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REPORT

REMEDIAL INVESTIGATION
PHASE I AND PHASE II
CURCIO SCRAP METAL, INC., SITE
SADDLE BROOK, NEW JERSEY

Consolidated Edison Company of New York, Inc.

Curcio Scrap Metal, Inc.

October 1990

BLASLAND & BOUCK ENGINEERS, P.C.
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ENGINEERS & GEOSCIENTISTS

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EXECUTIVE SUMMARY

In April 1988, the United States Environmental Protection Agency (USEPA), Consolidated Edison Company of New York, Inc. (Con Edison), Curcio Scrap Metal, Inc. (Curcio), and Seco Corporation (Seco) entered into an Administrative Consent Order (ACO) relating to the Curcio Scrap Metal, Inc. site (CSMI Site) in Saddle Brook, New Jersey. The ACO identifies Con Edison, Curcio, and Seco as potentially responsible parties (PRPs) for the CSMI Site under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). As part of the ACO, the PRPs have agreed to perform a Remedial Investigation (RI) to determine the nature and extent of any threat to human health and the environmental posed by the presence of hazardous substances and a Feasibility Study (FS) to evaluate the remedial alternatives that would prevent, mitigate, or abate such threats.

The Remedial Investigation was completed in August 1989. Based on the results of the RI, the USEPA requested that the CSMI Site's East Lot soil be addressed in a Focused Feasibility Study as a separate operable unit. This allows for an expeditious evaluation of remedial alternatives for the East Lot. The USEPA asked the PRPs to proceed with a second phase of the Remedial Investigation, which included an expanded evaluation of ground-water quality beneath the CSMI Site's East Lot, and additional data acquisition on the adjacent Michellotti property and the ponding/culvert area near the New Jersey Transit Railroad. The Focused Feasibility Study was completed in June 1990. The Phase II RI was completed in July 1990.

This report describes the activities and results of the Phase I and Phase II Remedial Investigations undertaken at the CSMI Site. The Scope of Work of the Phase I RI included the advancement of 47 soil borings, with

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the associated soil sampling, and the on-site installation, of four monitoring wells, with the associated soil and ground-water sampling and analyses. One sediment sample was obtained from the CSMI Site's storm drain. The Phase II RI included the installation of five temporary well points (TWPs) and two cluster monitoring wells in the East Lot, with the associated soil and ground-water sampling and analyses; the off-site advancement of several soil borings on an adjoining industrial property; and sediment sampling in a ponding-culvert area located northeast of the CSMI Site.

Geology

The CSMI Site is located in a relatively flat area, with a shallow grade toward the east. The topography of the site's East Lot varies by only a few feet. It is important to emphasize that the topography of the East Lot is in a constant state of flux because of the scrap metal recycling operations conducted at this location. The upper 2 feet of soil is constantly moved through the East Lot.

The overburden geology of the CSMI Site consists of 4 to 6 feet of reworked soil, primarily consisting of sand with varying amounts of silt and gravel combined with fill materials. The fill materials are encountered, for the most part, in the East Lot, where the scrap metal recycling activities take place. The fill materials consist of glass, wood, brick chips, concrete, and metal fragments. Concrete foundations of the farm structures that were once present at the site were encountered at shallow depth. Undisturbed soils were encountered 4 to 6 feet below grade in the West and South Lots and at several locations in the East Lot. The soil consists of reddish-brown or grey striated sand and silt with some clay. The underlying bedrock was encountered at a depth of 14.5 to 16 feet. The bedrock consists of weathered and unweathered red Brunswick sandstone.

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Hydrogeology

The depth to ground water across the CSMI Site ranges from 2.07 to 6.09 feet. The average depth to ground water in the East Lot is approximately 4.5 feet. The apparent direction of ground-water flow is toward the east. An active well used for industrial water supply is present on an adjoining industrial property 80 feet from the edge of the East Lot. This well may have some influence on ground-water flow direction at the site.

The maximum ground-water velocity was determined by using the maximum hydraulic conductivity value calculated from in-situ hydraulic conductivity tests, the maximum hydraulic gradient observed during 1989 to 1990, and an anticipated effective porosity value of 0.2. Based on these parameters, the maximum linear velocity of ground water was determined to be 0.113 feet/day.

Soil

Based on the analytical soil data generated during the first phase of the RI, the area of concern is the East Lot of the CSMI Site. The analytical results of soil samples obtained from the East Lot indicate that organic and inorganic constituents are present at concentrations above background levels.

Scrap metal recycling operations in the East Lot result in the continual mixing of the upper 2 feet of soil material. Therefore, analytical data only reflects conditions at the time at which the samples were obtained. Soil within the center of the East Lot is more susceptible to being moved than soils along the perimeter of the East Lot. During the 1990 installation of a new solid steel fence to replace the original chain link fence, soil that had migrated past the chain link fence was moved back to the East Lot. Subsequently, soil along the perimeter of the fence was disturbed and moved.

During the first phase of the RI, soil samples were initially analyzed for PCBs and VOCs in an on-site mobile field laboratory. Based on the results from the field laboratory, specific soil samples were selected for additional analyses by a contract laboratory.

The concentrations of total VOCs detected by the contract laboratory in East Lot soil samples ranged from 0.003 ppm to 104.6 ppm. PCBs were detected at locations throughout the East Lot, but the highest concentrations were observed in the southern section (Figure 10 and 11).

