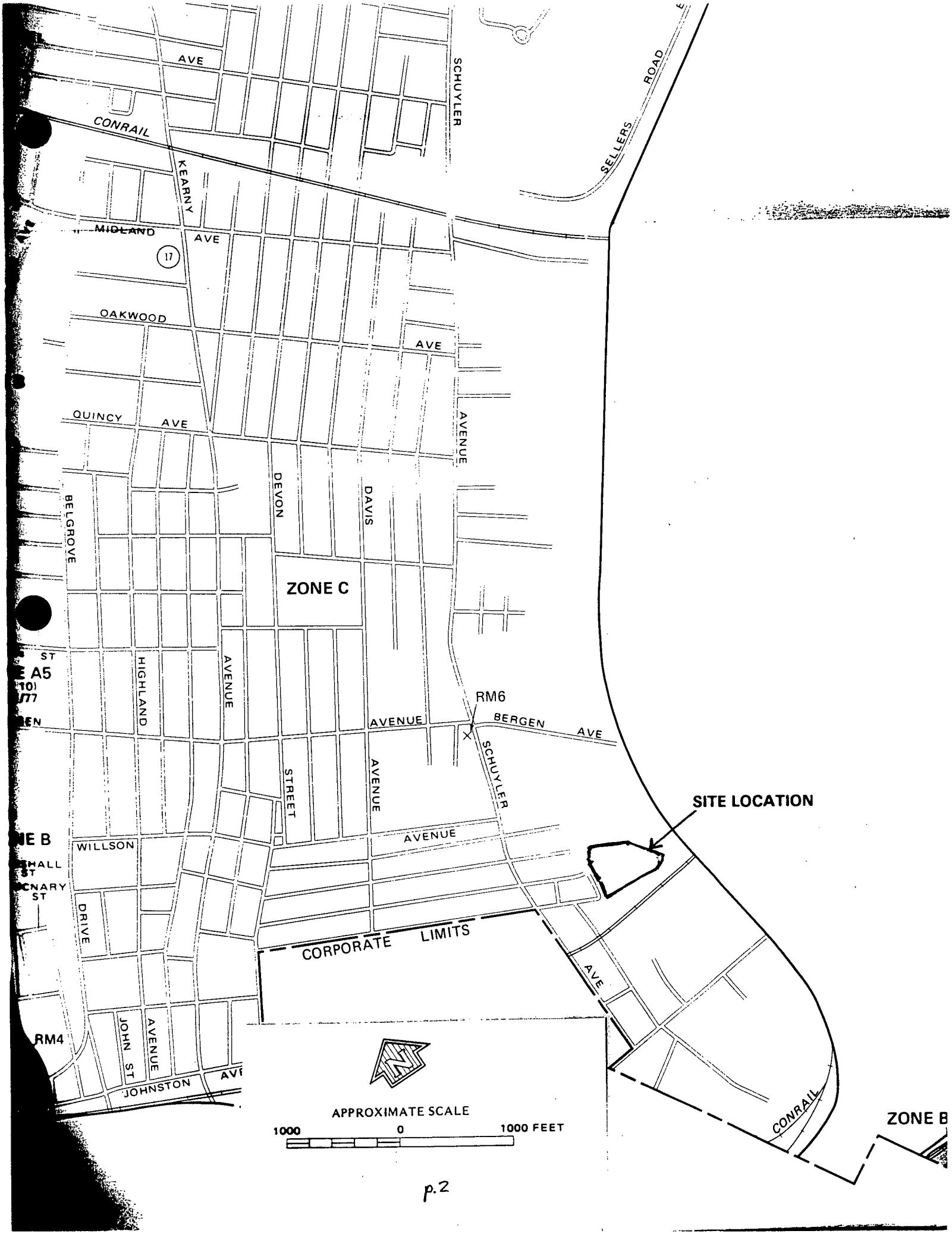
PAGE 1 OF 1

EFFECTIVE
DECEMBER 1, 1977

U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

Ref. 12

p.1


AVE
CONRAIL
KEARNY
SCHUYLER
SELLERS
ROAD
MIDLAND
AVE
17
OAKWOOD
AVE
QUINCY
AVE
AVENUE
DEVON
DAVIS
BELGROVE
ZONE C
ST
A5
HIGHLAND
AVENUE
RM6
AVENUE
BERGEN
AVE
SCHUYLER
STREET
AVENUE
SITE LOCATION
E B
WILLSON
AVENUE
HALL
ST
CNARY
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DRIVE
CORPORATE
LIMITS
AVE
RM4
JOHN ST
AVENUE
JOHNSTON
AVE
APPROXIMATE SCALE
1000
0
1000 FEET
CONRAIL
ZONE B

p.2

KEY TO MAP

500-Year Flood Boundary

100-Year Flood Boundary

Zone Designations* With Date of Identification e.g., 12/2/74

100-Year Flood Boundary

500-Year Flood Boundary

Base Flood Elevation Line With Elevation In Feet** — 513

Base Flood Elevation In Feet Where Uniform Within Zone** — (EL 987)

Elevation Reference Mark — RM7 ×

River Mile — • M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding with depth from 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15.
A1 - A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of 100-year flood and 500-year flood; or areas of 100-year shallow flooding with depth less than 1 foot. (Medium shading)
→ C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V0	Areas of 100-year shallow flooding with velocity; depth from 1 to 3 feet; product of depth (feet) and velocity (feet per second) more than 15.
V1 - V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

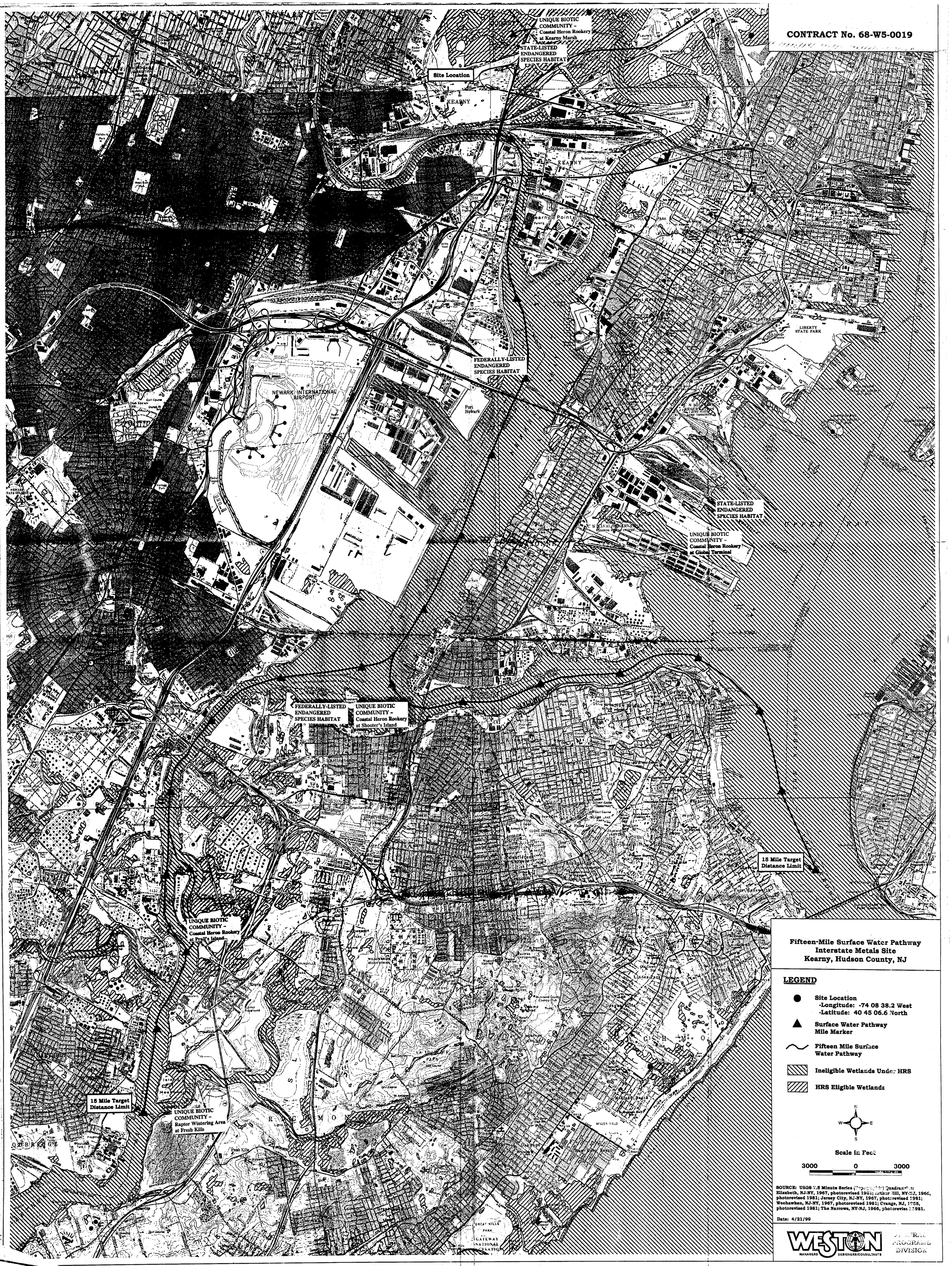
Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

INITIAL IDENTIFICATION
JUNE 28, 1974
AUGUST 13, 1976

REFERENCE NO. 13

CONTRACT No. 68-W5-0019



REFERENCE NO. 14

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **PROJECT NOTES**

TO: Interstate Metals file

DATE: 09/09/99

FROM: K. Campbell

SUBJECT: Wetlands in Site Vicinity

REFERENCE: The following wetland frontage and acreage were determined using the Fifteen Mile Surface Migration Limit Map for this Report:

Surface Water Pathway

Water Body	Frontage (miles)
Passaic River	0
Newark Bay	0.1
Arthur Kill	2
Kill Van Kull	0
Upper New York Bay	1
The Narrows	0
Lower New York Bay	0.1

Air Pathway

Distance Ring (mi)	Acreage
0 - 1/4	100
> 1/4 - ½	210
> ½ - 1	320
> 1 - 2	335
> 2 - 3	625
> 3 - 4	880

Ref 14

REFERENCE NO. 15

NEW JERSEY
Fish & Wildlife DIGEST

1998 FRESHWATER FISHING ISSUE

A SUMMARY OF RULES AND MANAGEMENT INFORMATION

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION · DIVISION OF FISH, GAME & WILDLIFE

VOL 11 NO 2 JANUARY 1998

Photo by Debra Elmire, DFG&W

inside...