PCB Aroclors 1242, 1248, 1254, and 1260 were detected at locations throughout the East Lot. Aroclors 1242 and 1254 were prevalent throughout and were found at higher concentrations that other Aroclors detected at the site. Aroclor 1242 was observed in 44 of 58 soil samples, Aroclor 1254 was detected in 37 soil samples, Aroclor 1248 was detected in seven soil samples, and Aroclor 1248 was detected in only one soil sample obtained during the installation of monitoring well MW-2, which is not in the East Lot.

Metal concentrations elevated over background levels were detected at varying depths and locations throughout the East Lot (Figures 12 through 22). The metals with elevated concentrations include arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc.

Total petroleum hydrocarbon (TPH) analysis was performed on the soil samples obtained just above the saturated zone at each sample location. Most soil samples from the South and West Lots had TPH concentrations of less than 25 ppm. However, at two boring locations adjacent to an inactive underground storage tanks, TPH concentrations of 340 and 440 ppm were detected. The highest TPH concentrations were observed in samples obtained from borings in the East Lot, specifically along the east side of the lot and near the low-lying area adjacent to the truck scale.

The majority of the semivolatile compounds detected were polynuclear aromatic hydrocarbons (PAHs). Concentrations of semivolatile compounds in the East Lot soil ranged from 0.009 ppm to 96.6 ppm. There did not appear to be an observable relationship between the concentration of semivolatile compounds and TPHs at the site.

Phase II RI Vertical Profile

As part of the second phase of the Remedial Investigation, USEPA requested that an evaluation of the vertical distribution of chemical constituents be performed for the East Lot soils. Therefore, during the installation of monitoring well MW-5L, soil samples were obtained to the top of rock. The number of detected compounds and concentration of VOCs and semivolatile compounds decreased significantly with depth. The highest concentrations of organic compounds occurred in the upper 6 feet. Below 6 feet, the concentrations of organic compounds decreases significantly.

PCB Aroclors 1242 and 1260 were detected in the three samples from the upper 6 feet of the soil profile at concentrations of 60 ppm, 36 ppm, and 19 ppm, decreasing with depth. PCBs were detected at the sample interval of 12 to 14 feet at a total concentration of 17.4 ppm. The PCB concentrations at the 12 to 14 feet interval appear to be anomalous and their origin is unknown.

The concentration of metal decreases gradually with depth in the first 6-foot interval and then significantly decreases below 6 feet.

Sediment

One sediment sample was obtained from the CSMI Site storm drain during the first phase of the RI. VOCs were not detected in the sample, but several PAHs were detected. PCB Aroclors 1242 and 1254 were detected at concentrations of 57 ppm and 42 ppm, respectively.

Toxicity Characteristic Leaching Procedure (TCLP)

Two composite soil samples obtained from the TWP locations were submitted for TCLP analyses in order to better evaluate landfilling as an alternative for soil remediation. Only the lead concentration exceeded the maximum allowable regulatory level as published in the Federal Register, March 29, 1990 (55FR 11798).

Ground Water

Ground-water samples were obtained from the CSMI Site on three dates: August 24, 1989; November 14, 1989; and July 7, 1990. Ground water in the eastern portion of the East Lot appears to be the most impacted by site activities and constituents present in soil. Within the East Lot, VOCs and metals were elevated with respect to hydraulically upgradient sampling locations. PCBs were detected in unfiltered samples from monitoring wells MW-3, MW-5U, MW-5L, and TWP-4 and in the filtered sample from monitoring well MW-3 only. Filtered and unfiltered samples were obtained to determine if PCBs were dissolved in ground water or adhered to suspended soil particles in the sample. Concentrations of PCBs decrease in the filtered samples, indicating that PCBs may be adhered to soil particles suspended in the samples and not dissolved in ground water.

The number and total concentrations of VOCs detected in the ground-water samples obtained during the first round of sampling were lower than were observed during the other sampling events. The total concentrations of VOCs were highest in the samples from monitoring well MW-3. The total concentrations in samples obtained during the August 1989 and November 1989 sampling were 50 ppb and 75 ppb, respectively.

Additional VOCs not detected in August and November 1989 in ground-water samples in the East Lot were detected during the July 1990 sampling.

These VOCs include vinyl chloride, trichloroethane, chlorobenzene, ethylbenzene, and total xylenes. The highest total concentrations of VOCs were detected in the samples from TWP-1 (112 ppb) and TWP-4 (276 ppb). Several inorganics were detected at higher concentrations in upgradient monitoring well MW-1 than were detected in the samples from monitoring wells in the East Lot during Phase I RI sampling. The majority of inorganics in the sample from upgradient monitoring well MW-2 were at the lowest concentrations detected. Several inorganics were detected at elevated concentration in the samples from monitoring wells MW-3 and MW-4.

The ground-water samples obtained from monitoring well MW-5U (screened in the upper portion of the water-bearing zone) and monitoring well MW-5L (screened in the lower portion of the water-bearing zone) did indicate differences in ground-water quality. VOCs were detected in the sample from monitoring well MW-5U that were not detected in MW-5L. The total concentrations of VOCs in the samples from MW-5U and MW-5L were 98 ppb and 69 ppb, respectively. A total of 52 ppb of semivolatile compounds were detected in the sample from MW-5U only. Concentrations of inorganics were generally lower in the sample from monitoring well MW-5L in comparison to concentrations detected in MW-5U.