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Warm and Coolwater Fish Regulations ...Page 12

1998 Fishing Season & Creel Limits ...Page 20

A Guide to Health Advisories for Eating Fish & Crabs Caught in NJ ...Page 24

Wildlife Management Area Regulations ...Page 31

Conserve Wildlife License Plate
Support Endangered and Nongame Species, see page 35

Ref. 15

P. 2

A Guide to Health Advisories For Eating Fish and Crabs Caught in New Jersey Waters

January 1998 Edition

What you need to know about recreational fishing and crabbing

Christine Todd Whitman, Governor • Robert C. Shinn, Jr., Commissioner, NJ Dept. of Environmental Protection

IMPORTANT HEALTH INFORMATION

Fish are an excellent source of protein, minerals and vitamins and play a role in maintaining a healthy, well-balanced diet. Many people enjoy cooking and eating their own catch. However, since 1982, when research began to show elevated levels of potentially harmful contaminants in certain fish and crabs in some New Jersey waters, advisories were adopted to guide citizens on safe consumption practices.

These advisories were developed with reference to federal guidelines for dioxin, PCBs, chlordane and mercury in the aquatic species in the water bodies listed in the charts. You should read both charts thoroughly before going fishing.

Dioxin, PCBs and chlordane are classified by the United States Environmental Protection Agency as probable cancer-causing substances in humans. Mercury can pose health risks to the human nervous system, particularly to developing fetuses.

To minimize exposure to these potentially harmful contaminants and to protect your health, follow the guidelines below when preparing and eating the species taken from the areas mentioned. The following charts contain advisories and prohibitions in effect for specific fish and crabs in each water body as of January 1998. (See the note on the advisory updates.)

These charts also contain information about advisories issued by the states of Pennsylvania and Delaware that cover the Delaware River and the Chesapeake and Delaware Canal. These areas are common fishing spots for New Jersey residents.

1997 BOUND BROOK INTERIM FISH ADVISORY

In August 1997, NJDEP issued an interim fish consumption advisory for the entire length of the Bound Brook, Middlesex County. This action was taken in response to an EPA investigation of extensive polychlorinated biphenyls (PCB) contamination at the Cornell-Dubilier Electronics site in South Plainfield, NJ. The EPA identified levels of PCBs in carp, white suckers and largemouth bass collected from New Market Pond exceeding the US Food and Drug Administration 2.0 ppm. action level. The EPA has collected additional fish and sediment samples to further delineate the extent of PCB contamination within the area.

The NJDEP interim fish consumption advisory warns the public **"do not consume any fish from the entire length of the Bound Brook"**. The interim fish consumption advisory will remain in effect until the results of the EPA sampling are available in early 1998. Upon review of the data, the NJDEP will issue a final fish consumption advisory. Should you want any additional information concerning this matter please contact the agencies listed below.

CATCH & RELEASE FISHING

Some fish have been tagged as part of ongoing scientific programs. If you capture a tagged fish, record the name and address of the tagging agency or program printed on the tag along with the number on the tag and the date and location of capture. Many programs offer small rewards for this information. For additional information on catch and release or tag and release, contact:

US Fish & Wildlife Service 1-800-448 8322 — NJ Division of Fish, Game and Wildlife 609-748-2020
American Littoral Society 1-800-8BAYKPR — NJ Chapter Hudson River Fishermen's Assoc. 201-857-2400

PREPARATION AND COOKING GUIDELINES FOR FISH UNDER ADVISORIES

You can reduce the level of PCBs, dioxins and most other other chemicals (but not mercury) by properly cleaning, skinning and trimming species affected by most advisories and by following the cooking recommendations below. However, do not eat prohibited fish (see charts at right).

FISH: • Before cooking, remove and do not eat, the organs, head, skin, and the dark fatty tissue along the back bone, belly and lateral line (sides) • Avoid batter or breading, because they hold in the liquid which may contain contaminants. • Bake or broil the fish on an elevated rack that allows fats to drain to the pan below; do not fry in a pan. • After cooking, discard all liquids. Do not reuse.

Other helpful guidelines to reduce exposure to contaminants: • Eat smaller-sized fish (within state size regulations), instead of larger fish. Smaller, younger fish have lower levels of contaminants than larger, older fish. • Eat a variety of fish from different locations.

BLUE CRABS: Eating, selling or taking (harvesting) blue crabs from Newark Bay Complex is prohibited. The highest levels of chemical contaminants are found in the hepatopancreas, commonly known as the tomalley or green gland. It is the yellowish green gland under the gills. If blue crabs are taken from the water bodies other than Newark Bay Complex, the following preparation techniques can be followed to reduce exposure to some contaminants: • Do not eat the green gland (hepatopancreas). • Remove green gland (hepatopancreas) before cooking. After cooking, discard the cooking water. • Do not use cooking water or green gland (hepatopancreas) in any juices, sauces or soups.

FISH AND CRAB ADVISORIES BASED ON PCB, DIOXINS AND CHLORDANE CONTAMINATION

LOCATION	SPECIES	GENERAL POPULATION	HIGH RISK INDIVIDUAL [1]
NEW JERSEY STATEWIDE			
Note: local advisories may be more specific for the same species. See below.	American eel	do not eat more than once a week	do not eat
	bluefish (over 6 lbs.)	do not eat more than once a week	do not eat
	striped bass*	consumption advisories vary by area; see below	consumption advisories vary by area see below
	American lobsters	do not eat green glands	do not eat green glands
NEWARK BAY COMPLEX			
This complex includes Newark Bay, Hackensack River downstream of Oradell Dam, Arthur Kill, Kill Van Kull, tidal portions of all rivers and streams that feed into these water bodies and	striped bass*	do not eat	do not eat
	American eel*	do not eat more than once a week	do not eat
	blue crab*	do not eat or harvest [2]	do not eat or harvest [2]
	bluefish (over 6 lbs.), white perch and white catfish	do not eat more than once a week	do not eat
Passaic River downstream of Dundee Dam and streams that feed into this section of the river	all fish and shellfish*	do not eat	do not eat
	blue crab*	do not eat or harvest [2]	do not eat or harvest [2]
HUDSON RIVER			
Hudson River includes the river downstream of NY-NJ border (about 4 miles above Alpine, NJ) and Upper New York Bay.	American eel*	do not eat more than once a week	do not eat
	striped bass*	do not eat more than once a week	do not eat
	bluefish (over 6 lbs.), white perch and white catfish	do not eat more than once a week	do not eat
	blue crab	do not eat green gland (hepatopancreas) [3]	do not eat green gland (hepatopancreas) [3]
RARITAN BAY COMPLEX			
This complex includes the New Jersey portions of Sandy Hook and Raritan bays, the tidal portions of the Raritan River (downstream of the Rte. 1 bridge in New Brunswick) and the tidal portions of all rivers and streams that feed into these water bodies.	striped bass*	do not eat more than once a week	do not eat
	bluefish (over 6 lbs.), white perch and white catfish	do not eat more than once a week	do not eat
	blue crab	do not eat green gland (hepatopancreas) [3]	do not eat green gland (hepatopancreas) [3]
NORTHERN COASTAL WATERS			
This area includes all coastal waters from Raritan Bay south to the Barnegat Inlet	striped bass*	do not eat more than once a week	do not eat
CAMDEN AREA See additional advisories below			
This area includes Strawbridge Lake, Pennsauken Creek (north and south branches) Cooper River and its drainage, Cooper River Lake, Stewart Lake and Newton Lake.	all fish, shellfish and crustaceans*	do not eat	do not eat
LOWER DELAWARE RIVER & BAY NJ is honoring DE and PA advisories See additional advisories on other chart.			
Delaware River from Yardley, PA to the PA/DE border.	American eel	do not eat	do not eat
Delaware River from Yardley, PA (across from Ewing Twp., NJ) south to the Chesapeake area Delaware Canal	channel catfish* white catfish white perch	do not eat	do not eat
Lower Delaware River includes the river between the PA Turnpike Bridge (I-276 bridge) in Burlington Twp. (Burlington County) and Birch Creek in Logan Twp. (Gloucester County)) about 2 miles below Commodore Barry Bridge	channel catfish*	do not eat	do not eat
Delaware River from the DE/PA border south to the Delaware and Chesapeake Canal	striped bass*	do not eat	do not eat
Delaware River from the Chesapeake and Delaware Canal (across from Salem, NJ) south to mouth of the Delaware Bay	striped bass* channel catfish white catfish	do not eat more than five 8 ounce meals per year	do not eat more than three 4-ounce meals per year *Note: This portion size differs from others listed in this brochure.*

* Selling any of these species from designated water bodies is prohibited in New Jersey

1 High risk individuals include: infants, children under the age of 15, pregnant women, nursing mothers and women of childbearing age. They are advised not to eat any such fish or crabs taken from the designated regions since these contaminants have a greater impact on the developing young.

2 No harvest means no taking or attempting to take any blue crabs from these waters.

3. Interim recommendation based on research showing elevated levels of chemical contaminants in the blue crab hepatopancreas (green gland).

CONSUMPTION ADVISORIES FOR LARGEMOUTH BASS AND CHAIN PICKEREL FROM NEW JERSEY FRESHWATERS

AMERICAN LOBSTERS: A recent regional study of the American lobster has shown elevated levels of PCBs, cadmium and dioxin in the green gland (tomalley or hepatopancreas). This finding is consistent with other lobster studies conducted in waters of the northeastern coastal states. Therefore, consumers are advised to remove and not consume the green gland of all American lobsters caught from Maine to NJ, as well as avoid products made from the lobster green gland. This advisory does not apply to other edible portions of the lobster.

ADVISORY UPDATES

Advisories on fish consumption can change to protect public health as new data are collected and reviewed by state and federal agencies. Also, these agencies on occasion offer different advice for fish consumption. New Jersey is working with other agencies and is committed to developing the most useful, consistent advice possible. For the latest information, call one of the numbers below.

A GUIDE TO MERCURY HEALTH ADVISORIES FOR EATING FISH FROM NEW JERSEY FRESHWATERS

Recent research on largemouth bass and chain pickerel prompted the Department of Environmental Protection and the Department of Health & Senior Services to issue consumption advisories due to elevated levels of mercury found in these species. Mercury, a toxic metal, accumulates in fish tissue through the food chain. Since larger fish feed on smaller fish, mercury collects in their tissue as well, so that larger fish at the top of the food chain—such as largemouth bass and chain pickerel—are more likely to have elevated levels of mercury.

It is very unlikely that the levels of mercury found in these fish would cause immediate health effects. However, repeated consumption of contaminated fish poses potential health effects. Of particular concern is the potential effect on the nervous system of developing fetuses.

Although data show elevated levels of mercury in certain fish, it does not affect the quality of the waters used for drinking and bathing.

The charts provide general and specific information on the statewide and the Pinelands area advisories. The Pinelands area covers much of the seven counties in the southeastern portion of the state: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Ocean counties. Some but not all of the water bodies covered under these general advisories have been tested. More testing is under way.

See recently issued advice below by the federal government regarding mercury in saltwater fish.

FEDERAL ADVICE ON MERCURY IN SALTWATER FISH

In the September 1994 issue of *FDA Consumer* magazine, the US Food and Drug Administration (FDA) issued advice on eating shark and swordfish based on elevated levels of mercury contamination. Pregnant women and women of childbearing age who may become pregnant are advised by the FDA to limit their consumption of shark and swordfish to not more than one 7-ounce meal a month. For the general population, the FDA advises that consumption of shark and swordfish be limited to no more than one 7-ounce meal per week.

Some evidence suggests, however, that shark and swordfish should be consumed less frequently. This information is based on a US Environmental Protection Agency June 1994 report and on average mercury levels in shark and swordfish as reported by the FDA. Based on this evidence, women of childbearing age would be advised to eat no more than one 8-ounce portion of shark or swordfish every two months. The general population would be advised to eat shark no more than twice a month and swordfish no more than three times a month. Children under seven would be advised not to eat shark and swordfish at all.

If you would like further information, please call the New Jersey Department of Health & Senior Services at (609) 588-3123. You may also consider discussing this matter with your family physician.

FOR MORE INFORMATION

Some of the advisories listed herein may be changing. For the most up-to-date information, please contact:

NJ Department of Environmental Protection
Division of Science & Research (609) 984-6070
Division of Fish, Game & Wildlife (609) 748-2020

NJ Department of Health & Senior Services
Consumer & Environmental Health Services (609) 588-3123

For background information on the advisories in the chart, local libraries can refer you to NJ Administrative Code 7:25-14, 18A

For information on Delaware health advisories, contact:
DE Department of Health and Social Services (302) 739-5617

For information on New York health advisories, contact:
NY Department of Environmental Conservation (518) 457-6178

For information on Pennsylvania health advisories, contact:
PA Department of Environmental Resources (717) 787-9633

For information on health advice regarding saltwater fish, contact:
US Food and Drug Administration Seafood Hotline at (800) FDA-4010

CONSUMPTION ADVISORIES FOR LAREGEMOUTH BASS AND CHAIN PICKEREL FROM NEW JERSEY FRESHWATERS

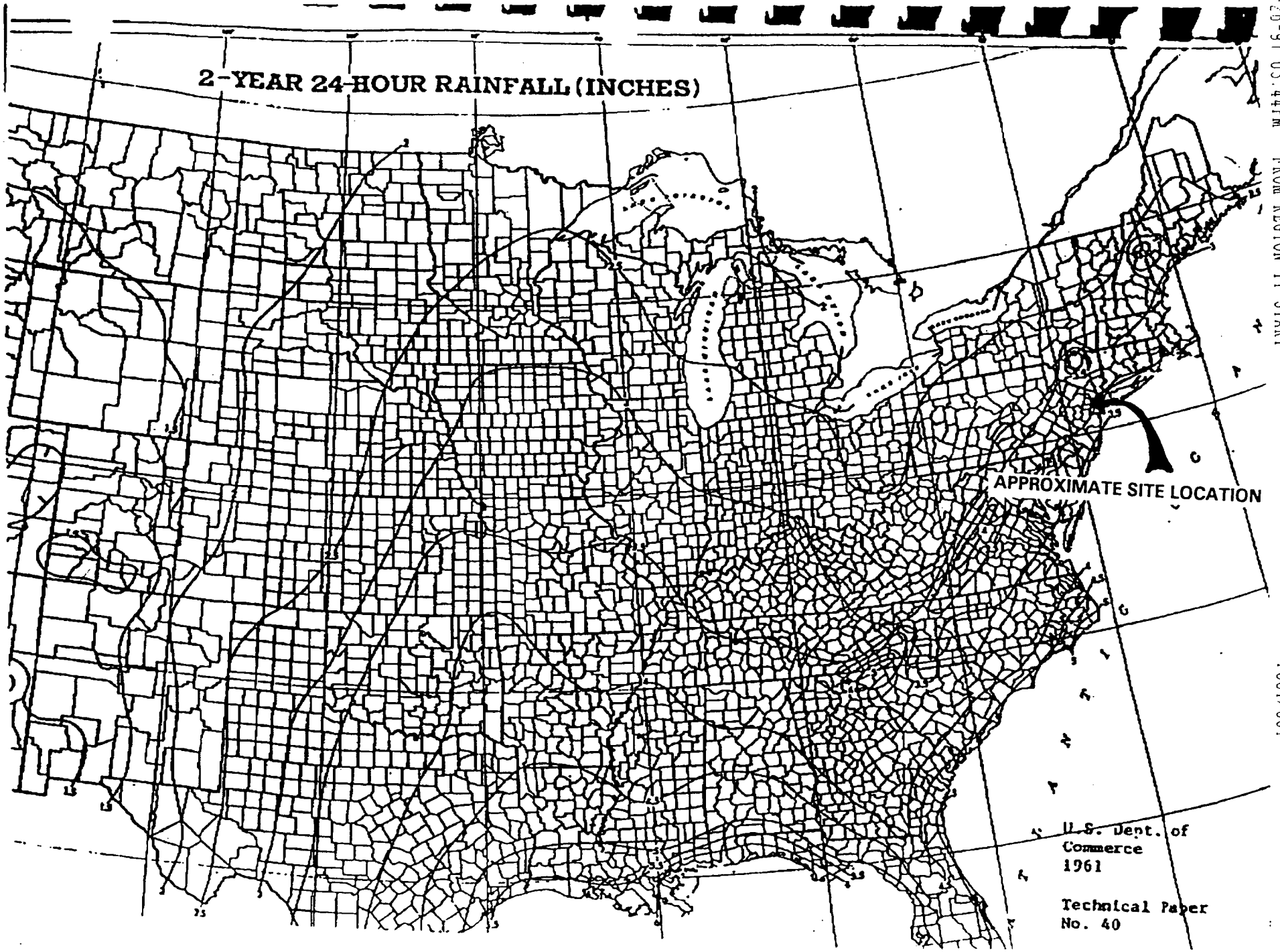
LOCATION	SPECIES	ADVISORY +	
		GENERAL POPULATION	HIGH RISK INDIVIDUALS*
NEW JERSEY STATEWIDE			
For all freshwater bodies (except those listed below)	bass and pickerel	do not eat more than once a week	do nor eat more than once a month
PINELANDS AREA			
For all water bodies (except those listed below)	bass and pickerel	do not eat more than once a week	do not eat
SITE-SPECIFIC PINELANDS			
Lake Lenape	bass	do not eat more than once a month	do not eat
	pickerel	do not eat more than once a week	do not eat more than once a month
Mirror Lake	bass	no restrictions	do not eat more than once a month
	pickerel	no restrictions	do not eat more than once a week
Stafford Forge	bass	do not eat more than once a month	do not eat
	pickerel	do not eat more than once a week	do not eat
Wading River	bass	do not eat more than once a month	do not eat
	pickerel	do not eat more than once a week	do not eat
SITE-SPECIFIC STATEWIDE			
Assunpink Creek	bass	no restrictions	do not eat more than once a week
	pickerel	do not eat more than once a week	do not eat more than once a month
Atlantic City Reservoir - No Fishing Allowed	bass	do not eat	do not eat
	pickerel	do not eat	do not eat
Big Timber Creek	bass	no restrictions	do not eat more than once a week
	pickerel	do not eat more than once a week	do not eat more than once a month
Canistear Reservoir	bass	do not eat more than once a week	do not eat
	pickerel	do not eat more than once a week	do not eat more than once a month
Clinton Reservoir	bass	do not eat more than once a week	do not eat
	pickerel	do not eat more than once a week	do not eat more than once a month
Cranberry Lake	bass	do not eat more than once a week	do not eat more than once a month
	pickerel	no restrictions	do not eat more than once a month
Crosswicks Creek	bass	no restrictions	do not eat more than once a week
	pickerel	do not eat more than once a week	do not eat more than once a month
Crystal Lake (Burlington County)	bass	no restrictions	do not eat more than once a week
	pickerel	do not eat more than once a week	do not eat more than once a month
Delaware River (Easton to Trenton)	bass	no restrictions	do not eat more than once a month
	pickerel	do not eat more than once a week	do not eat more than once a month
Delaware River (Trenton to Camden) See additional advisories above	bass	no restrictions	do not eat more than once a week
	pickerel	do not eat more than once a week	do not eat more than once a month
Lake Carasaljo	bass	do not eat more than once a week	do not eat
	pickerel	no restrictions	do not eat more than once a month
Lake Hopatcong	bass	no restrictions	do not eat more than once a month
	pickerel	no restrictions	do not eat more than once a month
Manasquan Reservoir	bass	do not eat more than once a month	do not eat
	pickerel	do not eat more than once a week	do not eat more than once a month
Merrill Creek Reservoir	bass	do not eat more than once a week	do not eat
	pickerel	do not eat more than once a week	do not eat more than once a month
Monksville Reservoir	bass	do not eat more than once a week	do not eat
	pickerel	do not eat more than once a week	do not eat more than once a month
Rockaway River	bass	do not eat more than once a week	do not eat more than once a month
	pickerel	no restrictions	do not eat more than once a month
Round Valley Reservoir	bass	no restrictions	do not eat more than once a month
	pickerel	do not eat more than once a week	do not eat more than once a month
Shadow Lake	bass	no restrictions	do not eat more than once a week
	pickerel	do not eat more than once a week	do not eat more than once a month
Spruce Run Reservoir	bass	no restrictions	do not eat more than once a month
	pickerel	do not eat more than once a week	do not eat more than once a month
Swartswood Lake	bass	do not eat more than once a week	do not eat more than once a month
	pickerel	no restrictions	do not eat more than once a week
Union Lake	bass	do not eat more than once a month	do not eat
	pickerel	do not eat more than once a month	do not eat
Wanaque Reservoir	bass	do not eat more than once a week	do not eat
	pickerel	do not eat more than once a week	do not eat
Wilson Lake	bass	do not eat more than once a week	do not eat more than [illegible]
	pickerel	do not eat more than once a week	do not eat
Woodstown Memorial Lake	bass	no restrictions	do not eat more than [illegible]
	pickerel	do not eat more than once a week	do not eat more than [illegible]

+ One meal is defined as an eight-ounce serving.