Off-Site Investigation

The Phase II RI field investigation involved soil and sediment sampling at two off-site locations: the Michellotti property and the ponding/culvert area to the northeast of the CSMI Site. Subsurface soil on the Michellotti property has not been impacted by migration of constituents in the East Lot. Low concentrations of PCBs may have migrated via surface run-off to a limited area on the Michellotti property.

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Results from the sediment sample obtained in the outfall pipe in the pond area did indicate the presence of PCBs, VOCs, or semivolatiles. A total of 25 semivolatiles were detected at a total concentration of 30.9 ppm. Three VOCs were detected at a total concentration of 0.043 ppm. Two Aroclors, 1242 and 1260, were detected at concentrations of 12.0 ppm and 2.6 ppm, respectively. The detected concentration of individual inorganics in the sediment sample was lower than the average range in concentration for individual inorganics detected in the East Lot soil. It does not appear that the sediment discharging into the ponding area is significantly impacted by the CSMI Site.

SECTION 1 - INTRODUCTION

1.1 Objectives

The primary objectives of the CSMI Site Phase I and Phase II Remedial Investigations (RIs) were to determine the nature and extent of any chemical constituents that may affect human health and the environment. The field investigations conducted were designed to gather the necessary data to characterize the chemical constituents in the site's soil and ground water and to select an appropriate remedial alternative for the site.

The specific objectives of the Phase I RI were to:

1. Perform a subsurface soil investigation in the East Lot, West Lot, and South Lot of the CSMI Site to determine areas of elevated concentrations of chemical constituents;
2. Characterize the ground-water quality at the CSMI Site; and
3. Determine whether any chemicals present in the CSMI Site are migrating off site.

The Phase II RI was intended to supplement existing information and focused primarily on the CSMI Site's East Lot. The specific objectives of the Phase II RI were to:

1. Expand the ground-water investigation in the East Lot to evaluate and to identify the potential for off-site migration of chemical consitituents in ground water and to identify whether separate ground-water flow zones exist in the upper and lower overburden aquifer beneath the site;

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2. Expand the Phase I subsurface soil investigation to evaluate the vertical distribution and extent of constituents in the soil of the East Lot;
3. Determine whether PCBs and petroleum hydrocarbons have migrated from the East Lot to the adjacent off-site areas; and
4. Complete off-site sediment sampling for the purpose of determining whether chemical constituents have migrated from the site's storm drain into an off-site culvert.

1.2 Site Background

A description of the CSMI Site, including its geographic location, topography, and land use and that of its surrounding area, is presented below. Past activities and previous investigations conducted at the CSMI Site are also discussed.

1.2.1 Site Description

The CSMI Site is located at 416 Lanza Avenue in Saddle Brook, New Jersey (Figure 1). The area of Saddle Brook in which the CSMI Site is situated is bounded by Route 46 to the north, the New Jersey Transit Railroad tracks to the east, and Midland Avenue to the west. The CSMI Site itself is bordered by Lanza Avenue on the north, Michellotti & Sons Concrete Mixing Company ("Michellotti property") on the east, Walther Avenue on the south, and residential and commercial property on the west (Figure 2).

The CSMI Site operates as an active scrap metal recycling facility and is located on property zoned for light industrial use. Properties in the general vicinity of the CSMI Site are used for residential, commercial, and light industrial activities. A metal and tooling commercial establishment is located to the south of the site across Walther Avenue. The Michellotti property also borders the area across Lanza Avenue, north of the CSMI Site. Approximately 30,000 people reside within a three-mile radius of the site. The nearest residential properties and commercial establishments are located adjacent to the site on the east side of Midland Avenue. The area west of Midland Avenue is primarily residential.

The CSMI Site is subdivided into three lots: the East, West, and South Lots (Figure 3). Curcio Scrap Metal, Inc., and Cirello Iron and Steel Company are the two active scrap metal recycling businesses operating at the site. These businesses operate in the two, one-story masonry buildings located on the West and South Lots. These buildings are the main building, which was erected on the West Lot in 1977, and a warehouse building, which was constructed on the South Lot in 1985. With the exception of the two narrow passageways located between the western and eastern walls of the warehouse building, all areas of the West and South Lots that are not occupied by the buildings are paved.

The East Lot is mostly unpaved and is used for scrap metal salvaging operations. The active section of the East Lot is relatively small, measuring approximately 90 by 110 feet. A truck scale is located in the northern section of the East Lot on a narrow strip bordering Lanza Avenue. This narrow strip (less than 15 feet wide) is the only paved area in the East Lot, and it contains a small-scale control shed. A metal cutting area is located to the east of the scale house, and a metal compacting area is located in the southern section of the East Lot on a small concrete slab. The remainder of the East

Lot is occupied by piles of scrap metal in various stages of salvaging. The locations of the piles are changed frequently as new scrap metal arrives daily. A large crane with a magnet operates in the center of the East Lot, moving scrap metal onto various piles and into containers for recycling. Two roll-off containers are located in the southeast section of the East Lot; these containers are removed and replaced as they are filled with scrap metal. Bulldozers and other heavy equipment are also used to move the scrap metal piles around the site. The topography of the East Lot varies as the scrap metal piles are pushed along the ground and surficial soil is moved along with the metal.