* High risk individuals are pregnant women, women planning pregnancy within one year, nursing mothers and children under [illegible]

P.3

REFERENCE NO. 16


2-YEAR 24-HOUR RAINFALL (INCHES)
APPROXIMATE SITE LOCATION
U.S. Dept. of Commerce 1961
Technical Paper No. 40

REFERENCE NO. 17

Surface Water Quality Standards

N. J. A. C. 7:9B

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Office Of Environmental Planning
April 1998

Rel. 17

"DRBC" means Delaware River Basin Commission.

"EC50" means the median effective concentration of a toxic substance expressed as a statistical estimate of the concentration that has a specified adverse effect on 50 percent of the test organisms under specified test conditions, based on the results of an acute bioassay.

"Epilimnion" means the freely circulating upper region of a thermally stratified waterbody extending from the surface to the thermocline.

"Existing uses" means those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the Surface Water Quality Standards.

"Federal Act" means the "Federal Water Pollution Control Act" (33 U.S.C. § 1251 et seq.), commonly referred to as the Clean Water Act, including all subsequent supplements and amendments.

"Flow-through bioassay" means a toxicity test in which the test solutions flow into and out of the test chambers on a once-through basis for the duration of the test, in accordance with N.J.A.C. 7:18.

"Fresh water(s)" means all nontidal and tidal waters generally having a salinity, due to natural sources, of less than or equal to 3.5 parts per thousand at mean high tide.

"FW" means the general surface water classification applied to fresh waters.

"FW1" means those fresh waters, as designated in N.J.A.C. 7:9B-1.15(h) Table 6, that are to be maintained in their natural state of quality (set aside for posterity) and not subjected to any man-made wastewater discharges or increases in runoff from anthropogenic activities. These waters are set aside for posterity because of their clarity, color, scenic setting, other characteristic of aesthetic value, unique ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resource(s).

"FW2" means the general surface water classification applied to those fresh waters that are not designated as FW1 or Pinelands Waters.

"Groundwater" means that portion of water beneath the land surface that is within the zone of saturation (below the water table) where pore spaces are filled with water.

"Heat dissipation area" means a mixing zone, as may be designated by the Department, into which thermal effluents may be discharged for the purpose of mixing, dispersing, or dissipating such effluents without creating nuisances, hazardous

"Nonpoint source" or "NPS" means:

1. Any man-made or man-induced activity, factor, or condition, other than a point source, from which pollutants are or may be discharged;
2. Any man-made or man-induced activity, factor, or condition, other than a point source, that may temporarily or permanently change any chemical, physical, biological, or radiological characteristic of waters of the State from what was or is the natural, pristine condition of such waters, or that may increase the degree of such change; or
3. Any activity, factor, or condition, other than a point source, that contributes or may contribute to water pollution.

"Nontrout waters" means fresh waters that have not been designated in N.J.A.C. 7:9B-1.15(b) through (h) as trout production or trout maintenance. These waters are generally not suitable for trout because of their physical, chemical, or biological characteristics, but are suitable for a wide variety of other fish species.

"NPDES" means National Pollutant Discharge Elimination System.

"NT" means nontrout waters.

"Nutrient" means a chemical element or compound, such as nitrogen or phosphorus, which is essential to and promotes the growth and development of organisms.

"Outstanding National Resource Waters" means high quality waters that constitute an outstanding national resource (for example, waters of National/State Parks and Wildlife Refuges and waters of exceptional recreational or ecological significance) as designated in N.J.A.C. 7:9B-1.15(i).

"Persistent" means relatively resistant to degradation, generally having a half life of over 96 hours.

"Pinelands waters" means all waters within the boundaries of the Pinelands Area, except those waters designated as FW1 in N.J.A.C. 7:9B-1.15(h) Table 6, as established in the Pinelands Protection Act (N.J.S.A. 13:18A-1 et seq.) and shown on Plate 1 of the "Comprehensive Management Plan" adopted by the New Jersey Pinelands Commission in November 1980.

"PL" means the general surface water classification applied to Pinelands Waters.

"Point source" or "PS" means any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

"Pollutant" means any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, medical wastes, radioactive substance (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2011 et. seq.)), thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, agricultural and construction waste or runoff or other residue discharged directly or indirectly to the land, ground waters or surface waters of the State, or to a domestic treatment works as defined at N.J.A.C. 7:14A-1.2. "Pollutant" includes both hazardous and nonhazardous pollutants.

"Primary contact recreation" means water related recreational activities that involve significant ingestion risks and includes, but is not limited to, wading, swimming, diving, surfing, and water skiing.

"Public hearing" means a legislative type hearing before a representative or representatives of the Department providing the opportunity for public comment, but does not include cross-examination.

"River mile" or "R.M." means the distance, measured in statute miles, between two locations on a stream, with the first location designated as mile zero. For example, mile zero for the Delaware River is located at the intersection of the center line of the navigation channel and a line between the Cape May Light, New Jersey, and the tip of Cape Henlopen, Delaware.

"Saline waters" means waters having salinities generally greater than 3.5 parts per thousand at mean high tide.

"SC" means the general surface water classification applied to coastal saline waters.

"SE" means the general surface water classification applied to saline waters of estuaries.

"Secondary contact recreation" means recreational activities where the probability of water ingestion is minimal and includes, but is not limited to, boating and fishing.

"Shellfish" means those mollusks commonly known as clams, oysters, or mussels.

"Shellfish waters" means waters classified as Approved, Seasonally Approved, Special Restricted, Seasonally Special Restricted or Condemned that support or possess the potential to support shellfish which are within the Coastal Area Facility Review Act (C.A.F.R.A.) zone as delineated in 1973, (excluding: 1 - The Cohansey River upstream of Brown's Run; 2 - The Maurice River upstream of Route 548; 3 - The Great Egg Harbor River upstream of Powell Creek; 4 - The Tuckahoe River upstream of Route 50; 5 - The Mullica River upstream of the Garden State Parkway) plus the adjacent areas between Route 35 (from its juncture with the C.A.F.R.A. zone just north of Red Bank to

sedimentation, resulting in substantial particulate removal but no consistent removal of chemical constituents) and disinfection; and

5. Any other reasonable uses.

(d) In all SE1 waters the designated uses are:

1. Shellfish harvesting in accordance with N.J.A.C. 7:12;

2. Maintenance, migration and propagation of the natural and established biota;

3. Primary and secondary contact recreation; and

4. Any other reasonable uses.

(e) In all SE2 waters the designated uses are:

1. Maintenance, migration and propagation of the natural and established biota;

2. Migration of diadromous fish;

3. Maintenance of wildlife;

4. Secondary contact recreation; and

5. Any other reasonable uses.

(f) In all SE3 waters the designated uses are:

1. Secondary contact recreation;

2. Maintenance and migration of fish populations;

3. Migration of diadromous fish;

4. Maintenance of wildlife; and

5. Any other reasonable uses.

(g) In all SC waters the designated uses are:

1. Shellfish harvesting in accordance with N.J.A.C. 7:12;

2. Primary and secondary contact recreation;

3. Maintenance, migration and propagation of the natural and established biota; and

4. Any other reasonable uses.

7:9B-1.13 Designated uses of mainstem Delaware River and Delaware Bay

(a) The designated uses for the mainstem Delaware River and Delaware Bay are those contained in "Delaware River Basin Commission, Water Quality Regulations, Administrative Manual - Part III," Article 3, dated October 23, 1996, including all amendments and future supplements thereto.

(b) The designated uses for other waters under the jurisdiction of the DRBC are as set forth at N.J.A.C. 7:9B-1.15(d).

7:9B-1.14 Surface water quality criteria

(a) Surface water quality criteria for FW1 waters shall be maintained as to quality in their natural state.

(b) Surface water quality criteria for PL waters are as follows:

1. These waters shall be maintained as to quality in their existing state or that quality necessary to attain or protect the designated uses, whichever is more stringent.

   i. For Nitrate-Nitrogen a level of 2 mg/L shall be maintained in the surface waters unless it is shown that a lower level must be maintained to protect the existing surface water quality.

   ii. A pH level between 3.5 and 5.5 shall be maintained unless it is demonstrated that a pH level outside of that range is necessary to protect the existing/ designated uses.

2. The water quality criteria for existing discharges are the water quality criteria contained in "Surface Water Quality Standards" as adopted in March 1981, except that:

   i. The criteria for Nitrate-Nitrogen and pH promulgated in N.J.A.C. 7:9B-1.14(b)1 for PL waters apply instead of the 1981 criteria, and;

   ii. The criteria for phosphorous and toxic substances promulgated in N.J.A.C. 7:9B-1.14(c) apply instead of the 1981 criteria, as though

5. To find unnamed waterways or waterbodies or named waterways or waterbodies which do not appear in the listing, use the following instructions:
   i. Unnamed or unlisted freshwater streams that flow into streams classified as FW2-TP, FW2-TM, or FW2-NT take the classification of the classified stream they enter, unless the unlisted stream is a PL water which is covered in (b)5vii below. If the stream could be a C1 water, see (b)5vi below.
   ii. All freshwater lakes, ponds and reservoirs that are five or more acres in surface area, that are not located entirely within the Pinelands Area boundaries (see (b)5vii below) and that are not specifically listed as FW2-TP or FW2-TM are classified as FW2-NT. This includes lakes, ponds and reservoirs on segments of streams which are classified as FW2-TM or FW2-TP such as Saxton Lake on the Musconetcong River. If the waterbody could be a C1 water, also check (b)5vi below.
   iii. All freshwater lakes, ponds and reservoirs, that are less than five acres in surface area, upstream of and contiguous with FW2-TP or FW2-TM streams, and which are not located entirely within the Pinelands Area boundaries (see(b)5vii below) are classified as FW2-TM. All other freshwater lakes, ponds and reservoirs that are not otherwise classified in this subsection or the following tables are classified as FW2-NT. If the waterbody could be a C1 water, also check (b)5vi below.
   iv. Unnamed or unlisted streams that enter FW2 lakes, ponds and reservoirs take the classification of either the listed tributary stream flowing into the lake with the highest classification or the listed tributary stream leaving the lake with the highest classification, whichever has the highest classification, or, if there are no listed tributary or outlet streams to the lake, the first listed stream downstream of the lake. If the stream is located within the boundaries of the Pinelands Area, see (b)5.vii. below; if it could be a C1 water, also see (b)5vi below.
   v. Unnamed or unlisted saline waterways and waterbodies are classified as SE1 in the Atlantic Coastal Basin. Unnamed or unlisted saline waterways which enter SE2 or SE3 waters in the Passaic, Hackensack and New York Harbor Complex basin are classified as SE2 unless otherwise classified within Table 3 in (e) below. Freshwater portions of unnamed or unlisted streams entering SE1, SE2, or SE3 waters are classified as FW2-NT. This only applies to waters that are not PL waters (see (b)5vii below). If the waterbody or waterway could be a C1 water, also see (b)5vi below.
   vi. If the waterway or waterbody of interest flows through or is entirely located within State parks, forests or fish and game lands, Federal wildlife refuges, other special holdings, or is a State shellfish water as defined in this subchapter, the Department's maps should be checked to determine if the waterbody of interest is mapped as a C1 water. If the waterway or waterbody does not appear on the United States Geological Survey quadrangle that the Department used as a base map in its designation of the C1 waters, the Department will determine on a case-by-case basis whether the waterway or waterbody should be designated as C1.