Two storm drains (catch basins) are located in the East Lot. One storm drain is located in the northeast corner of the site and is believed to be connected by an underground pipe running across the East Lot to the second storm drain, which is located in the southern section of the East Lot near the metal crushing area. The first storm drain is believed to be connected by an underground pipe crossing the Michellotti property to an intermittent ponding area located on the New Jersey Transit right-of-way. The drains appear to collect stormwater runoff from the East and West Lots and from the eastern end of Lanza Avenue.

1.2.2 Site History

This section presents a brief history of activities previously conducted at the CSMI Site and is based on the site history discussed in the RI/FS Work Plan (1989). The RI/FS Work Plan contains a more detailed description of the CSMI Site history. In general, the discussion herein focuses on events pertaining to the CSMI Site's East Lot.

Salvaging operations began at the CSMI Site in the early 1950s. The West and East Lots were purchased in 1952, and the South Lot was purchased in 1981. Prior to 1950, the site was used for dairy farming. Aerial photographs, dated 1969, confirm the presence of several original building structures, including a house, several barns, and other small structures used for farming.

Salvaging operations at the site began in the early 1950s. Initially, operations at the site were associated with paper and rag recycling. These materials were stored on concrete slab floors in the barns and other small buildings. Later, aluminum and copper were stored and recycled at the site. These two metals were cut and compacted, but not smelted at the site.

In 1977, the original structures were demolished, the present main building was erected, and sections of the West Lot were paved. Some of the original concrete floors are buried at the site. In 1978, the truck scale and scale control shed were constructed on the northern edge of the East Lot. A concrete apron was installed around the truck scale, and, in 1980, the stretch of Lanza Avenue from Midland Avenue to the East Lot area was paved. The South Lot, purchased in 1981, was used for employee parking until 1985, at which time the masonry warehouse was erected and most of the lot's remaining area was paved.

The structures at the CSMI Site have remained essentially unchanged since 1985; however, the original scale control shed was replaced with a new structure in 1989.

1.2.3 Previous Site Investigations

This section presents a brief summary of the previous investigations conducted at the CSMI Site, including:

- Initial Site Inspection and Sampling by the New Jersey Department of Environmental Protection (NJDEP) in October 1982;
- Sampling of Ground-Water Wells Near the CSMI Site by NJDEP in December 1982;
- Investigation of Dumping Polychlorinated Biphenyl (PCB) Contaminated Soil in the South Lot by NJDEP in June 1983;
- Soil and Sediment Sampling by NJDEP in September 1984; and
- Hydraulic Oil Spill Investigation by NJDEP in May 1985.

The first field investigation of the CSMI Site was conducted by representatives of the Division of Water Resources and Waste Management of NJDEP on October 27, 1982. This inspection visit was apparently prompted by a citizen's complaint. During the NJDEP site visit, several transformers labeled "drained by Con Edison" were observed cut open at the site. In addition, several puddles of oil were observed. Three samples were obtained from the oil puddles, and two samples from the water and oil located in the ditches near the site's storm drain were taken. PCBs were detected in a sample from the puddles of oil at concentrations of 105 ppm Aroclor 1260 and 47 ppm Aroclor 1242. The samples taken from the ditches contained 25.12 ppb Aroclor 1260 in the water layer and 452.4 ppm Aroclor 1260 in the oil layer.

On December 28, 1982, NJDEP sampled two wells located near the CSMI Site, the Mullick well and Michellotti & Son's "active" well. The sample from the Mullick well indicated the presence of 2 ppb total volatile organic compounds (VOCs); 1 ppm total petroleum hydrocarbons

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(TPHs); 0.005 ppm lead; and 0.016 ppm zinc. PCBs were not detected in the Mullick well sample. VOCs were detected in the "active" Michellotti well at the following concentrations: 3 ppb 1,1-dichloroethane; 20 ppb 1,2-dichloroethene; 4 ppb 1,2-dichloroethane; 5 ppb 1,1,1-trichloroethane; 24 ppb trichloroethylene; and 18 ppb tetrachloroethylene. The samples also indicated the presence of 1 ppm TPH; 0.005 ppm lead; 0.110 ppm zinc; and 28.2 ppm total organic compounds (TOCs). No PCBs were detected in the "active" Michellotti well sample. A second water sample, described as "ground-water seepage to well pit on P. Michellotti property," was analyzed and determined to contain 0.32 ppb Aroclor 1248 and 0.56 ppb Aroclor 1260. It is unclear exactly where this sample was obtained and what was meant by "well pit" and "ground-water seepage."

The NJDEP reinspected the CSMI Site on February 24, 1983. During the reinspection, it was discovered that the soil from the East Lot, mainly the oily soil presumed to have been affected by the transformer oil spill, had been removed and possibly relocated to the site's South Lot.

On September 13, 1984, NJDEP collected five soil and sediment samples. The samples indicated the presence of tetrachloroethane and heavy metals, such as lead, copper, and nickel, in the soil.

The NJDEP inspected the CSMI Site again on June 5 and June 18, 1985. The NJDEP determined from these site visits that there had been a spill of approximately 200 to 300 gallons of hydraulic fluid at the site on May 15, 1985. The fluid is believed to have escaped from a broken hose on a metal compactor and to have migrated into the storm drain. Soil samples were obtained from the oily area, and

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the results indicated the presence of 80 ppm Aroclor 1248 in one sample, and 32 ppm Aroclor 1248 in another.

1.2.4 Focused Feasibility Study

Based on an evaluation of the information from the Phase I RI field investigation at the CSMI Site that was conducted by Blasland & Bouck in July and August 1989, the United States Environmental Protection Agency (USEPA) requested that the CSMI Site's East Lot soil be treated as a separate operable unit and that a Focused Feasibility Study (FFS) be performed that would enable an expeditious evaluation of remedial alternatives for the East Lot's soil.

A Supplemental Work Plan prepared by Blasland & Bouck, entitled "Supplemental Work Plan, Expanded Remedial Investigation and Focused Feasibility Study, April 1990, Revised August 1990" (Supplemental Work Plan), outlining a Phase II RI expanded field investigation and a FFS for the CSMI Site's East Lot soil, was submitted to the USEPA in draft in April 1990, and a revised final plan was submitted in August 1990. A Focused Remedial Investigation and Feasibility Study addressing the First Operable Unit - East Lot Soil, was submitted to the USEPA in June 1990.

The objectives of the FFS were to:

1. Evaluate the East Lot soil data obtained during the Phase I RI;
2. Evaluate the selected remedial action alternatives identified in the Supplemental Work Plan;
3. Identify applicable or relevant and appropriate cleanup standards for the East Lot soil; and

4. Provide recommendations based on the evaluation of the remedial alternatives considered appropriate for the East Lot soil.

SECTION 2 - REMEDIAL INVESTIGATION

The CSMI Site RI was carried out in two phases. The Phase I RI was performed during July and August 1989, and the Phase II RI was performed during June and July 1990. The majority of the field work was performed during the Phase I RI. The Phase II RI was designed to supplement data needs in the Phase I RI, at the request of USEPA, and to complete the field investigation program. The following sections discuss both the Phase I RI and the Phase II RI field investigation programs.

2.1 Phase I Field Investigation - 1989

The Phase I RI field investigation was carried out by Blasland & Bouck during July and August 1989, in accordance with the USEPA-approved Draft RI/FS Work Plan prepared by First Environment of New Jersey, entitled "RI/FS, Curcio Scrap Metal, Inc. Site, Saddle Brook, New Jersey, March 1989" [RI/FS Work Plan (1989)]. The Phase I RI included work performed in the East, West, and South Lots of the CSMI Site.

The scope of work performed during the Phase I RI field investigation included the advancement of soil borings with associated soil sampling and analyses and the installation of four ground-water monitoring wells with associated ground-water sampling and analyses. Hydraulic conductivity (K) testing was conducted at the four monitoring wells. In addition, one sediment sample was obtained from the on-site storm drain. No off-site sampling was included in the Phase I RI field investigation activities.

Following acquisition, soil samples were analyzed in an on-site mobile field laboratory, which was used to screen soil samples for PCBs and VOCs to assist in determining which soil samples would be selected for further analyses at the contract laboratory. Selected soil and ground-water samples were then submitted to the contract laboratory for the additional analyses. In addition to the chemical analyses, geotechnical analyses were performed on five selected soil sample intervals.

Horizontal and vertical monuments were established at the CSMI Site. The monuments are referenced to elevations in feet above mean sea level based on the New Jersey Geodetic Control Monument #3841. The monitoring wells were surveyed to the established monuments to obtain ground elevations and the elevations of the top of wells. The ground elevations were established to provide a reference for the elevation of each sample interval and ground-water level.

During the Phase I RI, on August 8, 1989, a cylinder was dismantled with a welding torch in the East Lot metal cutting area. The fluid inside the cylinder was released and ignited. The burning cylinder was then lifted by the crane operating in the East Lot and placed into one of the two roll-off containers in the southern portion of the East Lot. However, the cylinder continued to burn. The crane lifted the cylinder from the container, and the remaining fluid was shaken from the cylinder onto the soil adjacent to the roll-off containers. The fire in the cylinder was then allowed to burn out, and the cylinder was again cut with a welding torch and placed in the roll-off containers.

The released fluid was sampled by Blasland & Bouck at the request of the on-site USEPA representative. A sample of a greenish-yellow, semiviscous fluid that ponded on the surface soil near the cylinder was obtained, and two soil samples were obtained the following day from the stained soil area.

The fluid and soil samples were submitted to the contract laboratory for PCB analysis. The fluid sample contained 40 ppm Aroclor 1248 and 54 ppm

Aroclor 1254. The soil samples contained 660 ppm Aroclor 1242 at a depth of 0 to 2 feet, and 170 ppm Aroclor 1242 and 75 ppm Aroclor 1254 from a depth of 2 to 3.5 feet.

The soil in the vicinity of the fluid release was containerized and removed from the CSMI Site by Direct Environmental, on August 14, 1989.

2.1.1 Subsurface Investigation

The subsurface investigation included the advancement of a total of 47 subsurface soil borings and the installation of four monitoring wells. Thirty-five of the 47 subsurface soil borings and two of the ground-water monitoring wells were located in the East Lot. In the West Lot, seven subsurface soil borings and one upgradient monitoring well were advanced and installed. In the South Lot, five soil borings and one upgradient monitoring well were advanced or installed. The location of each subsurface soil boring and monitoring well installed during the Phase I RI field investigation is presented on Figure 4. Subsurface logs, complete with geologic descriptions and drilling notes, are included in Appendix A.