(e) The surface water classifications in Table 3 are for waters of the Passaic, Hackensack and New York Harbor Complex Basin:

TABLE 3

Waterbody	Classification
APSHAWA BROOK (Macopin) - Entire length	FW2-TP(C1)
ARTHUR KILL	
→ (Perth Amboy) - The Kill and its saline New Jersey tributaries between the Outerbridge Crossing and a line connecting Ferry Pt., Perth Amboy to Wards Pt., Staten Island, New York	SE2
→ (Elizabeth) - From an east-west line connecting Elizabethport with Bergen Pt., Bayonne to the Outerbridge Crossing	SE3
(Woodbridge) - All freshwater tributaries	FW2-NT
BEAR SWAMP BROOK (Mahwah) - Entire length	FW2-TP(C1)
BEAR SWAMP LAKE (Ringwood State Park)	FW2-NT(C1)
BEAVER BROOK	
(Meriden) - From Splitrock Reservoir Dam downstream to Meriden Road Bridge	FW2-TP(C1)
(Denville) - Meriden Road Bridge to Rockaway River	FW2-NT
TRIBUTARIES	
(Meriden) - Two tributaries located approximately three quarters of a mile southwest of Meriden	FW2-TP(C1)
BEECH BROOK	
(West Milford) - From State line downstream to Monksville Reservoir	FW2-TM
BELCHER CREEK (W. Milford) - Entire length	FW2-NT
BERRYS CREEK (Secaucus) - Entire length	FW2-NT/SE2
BLACK BROOK	
(Meyersville) - Entire length, except segment described below	FW2-NT
(Great Swamp) - Segment and tributaries within the Great Swamp National Wildlife Refuge	FW2-NT(C1)
BLUE MINE BROOK	
(Wanaque) - Headwaters Downstream to lower Snake Den Road bridge	FW2-TP(C1)
(Wanaque) - lower Snake Den Road bridge to the boundary of Norvin Green State Forest	FW2-TM
(Norvin Green State Forest) - That portion of the stream and any tributaries within the Norvin Green State Forest	FW2-TM(C1)

ELIZABETH RIVER	
(Elizabeth) - Source to Broad St. bridge, Elizabeth and all freshwater tributaries	FW2-NT
(Elizabeth) - Broad St. bridge to mouth	SE3
FOX BROOK (Mahwah) - Entire length	FW2-NT
GLASMERE POND (Ringwood)	FW2-NT(C1)
GOFFLE BROOK (Hawthorne) - Entire length	FW2-NT
GRANNEY BROOK - See SPRING BROOK	
GRANNIS BROOK (Morris Plains) - Entire length	FW2-NT
GREAT BROOK	
(Chatham) - Entire length, except segment described below	FW2-NT
(Great Swamp) - Segment within the boundaries of the Great Swamp National Wildlife Refuge	FW2-NT(C1)
GREEN BROOK	
(W. Milford) - Entire length, except those segments described below	FW2-TP(C1)
(Hewitt State Forest) - Those segments and tributaries which originate and are located entirely within the Hewitt State Forest boundaries	FW1(tp)
GREEN POND (Rockaway)	FW2-TM
GREEN POND BROOK	
(Picatinny Arsenal) - Green Pond outlet to, but not including, Picatinny Lake	FW2-TP(C1)
(Wharton) - Outlet of Picatinny Lake to the confluence with the Rockaway River	FW2-NT
GREENWOOD LAKE (W. Milford)	FW2-TM
HACKENSACK RIVER	
(Oradell) - Source to Oradell dam	FW2-NT
(Oradell) - Main stem and saline tributaries from Oradell dam to the confluence with Overpeck Creek	SE1
(Little Ferry) - Main stem and saline tributaries from Overpeck Creek to Route 1 and 9 crossing	SE2
→ (Kearny Point) - Main stem downstream from Route 1 and 9 crossing	SE3
TRIBUTARIES	
(Oradell) - Tributaries joining the main stem between Oradell dam and the confluence with Overpeck Creek	FW2-NT/SE1
(Little Ferry) - Tributaries joining the main stem downstream of Overpeck Creek	FW2-NT/SE2
HANKS POND (Clinton) - Pond and all tributaries	FW1
HARMONY BROOK (Brookside) - Entire length	FW2-TP(C1)
HARRISONS BROOK (Bernards) - Entire length	FW2-NT
HAVEMEYER BROOK (Mahwah) - Entire length	FW2-TP(C1)

HEWITT BROOK (W. Milford) - Entire length	FW2-TP(C1)
HIBERNIA BROOK	
(Marcella) - Source to first Green Pond Road bridge downstream of Lake Emma	FW2-TP(C1)
(Hibernia) - First Green Pond Road bridge to confluence with Beaver Brook	FW2-TM
TRIBUTARY	
(Lake Ames) - Source to, but not including, Lake Ames	FW2-TP(C1)
HIGH MOUNTAIN BROOK (Ringwood) - Source to, but not including, Skyline Lake	FW2-TP(C1)
HOHOKUS BROOK (Hohokus) - Entire length	FW2-NT/SE2
HUDSON RIVER	
(Rockleigh) - River and saline portions of New Jersey tributaries from the New Jersey-New York boundary line in the north to its confluence with the Harlem River, New York	SE1
→ (Englewood Cliffs) - River and saline portions of New Jersey tributaries from the confluence with the Harlem River, New York to a north-south line connecting Constable Hook (Bayonne) to St. George (Staten Island, New York)	SE2
TRIBUTARIES	
(Rockleigh) - Freshwater portions of tributaries to the Hudson River in New Jersey	FW2-NT
INDIAN GROVE BROOK (Bernardsville) - Entire length	FW2-TP(C1)
JACKSON BROOK	
(Mine Hill) - Source to the boundary of Hurd Park, Dover	FW2-TP(C1)
(Dover) - Hurd Park to Rockaway River	FW2-NT
JENNINGS CREEK (W. Milford) - State line to Wanaque River	FW2-TP(C1)
JERSEY CITY RESERVOIR (Boonton)	FW2-TM
KANOUSE BROOK (Newfoundland) - Entire length	FW2-TP(C1)
KIKEOUT BROOK (Butler) - Entire length	FW2-NT
→ KILL VAN KULL (Bayonne) - Westerly from a north-south line connecting Constable Hook (Bayonne) to St. George (Staten Island, New York)	SE3
LAKE RICKONDA OUTLET STREAM (Monks) - That segment of the outlet stream from Lake Rickonda within Ringwood State Park	FW2-TM(C1)
LAKE STOCKHOLM BROOK	
(Stockholm) - Entire length, except tributaries described separately below	FW2-TP(C1)
(Stockholm) - Portion of westerly tributary, from its origins to about 1000 feet south of the Route 23 bridge, located entirely within the boundaries of the Newark watershed	FW1(tp)
(Stockholm) - Brook between Hamburg Turnpike and	FW1(tp)

Vernon-Stockholm Rd. to its confluence with Lake Stockholm Brook, north of Rt. 23	
LITTLE POND BROOK (Oakland) - Entire length	FW2-TP(C1)
LOANTAKA BROOK	
(Green Village) - Entire length, except segment described below	FW2-NT
(Great Swamp) - Brook and all tributaries within the boundaries of Great Swamp National Wildlife Refuge	FW2-NT(C1)
LUD-DAY BROOK (Camp Garfield) - Source downstream to its confluence with the southwestern outlet stream from Clinton Resevoir just upstream of the confluence of the outlet stream and a tributary from Camp Garfield	FW1
MACOPIN RIVER	
(Newfoundland) - Source to Echo Lake dam	FW2-NT
(Newfoundland) - Echo Lake dam to Pequannock River	FW2-TM
MEADOW BROOK	
(Wanaque) - Skyline Lake to E. Belmont Ave.	FW2-NT
(Wanaque) - E. Belmont Ave. downstream to Wanaque River	FW2-TP(C1)
MILL BROOK	
(Randolph) - Source to Rt. 10 bridge	FW2-TP(C1)
(Randolph) - Rt. 10 bridge to Rockaway River	FW2-NT
MONKSVILLE RESERVOIR (Long Pond Iron Works State Park)	FW2-TM(C1)
MORSES CREEK (Linden) - Entire length	FW2-NT/SE3
MOSSMANS BROOK (West Milford) - Source to confluence with Clinton Reservoir	FW2-TP(C1)
MT. TABOR BROOK (Morris Plains) - Entire length	FW2-NT
→ NEWARK BAY (Newark) - North of an east-west line connecting Elizabethport with Bergen Pt., Bayonne up to the mouths of the Passaic and Hackensack Rivers	SE3
NOSENZO POND (Upper Macopin)	FW2-NT(C1)
OAK RIDGE RESERVOIR (Oak Ridge)	FW2-TM
OAK RIDGE RESERVOIR (Oak Ridge) - Northwestern tributary to Reservoir	FW1(tm)
OHIO BROOK (Morris Township) - Source downstream to Morristown town line	FW2-TM
OVERPECK CREEK (Palisades Park) - Entire length	FW2-NT/SE2
PACACK BROOK	
(Canistear) - Brook and tributaries upstream of Canistear Reservoir located entirely within the boundaries of the Newark Watershed	FW1
(Stockholm) - Outlet of Canistear Reservoir to	FW2-NT

Pequannock River	
PASSAIC RIVER	
(Mendham) - Source downstream to, but not including, Osborn Pond or tributaries described separately below	FW2-TP(C1)
(Paterson) - Outlet of Osborn Pond to Dundee Lake dam	FW2-NT
(Little Falls) - Dundee Lake dam to confluence with Second River	FW2-NT/SE2
→ (Newark) - Confluence with Second River to mouth	SE3
TRIBUTARIES	
(Great Piece Meadows State Park) - Tributaries within Great Piece Meadows State Park	FW2-NT(C1)
PECKMAN RIVER (Verona) - Entire length	FW2-NT
PEQUANNOCK RIVER	
MAIN STEM	
(Vernon) - Source to confluence with Pacack Brook	FW1(tp)
(Hardyston) - Pacack Brook to, but not including, Oak Ridge Reservoir	FW2-TM
(Newfoundland) - Outlet of Oak Ridge Reservoir downstream to, but not including Charlotteburg Reservoir	FW2-TP(C1)
(Charlotteburg) - Outlet of Charlotteburg Reservoir to, but not including, Macopin Reservoir or the tributaries described separately below	FW2-TM
(Kinnelon) - Macopin Reservoir outlet to Hamburg Turnpike bridge in Pompton Lakes Borough	FW2-TP(C1)
(Riverdale) - Hamburg Turnpike bridge in Pompton Lakes Borough to confluence with Wanaque River	FW2-TM
(Pompton Plains) - Confluence with Wanaque River downstream to confluence with Pompton River	FW2-NT
TRIBUTARIES	
(Copperas Mtn.) - Entire length	FW2-TP(C1)
(Smoke Rise) - Entire length	FW2-TP(C1)
(Green Pond Junction) - Tributary at Green Pond Junction from its origin downstream to Route 23	FW1(tm)
(Jefferson) - Tributary joining the main stem about 3500± feet southeast of the Sussex-Passaic County line, near Jefferson from its origin to about 2000 feet upstream of the pond	FW1(tm)
(Lake Kampfe) - Source to, but not including, Lake Kampfe	FW2-TM
(Lake Kampfe) - Lake Kampfe to Pequannock River, except tributary described separately below	FW2-NT
(Lake Kampfe) - Tributary within the boundaries of	FW2-NT(C1)

REFERENCE NO. 18

Ref. 18

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WATER QUALITY REGULATIONS

SURFACE WATER AND GROUNDWATER CLASSIFICATIONS AND STANDARDS

New York State
Codes, Rules and Regulations
Title 6, Chapter X
Parts 700-705

New York State Department of Environmental Conservation

PART 700

DEFINITIONS, SAMPLES AND TESTS

(Statutory authority: Environmental Conservation Law, §§ 3-0301[2][m], 15-0313, 17-0301, 17-0303, 17-0809)

Sec.		Sec.	
700.1	Definitions	700.3	Tests or analytical methods
700.2	Collection of samples	700.4	Severability

Historical Note

Part repealed, new (§§ 700.1-700.2) filed: April 28, 1972; Feb. 25, 1974; repealed, new (§§ 700.1-700.4) filed Aug. 2, 1991 eff. 30 days after filing.

Section 700.1 Definitions. (a) The terms, words, or phrases used in Parts 700-705 of this Title shall have the meanings described below.

(1) *Acute toxic effect* means an effect that usually occurs shortly after the administration of either a single dose or multiple doses of a chemical.

(2) *Administrator* means the Administrator of the United States Environmental Protection Agency.

(3) *Approved treatment* as applied to water supplies means treatment accepted as satisfactory by the authorities responsible for exercising supervision over the quality of water supplies.

(4) *Best usages* as specified for each class of water means those uses as determined by the commissioner in accordance with the considerations prescribed by the Environmental Conservation Law.

(5) *Chronic toxic effect* means an effect that is irreversible or progressive or occurs because the rate of injury is greater than the rate of repair during prolonged exposure to a chemical.

(6) *Coastal waters* mean those marine waters within the territorial limits of the State other than estuaries and enclosed bays. Long Island Sound is designated as coastal waters for the purposes of thermal discharges.

(7) *Commissioner* means the Commissioner of the Department of Environmental Conservation.

(8) *Consolidated rock or bedrock* means the compact or solid hard rock beneath or exposed at the surface of the earth or overlain by surface waters.

(9) *Department* means the New York State Department of Environmental Conservation.

(10) *Disposal system* means a system for disposing of sewage, industrial waste or other wastes, including sewer systems and treatment works.

(11) *Effluent limitations* mean any restriction on quantities, qualities, rates and concentrations of chemical, physical, biological, and other constituents of effluents that are discharged into or allowed to run from an outlet or point source or any other discharge within the meaning of section 17-0501 of the Environmental Conservation Law into surface waters, groundwater or unsaturated zones.

(12) *Enclosed bays* mean those marine waters within the territorial limits of New York State, other than coastal waters or estuaries, in which exchange of sea water is severely limited by barrier beaches. For the purpose of thermal discharges, the following are designated as enclosed bays: Jamaica Bay, Hempstead Bay, Great South Bay, Moriches Bay, Shinnecock Bay and Mecox Bay.

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(b) These waters shall contain no floating solids, settleable solids, oil, sludge deposits, toxic wastes, deleterious substances, colored or other wastes or heated liquids attributable to sewage, industrial wastes or other wastes.

(c) There shall be no discharge or disposal of sewage, industrial wastes or other wastes into these waters.

(d) These waters shall contain no phosphorus and nitrogen in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.

Historical Note

Sec. amd. filed May 26, 1967; repealed, new filed: April 28, 1972; Feb. 25, 1974; renum. 701.18, new filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.4 Class A-Special (A-S) fresh surface waters. (a) The best usages of Class A-S waters are: a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish propagation and survival.

(b) This classification may be given to those international boundary waters that, if subjected to approved treatment, equal to coagulation, sedimentation, filtration and disinfection with additional treatment, if necessary, to reduce naturally present impurities, meet or will meet New York State Department of Health drinking water standards and are or will be considered safe and satisfactory for drinking water purposes.

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Historical Note

Sec. repealed, new filed: April 28, 1972; Feb. 25, 1974; amd. filed Sept. 20, 1974; renum. 701.19, new filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.5 Class AA fresh surface waters. (a) The best usages of Class AA waters are: a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish propagation and survival.

(b) This classification may be given to those waters that, if subjected to approved disinfection treatment, with additional treatment if necessary to remove naturally present impurities, meet or will meet New York State Department of Health drinking water standards and are or will be considered safe and satisfactory for drinking water purposes.

Historical Note

Sec. repealed, filed March 20, 1967; new filed Feb. 25, 1974; amd. filed Sept. 20, 1974; renum. 701.20, new filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.6 Class A fresh surface waters. (a) The best usages of Class A waters are: a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish propagation and survival.

(b) This classification may be given to those waters that, if subjected to approved treatment equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to reduce naturally present impurities, meet or will meet New York State Department of Health drinking water standards and are or will be considered safe and satisfactory for drinking water purposes.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.7 Class B fresh surface waters. The best usages of Class B waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.8 Class C fresh surface waters. The best usage of Class C waters is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.9 Class D fresh surface waters. The best usage of Class D waters is fishing. Due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery, or stream bed conditions, the waters will not support fish propagation. These waters shall be suitable for fish survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

SALINE SURFACE WATERS

→ **701.10 Class SA saline surface waters.** The best usages of Class SA waters are shellfishing for market purposes, primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

→ **701.11 Class SB saline surface waters.** The best usages of Class SB waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.12 Class SC saline surface waters. The best usage of Class SC waters is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

→ **701.13 Class I saline surface waters.** The best usages of Class I waters are secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.14 Class SD saline surface waters. The best usage of Class SD waters is fishing. These waters shall be suitable for fish survival. This classification may be given to those waters that, because of natural or man-made conditions, cannot meet the requirements for primary and secondary contact recreation and fish propagation.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

GROUNDWATERS

701.15 Class GA fresh groundwaters. The best usage of Class GA waters is as a source of potable water supply. Class GA waters are fresh groundwaters.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.16 Class GSA saline groundwaters. The best usages of Class GSA waters are as a source of potable mineral waters, for conversion to fresh potable waters, or as raw material for the manufacture of sodium chloride or its derivatives or similar products. Class GSA waters are saline groundwaters.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.17 Class GSB saline groundwaters. The best usage of Class GSB waters is as a receiving water for disposal of wastes. Class GSB waters are saline groundwaters that have a chloride concentration in excess of 1,000 milligrams per liter or a total dissolved solids concentration in excess of 2,000 milligrams per liter.

Historical Note

Sec. filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.18 Assignment of groundwater classifications. (a) The groundwater classifications defined in sections 701.15 through 701.16 of this Part are assigned to all the groundwaters of New York State.

(b) The Class GSB shall not be assigned to any groundwaters of the State, unless the commissioner finds that adjacent and tributary groundwaters and the best usages thereof will not be impaired by such classification.

Historical Note

Sec. added by renum. 701.3, filed July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.19 Severability. If any provision of this Part or its application to any person or circumstance is held to be invalid, the remainder of this Part and the application of that provision to other persons or circumstances will not be affected.

Historical Note

Sec. added by renum. and amd. 701.4, filed July 3, 1985; amd. filed Sept. 20, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

701.20

Historical Note

Sec. added by renum. 701.5, filed July 3, 1985; amd. filed Sept. 20, 1985; repealed, filed Aug. 2, 1991 eff. 30 days after filing.

PART 702

DERIVATION AND USE OF STANDARDS AND GUIDANCE VALUES

(Statutory authority: Environmental Conservation Law, §§ 3-0301[2][m], 15-0313, 17-0301, 17-0303, 17-0809)

Sec.
702.1 Basis for derivation of water quality standards and guidance values
702.2 Standards and guidance values for protection of human health and sources of potable water supplies
702.3 Procedures for deriving standards and guidance values based on Specific MCLs and principal organic contaminant classes
702.4 Procedures for deriving standards and guidance values based on oncogenic effects
702.5 Procedures for deriving standards and guidance values based on nononcogenic effects
702.6 Procedure for deriving standards and guidance values based on aesthetic considerations
702.7 Procedure for deriving standards and guidance values based on chemical correlation
702.8 Procedures for deriving standards and guidance values for protection of human health from consumption of fish
702.9 Standards and guidance values for protection of aquatic life
702.10 Procedures for deriving standards and guidance values for fish propagation and survival
702.11 Procedures for deriving standards and guidance values for fish survival
702.12 Procedures for deriving standards and guidance values based on tainting of aquatic food
702.13 Procedures for deriving standards and guidance values to protect wildlife consumers of fish
702.14 Procedure for deriving standards and guidance values based on chemical correlations
702.15 Derivation of guidance values
702.16 Derivation and implementation of effluent limitations
702.17 Variances for effluent limitations based on aquatic standards or guidance values
702.18 More stringent groundwater effluent standards or limitations
702.19 Modifications of groundwater effluent standards or limitations
702.20 Studies and monitoring for discharges to groundwater
702.21 Exceptions to groundwater effluent limitations
702.22 Severability

Historical Note

Part repealed, new filed: April 28, 1972; Feb. 25, 1974; repealed, new (§§ 702.1-702.22) filed Aug. 2, 1991 eff. 30 days after filing.