2.1.1.1 Soil Boring Installation

Subsurface soil borings were advanced using 4¼-inch inside diameter hollow stem augers (HSA). Continuous soil sampling was conducted in the overburden using a 2-foot long by 2-inch or 3-inch outside diameter split-spoon sampler.

During the drilling, the split-spoons and boreholes were monitored for organic vapors with a HNU photoionization detector. Representative soil samples were collected from each split-spoon at 2-foot intervals in accordance with the procedures set forth in the RI/FS Work Plan (1989). Each soil sample was retained in three separate containers: two 40-ml glass vials with a Teflon septum top and one 500-ml wide-mouth glass jar. If the sample interval was selected for laboratory analyses, the two 40-ml glass vials were submitted for the analysis of volatile organic compounds (VOCs), and the 500-ml wide-mouth glass jar was submitted for analyses of the remaining analytical parameters. In addition, approximately 10 percent of the soil samples were obtained by the USEPA representative as representative sample splits.

In accordance with the RI/FS Work Plan (1989), the soil borings were terminated at the water table. The last soil sample was collected from the interval directly above the saturated zone. Saturated soil (i.e., the water table) was generally reached at a depth of 5 to 8 feet below grade.

A total of 35 soil borings, and two additional soil borings that were completed as monitoring wells MW-3 and MW-4, were installed in the East Lot. The majority of the soil borings in the East Lot were concentrated near the metal cutting area and the area in which the hydraulic fluid spill occurred in 1985 (Figure 3).

In the West Lot, seven soil borings, and one additional soil boring that was completed as monitoring well MW-1, were installed. The borings in the West Lot were located within Lanza Avenue and the concrete driveway leading to the CSMI Main Building. The soil borings were advanced through the blacktop and concrete.

In the South Lot, five soil borings, and one additional soil boring that was completed as monitoring well MW-2, were

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installed. Three of the five soil borings were advanced through the blacktop in the employee parking lot. One boring and monitoring well MW-2 were located in the hedge border adjacent to the southern side of the warehouse building. The last soil boring was advanced in the alley between the main building and the warehouse building.

2.1.1.2 Monitoring Well Installation

A total of four monitoring wells were installed during the Phase I RI in accordance with the protocols set forth in the RI/FS Work Plan (1989). The four monitoring wells, MW-1, MW-2, MW-3, and MW-4, were constructed as screened wells in the overburden. The borings were advanced to bedrock. Bedrock was reached at a depth of 15 to 17 feet. A summary of the well construction specifications is presented in Table 1. Detailed subsurface logs, including geologic descriptions and well design details, are included in Appendix A.

Monitoring well MW-1 was installed on Lanza Avenue. The boring was advanced to a depth of 17 feet. A string of flush-threaded, 2-inch diameter, schedule 10, 305 stainless steel screen and riser was set to a depth of 17 feet. A section of .010-inch slot screen was set from 6 to 17 feet. A stainless steel cap was placed on the bottom of the screen section. Grade Ø silica sand was used as a screen pack material and placed from 4 to 17 feet. A hydrated bentonite seal was installed over the sand pack from 2 to 4 feet. A pressure-sealed locking well cap was placed on top of the stainless steel well. The well was completed with a cement seal and installation of a flush-mount curb box.

Monitoring well MW-2 was installed in the South Lot along side of the warehouse building. The boring was advanced to a depth of 16.5 feet. A string of flush-threaded, 2-inch diameter, schedule 10, 305 stainless steel screen and riser was set to a depth of 16.3 feet. A section of .010-inch slot screen was set from 5.3 to 16.3 feet. A stainless steel cap was placed on the bottom of the screen section. Grade Ø silica sand was used as a screen pack material and placed from 3.5 to 16.5 feet. A hydrated bentonite seal was installed over the sand pack from 2 to 3.5 feet. A pressure-sealed locking well cap was placed on top of the stainless steel well. The well was completed with a 4-inch steel stick-up protective outer casing.

Monitoring well MW-3 was installed in the East Lot. Monitoring well MW-3 was placed adjacent to the on-site storm drain and in a low-lying area relative to the rest of the site. The boring was advanced to a depth of 16 feet. A string of flush-threaded, 2-inch diameter, schedule 10, 305 stainless steel screen and riser was set to a depth of 16 feet. A section of .010-inch slot screen was set from 5 to 16 feet. A stainless steel cap was placed on the bottom of the screen section. Grade Ø silica sand was used as a screen pack material and placed from 3.5 to 16 feet. A hydrated bentonite seal was installed over the sand pack from 2 to 3.5 feet. A pressure-sealed locking well cap was placed on top of the stainless steel well. The well was completed with a 4-inch steel stick-up protective outer casing.

Monitoring well MW-4 was also installed in the East Lot. Monitoring well MW-4 was placed on top of the existing bank, along the fence bordering Michellotti property. The boring was advanced to a depth of 16.5 feet. A string of flush-threaded, 2-inch diameter, schedule 10, 305 stainless steel screen and riser was set to a depth of 16.5 feet. A section of .010-inch slot screen was set from 5.5 to 16.5 feet. A stainless steel cap was placed on the bottom of the screen section. Grade 0 silica sand was used as a screen pack material and placed from 3.6 to 16.5 feet. A hydrated bentonite seal was installed over the sand pack from 2.1 to 3.6 feet. A pressure-sealed locking well cap was placed on top of the stainless steel well. The well was completed with a 4-inch steel stick-up protective outer casing.