Section 702.1 Basis for derivation of water quality standards and guidance values. (a) The control of taste-, color- and odor-producing, toxic and other deleterious substances is implemented through the use of standards and guidance values. Standards and guidance values for such substances shall be derived according to the procedures set forth in this Part.

(b) The derivation of standards and guidance values will consider, to the extent possible, variations in natural or background conditions of waters, including but not limited to alkalinity, temperature, hardness and pH.

Historical Note

Sec. repealed, new filed: April 28, 1972; Feb. 25, 1974; amds. filed: Sept. 20, 1974; July 3, 1985; repealed, new filed Aug. 2, 1991 eff. 30 days after filing.

702.2 Standards and guidance values for protection of human health and sources of potable water supplies. (a) Standards and guidance values for protection of the best usage as a source of potable water supply shall protect human health and drinking water sources and are referred to as health (water source) values.

REFERENCE NO. 19

STATE OF NEW YORK

OFFICIAL COMPILATION

OF

CODES, RULES AND REGULATIONS

GEORGE E. PATAKI
Governor

ALEXANDER F. TREADWELL
Secretary of State

Published by
DEPARTMENT OF STATE
162 Washington Avenue
Albany, New York 12231

1/1/95

Ref 19

p. 1

Title 6
Conservation
Vol. D-1

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Secretary of State
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Printed in the United States of America
by
Lawyers Cooperative Publishing
Aqueduct Building
Rochester, New York 14694

PART

Subchapter B Classes and Standards of Quality and Purity Assigned to Fresh Surface and Tidal Salt Waters (continued) 875

SUBCHAPTER B

Classes and Standards of Quality and Purity Assigned to Fresh Surface and Tidal Salt Waters (continued)

PART

VOLUME D-1

Article 11 Mohawk River Drainage Basin Series 875
Article 12 Nassau County Waters 885
Article 13 New York City Waters Series 890

ARTICLE 13

New York City Waters Series

PART
890 New York City Waters
891 Jamaica Bay Drainage Basin

PART 890

NEW YORK CITY WATERS

(Statutory authority: Environmental Conservation Law, § 17-0301)

Sec.
890.1 Adopting order
890.2 Designated waters
890.3 Definitions
890.4 Special conditions
890.5 Assigned classifications and standards of quality and purity
890.6 Table I
890.7 Map 1
890.8 Map 2
890.9 Map 3
890.10 Map 4
890.11 Quadrangle maps

Historical Note

Part amd. filed June 20, 1988 eff. 30 days after filing. Amended statutory authority.

§ 890.1 Adopting order.

(a) Pursuant to article 12 of the Public Health Law, the Water Resources Commission, after proper study and following public hearings held on due notice, hereby adopts and assigns the following classifications and standards of quality and purity to all surface waters within the designated drainage basins of New York Bay, Raritan Bay and a portion of the Atlantic Ocean, including the subbasins of Arthur Kill, Kill Van Kull, the Harlem River and the Lower East River as hereinafter described.

(b) This adoption and assignment of standards of quality and purity to the above designated waters shall be effective December 22, 1964.

§ 890.2 Designated waters.

(a) The designated waters are within the following areas:

(1) the drainage basin of New York Bay below the mouth of the Hudson River at the south tip of Manhattan Island, including Gravesend Bay, Coney Island Creek, Atlantic Basin, Erie Basin, Gowanus Bay, Gowanus Canal, Upper New York Bay, Lower New York Bay, The Narrows and the Atlantic Ocean waters, including the drainage area off Coney Island and lying westerly of a north-south line from Light Inlet at the southeasterly tip of Coney Island peninsula to the southwesterly tip of Rockaway Point; thence along the jetty to Rockaway jetty light; thence due south to the New York - New Jersey boundary line;

(2) the lower East River drainage basin from the mouth to a line across the East River north of Wards Island between Stony Point in Bronx County and Lawrence Point in Queens County; and

(3) the drainage basins of Arthur Kill, Kill Van Kull, the Harlem River and Raritan Bay.

(b) The above designated waters are located as shown on Map 1, section 890.7 *infra*, and as contained within the topographical or basin limit line on the reproduced topographical reference maps set forth in section 890.11, *infra*. Classifications of primary waters are outlined on Map 3, section 890.9, *infra*.

§ 890.6 Table I.

TABLE I

CLASSIFICATIONS AND STANDARDS OF QUALITY AND PURITY ASSIGNED TO FRESH SURFACE WATERS AND TIDAL SALT WATERS, INCLUDING CERTAIN TIDAL WATERS OF THE INTERSTATE SANITATION DISTRICT WITHIN DESIGNATED DRAINAGE BASINS OF NEW YORK BAY, RARITAN BAY AND A PORTION OF THE ATLANTIC OCEAN, INCLUDING THE SUBBASINS OF ARTHUR KILL, KILL VAN KULL, THE HARLEM RIVER AND THE LOWER EAST RIVER, BRONX, KINGS, NEW YORK, QUEENS, RICHMOND AND WESTCHESTER COUNTIES, NEW YORK

Item No.	*Waters Index Number*	*Name*	*Description*	*Map Ref. No.*	*Class*	*Standards*
			ATLANTIC OCEAN AND NEW YORK BAY			
1		Atlantic Ocean portion	That portion of the ocean within New York State opposite Rockaway peninsula bounded on the west by a line from the tip of Rockaway Point, thence south along the jetty to Rockaway jetty light, thence due south to the state boundary line; and bounded on the north by the shore of Rockaway peninsula from the western tip to the Nassau-Queens county line at East Rockaway Inlet; and bounded on the east by the Nassau-Queens county line along East Rockaway Inlet, thence south to the state boundary line.	S-24sw S-24se	SA	SA
2		Atlantic Ocean and Lower New York Bay east portions	Ocean and bay waters within New York State opposite Coney Island peninsula and Staten Island bounded on the west by a north-south line drawn from the south limits of Fort Wadsworth Military Reservation and passing through West Bank light to New York-New Jersey boundary line; and bounded on the north by a line drawn from the south limits of	S-23se S-24sw	SB	SB

TABLE I (*cont'd*)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
2 (*cont'd*)			Fort Wadsworth Military Reservation and extending southeasterly to Norton Point at the western tip of Coney Island peninsula near Sea Gate, thence extending the line along south shore of Coney Island to Light Inlet at southeasterly tip of Coney Island peninsula near Manhattan Beach; and bounded on east by north-south line beginning at described Light Inlet and extending southward to south tip of Rockaway jetty light, thence due south to New York-New Jersey boundary line.			
3		Lower New York Bay west portion	That portion of Bay within New York State bounded on east by north-south line drawn from south limits of Fort Wadsworth Military Reservation and passing through West Bank light to New York-New Jersey boundary line; and bounded on west by north-south line drawn from south tip of Crookes Point to Point Comfort at Keansburg, New Jersey.	S-23se S-23sw T-23nw T-23ne	SB	SB

p. 6

TABLE I (*cont'd*)

Item No.	*Waters Index Number*	*Name*	*Description*	*Map Ref. No.*	*Class*	*Standards*
→ 4		Lower New York Bay portion including Gravesend Bay	That portion of Bay south of The Narrows and bounded on north by line from tip of Fort Wadsworth to tip of Fort Hamilton; and bounded on south by line from south limits of Fort Wadsworth Military Reservation to Norton Point at western tip of Coney Island peninsula near Sea Gate, including Gravesend Bay.	S-23se S-24sw	I	I
5	LI 253	Coney Island Creek	Trib. of Gravesend Bay.	S-24sw	I	I
→ 6		Upper New York Bay including The Narrows, Atlantic Basin, Gowanus Bay	That portion of Bay within New York bounded on south by line from tip of Fort Wadsworth to tip of Fort Hamilton; and bounded on west by shore of Staten Island north of tip of Fort Wadsworth, thence by north-south line across mouth of Kill Van Kull from northernmost point of Staten Island to easternmost point at Constable Point, Bayonne, New Jersey, thence by New York-New Jersey boundary line from mouth of Hudson River; and bounded on north by true east-west line passing through southernmost tip of Manhattan Island at the Battery	S-23ne S-23se S-24nw	I	I

p. 7

TABLE I (*cont'd*)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
6 (*cont'd*)			and intersecting state boundary line, thence by line extending from same point at the Battery across mouth of Lower East River to western tip of pier 17 at Brooklyn; thence bounded on east by western shore of Brooklyn from pier 17 south to Fort Hamilton, excluding Erie Basin.			
6.1		Erie Basin	That portion of Upper New York Bay bounded on the north and east by the western shore of Brooklyn, on the south and west by the peninsula which separates the Basin from Gowanus Bay and Red Hook channel, including the outlet of the Basin; bounded on the northwest by a line from the northernmost point of the Basin peninsula to the point on the western shore of Brooklyn defined by the projection of Van Brunt Street.	S-23ne	SD	SD
7	L1 1 and tribs.	Gowanus Canal	Trib. of Gowanus Bay.	S-24nw	SD	SD

TABLE I (*cont'd*)

Item No.	*Waters Index Number*	*Name*	*Description*	*Map Ref. No.*	*Class*	*Standards*
			ARTHUR KILL, NEWARK BAY AND KILL VAN KULL			
12	SI (0.0 - 2.0)* portion	Arthur Kill	That portion within New York State from mouth (at an east-west line drawn from southernmost point of Staten Island at Ward Point to southernmost point of Perth Amboy, New Jersey, at Ferry Point) to Outerbridge Crossing.	S-22se S-23sw T-22ne T-23nw	I	I
13	SI (2.0 - 12.9) portion	Arthur Kill	That portion within New York State from Outerbridge Crossing to Newark Bay outlet.	S-22se S-23sw S-23nw	SD	SD
14	SI (12.9 - 14.6) portion	Newark Bay	Southern portion of Bay lying north of Staten Island within New York State between outlet to Arthur Kill and outlet to Kill Van Kull.	S-23nw	SD	SD

* Segment of waters measured in miles upstream from mouth of Arthur Kill.

TABLE I (*cont'd*)

Item No.	*Waters Index Number*	*Name*	*Description*	*Map Ref. No.*	*Class*	*Standards*
15	SI (14.6 -18.0) portion	Kill Van Kull	That portion within New York State from outlet of Newark Bay to mouth of Kill Van Kull (at north-south line drawn from northernmost point of Staten Island to easternmost point at Constable Point, Bayonne, New Jersey).	S-23nw S-23ne	SD	SD
		STATEN ISLAND TRIBUTARIES				
16	SI P 1039 SI P 1039a SI P 1039b SI P 1040	Grasmere Lake Ipes Pond Shore Acres Pond Cameron Lake	Isolated bodies of water.	S-23se	B	B
17	SI P 1040a, P 1040b, P 1040c, P 1040d	Tribs. of New Creek	Isolated ponds with New Creek watershed.	S-23se	B	B
18	SI 1 and tribs.	New Creek	Tidal estuary and fresh water tribs. Tidal portion. Fresh waters portion.	S-23se	 I C	 I C
19	SI 2	Great Kills Creek	Enters Great Kills Harbor at Great Kills Park.	S-23sw S-23se	I	I

REFERENCE NO. 20

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **PROJECT NOTES**

TO: Keegan Landfill file

DATE: 05/12/97

FROM: K. Campbell

SUBJECT: Sensitive Environments

REFERENCE

Our office received information regarding sensitive environments in the site vicinity from the NJ Natural Heritage Program (NHP). As the NHP data are sensitive in nature, the original NHP letter (5/1/97) is filed in the "Confidential" subsection of this TDD file and a general summary of the NHP information is provided below:

Sensitive Environment	Distance from Site (mi.)*	Water Body Type
(Air & Surface Water)		
• State-listed endangered species habitat	0	Coastal/Tidal
(Pied-Billed Grebe - *Podilymbus podiceps)*		
• Unique Biotic Community	0	Coastal/Tidal
(Coastal Heron Rookery - Kearny Marsh)		
(Air)		
• State-listed endangered species	2.5	N/A
(Northern Harrier - *Circus cyaneus*)		
• State-listed endangered species	2.5	N/A
(Sedge Wren - *Cistothorus platensis*)		
• Federally-listed endangered species	3.5	N/A
(Peregrine Falcon - *Falco peregrinus*)		
• State-listed threatened species	1.5	N/A
(Savannah Sparrow - *Passerculus sandwichensis*)		
• State-listed endangered species	1.5	N/A
(Minute Duckweed - *Lemna perpusilla*)		
• State-listed endangered species	3.5	N/A
(Downy Phlox - *Phlox pilosa*)		

* Estimated Values.

Ref. 20

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **PROJECT NOTES**

TO: Keegan Landfill file

DATE: 05/12/97

FROM: K. Campbell

SUBJECT: Sensitive Environments

REFERENCE

Sensitive Environment	Distance from Site (mi.)*	Water Body Type
(Air - Continued)		
• State-listed endangered species habitat	3.5	N/A
(Smooth Rattlesnake Root - *Prenanthes racemosa*)		
• State-listed endangered species habitat	3.5	N/A
(Salt Marsh Bulrush - *Scirpus maritimus*)		
(Surface Water)		
• Federally-listed endangered species	9	Coastal/Tidal
(Peregrine Falcon - *Falco peregrinus*)		
• State-listed endangered species	13	Coastal/Tidal
(Least Tern - *Sterna antillarum*)		
• State-listed endangered species	1.5	Coastal/Tidal
(Minute Duckweed - *Lemna perpusilla*)		
• Unique Biotic Community	13	Coastal/Tidal
(Coastal Heron Rookery - Global Terminal)		

* Estimated Values.

Ref. 22

REFERENCE NO. 21

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM **PROJECT NOTES**

TO: Interstate Metals file

DATE: 12/15/98

FROM: K. Campbell (KC)

SUBJECT: Population within Four Miles of Site

REFERENCE: The following data summarize the census information provided in the attached letter from Frost Associates (dated 11/27/98):

Distance Ring (mi)	Population *
0 - ¼	1,468
> ¼ - ½	4,637
> ½ - 1	23,660
> 1 - 2	83,100
> 2 - 3	132,340
> 3 - 4	178,380

Total population residing within four miles of site - 423,585

* - Population data values for distance rings greater than ½ mile from site are rounded to the nearest ten.

Ref. 21

FROST ASSOCIATES

88 Founders Village, Clinton, CT 06413
(860) 669-5859 FAX (860) 669-5869

November 27, 1998

To: Roy F. Weston Inc - Region II START
1090 King Georges Post Road, Suite 201
Edison, NJ

Attn: Diane Minsavage

Fr: Frost Associates
Founders Village
Clinton, Conn 06413

Tel: (203) 669-5859
Fax: (860) 669-5859

Sub: Kearny, NJ Site

CERCLIS:

Job: 4197

Site Longitude:	74-08-35	74.143059
Site Latitude :	40-45-07	40.751949

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. A CENTRACTS report may have up to six radii of any length and 1500 block groups.

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, 88 Founders Village, Clinton Conn 06413. 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 included 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 products obtained by multiplying each X-coordinate by the difference between the adjacent Y-coordinates. For a polygon with coordinates at adjacent angles A, B, C, D, and

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

Kearny, NJ Site

========== Site Data ==========

Population:	423591.00
Households:	164199.64
Drilled Wells:	93.00
Dug Wells:	20.68
Other Water Sources:	126.15

========== Partial (RING) data ==========

---- Within Ring: 4 Mile(s) and 3 Mile(s) ----

Population:	178381.69 ←
Households:	69592.45
Drilled Wells:	22.60
Dug Wells:	12.68
Other Water Sources:	51.34

** Population On Private Wells: 90.43

---- Within Ring: 3 Mile(s) and 2 Mile(s) ----

Population:	132342.47 ←
Households:	52684.14
Drilled Wells:	43.47
Dug Wells:	0.00
Other Water Sources:	42.32

** Population On Private Wells: 109.20

---- Within Ring: 2 Mile(s) and 1 Mile(s) ----

Population:	83097.63 ←
Households:	30690.78
Drilled Wells:	26.93
Dug Wells:	8.00
Other Water Sources:	26.49

** Population On Private Wells: 94.58

---- Within Ring: 1 Mile(s) and .5 Mile(s) ----

Population:	23664.18 ←
Households:	8845.85
Drilled Wells:	0.00
Dug Wells:	0.00
Other Water Sources:	6.00

** Population On Private Wells: 0.00

---- Within Ring: .5 Mile(s) and .25 Mile(s) ----

Population:	4637.25 ←
Households:	1806.40
Drilled Wells:	0.00
Dug Wells:	0.00
Other Water Sources:	0.00

** Population On Private Wells: 0.00

---- Within Ring: .25 Mile(s) and 0 Mile(s) ----

Population:	1467.78 ←
Households:	580.02
Drilled Wells:	0.00
Dug Wells:	0.00
Other Water Sources:	0.00

** Population On Private Wells: 0.00

** Total Population On Private Wells: 294.20

REFERENCE NO. 22

SEDIMENTOLOGY OF NEWARK BAY, NEW JERSEY:

AN URBAN ESTUARINE BAY

BY

Dennis John Suszkowski

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Marine Studies.

June, 1978 p.1

Ref. 22

tugs. In the Kill Van Kull, Newark Bay, and the Hackensack and Passaic Rivers, the U.S. Army Corps of Engineers maintains approximately 35 kilometers of navigation channels

Since the Newark Bay region is extremely populated and heavily industrialized, it has only been natural that the waters of this region be used for industrial and municip waste disposal. Leighton (1902) stated that the natural resources of the Passaic River were severely damaged due to water pollution 75 years ago. Suszkowski (1973) showed that dissolved oxygen levels in all sections of New York Harbor declined dramatically at the turn of the century due to the increased organic loadings of a growing populous. Mueller et al.(1976) indicate that at present, Newark Bay and the Hackensack and Passaic Rivers receive discharges of domestic and industrial wastewater amounting to 6.6 m^3/sec. This is approximately 13% of the total fresh water input into Newark Bay.

REFERENCE NO. 23

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM	PROJECT NOTES

TO: Interstate Metals file

DATE: 09/09/99

FROM: K. Campbell

SUBJECT: Nearby Population

REFERENCE:

On 22 April 1999, Region II START conducted an off-site reconnaissance of the site. Personnel observed approximately 5 residences within 200 feet of the property (Ref. No. 6 of this report). The average number of people per household in Hudson County is 2.62. Therefore, an estimated 13 people reside within 200 feet of the site property (5 residences x 2.62 people per household = 13.1 people).

RL 23

Att. A, p.1

NJSDC 1990 Census Publication

Housing Units and Household Population

New Jersey, Counties and Municipalities

1990

RECEIVED

JUL 20 REC'D

NUS CORPORATION
REGION II
SENT TO_____

April 1991

$5.00

Table 2. Housing Units, Households, and Persons in Households and Group Quarters: 1990 (Cont.)
New Jersey Municipalities by Counties

The population counts set forth herein are subject to possible correction for undercount or overcount. The United States Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991.

HUDSON County Municipalities	(1) Total Housing Units	(2) Vacant Housing Units	(3) Total Persons	(4) Persons in Group Quarters	(5) Total Households (1)-(2)	(6) Persons in Households (3)-(4)	(7) Persons per Household (6)/(5)
HUDSON COUNTY	229,682	20,943	553,099	6,939	208,739	546,160	2.62
Bayonne city	26,468	1,159	61,444	253	25,309	61,191	2.42
East Newark borough	755	36	2,157	0	719	2,157	3.00
Guttenberg town	4,504	986	8,268	124	3,518	8,144	2.31
Harrison town	5,120	262	13,425	271	4,858	13,154	2.71
Hoboken city	17,421	2,385	33,397	703	15,036	32,694	2.17
Jersey City city	90,723	8,342	228,537	4,043	82,381	224,494	2.73
Kearny town	13,435	965	34,874	374	12,470	34,500	2.77
North Bergen township	21,274	2,304	48,414	141	18,970	48,273	2.54
Secaucus town	6,013	621	14,061	761	5,392	13,300	2.47
Union City city	22,592	1,980	58,012	243	20,612	57,769	2.80
Weehawken township	5,583	528	12,385	24	5,055	12,361	2.45
West New York town	15,794	1,375	38,125	2	14,419	38,123	2.64

Source: 1990 Census of Population and Housing.

Att. A, p. 2