The four overburden monitoring wells were developed by the pump and surge method until they consistently yielded visually silt-free water.

2.1.2 Hydraulic Conductivity Testing

Hydraulic conductivity (K) was determined at each of the four monitoring well locations. The K values were calculated from measurements obtained during in-situ hydraulic conductivity tests. These tests were performed by causing an instantaneous change in the ground-water level in the well by removing a known volume of water from the well. The resulting rise of the water level was then measured and timed by transducers stationed in the wells.

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One liter of ground water was removed from each well using a 2-inch bottom loading bailer. The continuous rise in ground-water level was timed and measured for approximately 30 minutes or until the water level approached the static water level condition.

The Bouwer-Rice method was used for calculation of the K value. The results of the hydraulic conductivity tests are discussed in Section 3.

2.1.3 Storm Drain/Culvert Investigation

The on-site storm drain located in the northeast corner of the East Lot is presumed to be hydraulically connected with an intermittent ponding area located east of the CSMI Site and adjacent to the track bed right-of-way of the New Jersey Transit Railroad. The ponding area is hydraulically connected to Schroeders Brook via a culvert passing beneath the railroad tracks. The RI/FS Work Plan (1989) proposed the investigation of the drainage system to determine whether site-related constituents had migrated off-site. The proposed investigation included sediment sampling in the storm drain, and sediment and water sampling in the ponding area.

Throughout the Phase I RI, water flow from the ponding area through the culvert to Schroeders Brook was blocked by various debris (i.e., tires, cylindrical containers, wood). Stagnant water had accumulated in the ponding area due to the blockage. The water level in the ponding area was elevated above the tops of both the discharge pipe into the ponding area and the culvert. Due to the presence of stagnant water and debris in the ponding area, the planned sediment and water sampling could not be performed until the debris was removed and normal flow conditions were reinstated.

The investigation of the on-site storm drain was initiated during the Phase I RI. The storm drain was filled to capacity with standing water, which was not flowing out of the storm drain at an observable rate. During periods of precipitation, surface run-off from the East Lot, Lanza Avenue, and the concrete pad located directly north of the storm drain was observed to be flowing into the storm drain. The storm drain remained full of standing water and exhibited little flow throughout the course of the Phase I RI.

An attempt was made on July 21, 1989, to pump out the standing water. This effort to dewater the storm drain was unsuccessful due to incoming contributions of water from surface run-off and, presumably, the inflow pipe, which was not visible at this time. A second unsuccessful attempt to pump out the standing water was made on July 24, 1989.

Following an extended period of low precipitation in August 1989, the water level in the storm drain subsided to a level low enough to allow sediment sampling to take place. One sediment sample (SD-1) was obtained from the bottom sediment in the storm drain on August 10, 1989. The sediment sample was obtained with a stainless steel sampling tool, placed in two 40-ml glass vials and one 500-ml wide mouth glass jar, and submitted to the contract laboratory for analysis.

During the collection of the sediment sample, the storm drain was probed with an extended sampling pole to confirm the presence of, and determine the direction of, the inflow and outflow pipes located within the storm drain. The pipes were not visible due to the water level in the storm drain. The inflow pipe is believed to run beneath the East Lot to a second storm drain located adjacent to the concrete slab where metal crushing is performed. (Figure 3). This second storm drain is believed to be connected to the drainage system collecting surface run-off from Walther Avenue, located to the south of the site. The destination of the outflow pipe was not confirmed; however, the direction of the outflow pipe was determined to be toward the northeast.

Following sediment sampling in the storm drain, a dye test was initiated to determine the destination of the outflow pipe. The dye test was performed by allowing water to flow, via a hose, into the storm drain and by adding dye pellets to the water. The water was allowed to flow from the hose for approximately five hours. For the duration of the test, the ponding area and adjacent areas along the New Jersey Transit Railroad were inspected to observe any discharge of dye. No dye was observed discharging in the area. A second dye test was attempted on August 25, 1989. However, on this occasion, the water level in the storm drain was elevated, and sufficient outflow did not exist to allow an adequate amount of water to be input into the storm drain to carry out the dye test. The dye tests were inconclusive due to the lack of flow existing in the storm drain.

Based on the Phase I RI field observations, it was concluded that the hydraulic connection between the storm drain, the ponding area, the culvert, and Schroeders Brook was impaired by the blockage of debris. Therefore, sampling in the ponding area was postponed until the hydraulic connection and water flow could be reestablished in this drainage system.

2.1.4 Laboratory Analyses

The majority of samples obtained from the CSMI Site during the Phase I RI were analyzed for PCBs and VOCs in the on-site mobile field laboratory. Based on the results of the field analyses, samples were selected for analyses of all chemical constituents on the USEPA Target Compound List (TCL) at the contract laboratory. In addition to the analytical analyses, five soil samples were analyzed at a geotechnical laboratory for grain size distribution and Atterberg Limits. Two rounds of ground-water samples were collected from the four monitoring wells and were submitted to the contract laboratory for TCL analysis. The results of the soil, sediment, and ground-water sampling are discussed in Section 3 - Site Assessment.

2.1.4.1 Field Laboratory

A mobile, environmental field laboratory was used throughout the duration of the Phase I RI field investigation. The primary purpose of the mobile field laboratory was to aid in the preliminary screening of soil samples in order to determine which soil samples would be submitted for analyses by the contract laboratory. This preliminary screening provided relatively rapid turnaround time for the analyses, which enabled the field team to make appropriate decisions concerning the sampling program and the appropriate health and safety protocols to be followed during the field investigation.

The mobile environmental laboratory was provided by Tetra-K-Testing, Inc., from Plymouth, Massachusetts. The laboratory was equipped with a HNU Model 421 Gas Chromatograph with flame-ionization and photoionization detection for volatile organic analysis and an electron capture detector for PCB analysis.

Following collection, the soil samples were delivered to the mobile laboratory, which was stationed in the South Lot of the

CSMI Site. Soil samples were generally analyzed within eight hours of the time that they were collected, and all samples were analyzed within 24 hours. The sample preparation method for VOCs was the USEPA Method 3810 headspace screening method. The VOC results were calculated using the internal standard method. The sample preparation method for PCB analysis was adapted from: "Field Measurement of PCB's in Soil and Sediment Using a Portable Gas Chromatograph" (Thomas M. Spittler, USEPA Region 1, Lexington, MA). A packed column GC method was used, consisting of hexane/methanol extraction of the soil with a direct injection of 1-5 ul of the extract. The PCB results were calculated using the external standard method.

A total of 135 soil samples from the CSMI Site were analyzed in the mobile field laboratory: 53 soil samples obtained in the East Lot, 40 soil samples obtained in the South Lot, and 42 soil samples obtained in the West Lot.

2.1.4.2 Contract Laboratory

Soil samples were selected for TCL by the contract laboratory based on the VOC and PCB results achieved at the mobile field laboratory. Two rounds of ground-water samples were obtained and submitted to the contract laboratory. The contract laboratory was York Laboratories, Inc., of Whippany, New Jersey. York Laboratories followed, as guidance, the quality control protocol established by the USEPA Contract Laboratory Program (CLP). A CLP documentation package was included with all analyses as part of the quality assurance/quality control (QA/QC) procedures.

All analytical data was validated by a qualified data validator at Blasland & Bouck. Data validation followed the USEPA Region II Guidance and Protocols set forth in Section 10 of the Quality Assurance Project Plan (QAPP), dated March 1989.

A. Soil/Sediment

The criteria used for selecting soil samples for TCL analyses at the contract laboratory was based on the analytical results obtained by the mobile field laboratory. If the following criteria were met, the soil sample was selected for TCL analyses:

1. Pre-selection based on sampling grid location;
2. A total VOC concentration greater than 1 ppm; and/or
3. A total PCB concentration greater than 5 ppm.

If the soil sample met only the third criterion (a PCB concentration greater then 5 ppm) and did not meet the second (a VOC concentration greater than 1 ppm), then the soil sample was submitted to the contract laboratory for PCB/Pesticide analyses only. Soil samples meeting the first or second criterion, or both, were submitted to the contract laboratory for analyses of the following:

1. TCL VOCs;
2. TCL Semivolatiles;
3. TCL Inorganics;
4. PCBs/Pesticides;
5. Phenols;
6. Total cyanide; and

7. GC/MS Peaks exceeding 10 percent of the nearest calibrating standard for tentatively identified compounds (TICs).

The sediment sample obtained from the on-site storm drain was analyzed for all of the above listed parameters. Soil samples collected from the interval directly above the saturated zone were analyzed for total petroleum hydrocarbons (TPHs), in addition to the above listed analyses.

In accordance with QA/QC procedures, a field blank was obtained on a daily basis from one of the split-spoon samplers used to collect the soil samples. The analyte-free water used to obtain the field blank was supplied by the contract laboratory. A trip blank, supplied by the contract laboratory, accompanied the soil samples in the field and was analyzed for VOCs on a daily basis. In addition, one set of soil samples per sample delivery group (10 samples) was submitted in triple sample volume to perform the required matrix spike/matrix spike duplicate analyses, as set forth in the QAPP, March 1989, prepared for the CSMI Site.

A total of 129 soil samples were obtained from the CSMI Site during the Phase I RI field investigation. One hundred thirteen of these samples were collected from the East Lot and submitted for analyses at the contract laboratory; eight were submitted from the South Lot, and eight were submitted from the West Lot.

Thirty-one soil/sediment samples that were submitted to York Laboratories for VOC analysis exceeded the 10-day established CLP holding time, and were analyzed between 11 and 14 days following collection, in accordance with SW-846. The CLP holding times were not met due to internal laboratory oversight. These samples are listed below:

SB-28 (3-5)	SB-24 (0-2) & (4-6)
SB-13 (0-2)	SB-25 (2-4) & (4-6)
SB-17 (0-2)	SB-14 (0-2) & (4-6)
SB-10 (0-2)	SB-15 (0-2) & (2-4)
SB-42 (0-2)	SB-19 (0-2) & (2-4)
SS-1	SB-11 (0-2) & (5-7)
SD-1	SB-12 (0-2) & (4-6)
SB-43 (0-2) & (4-6)	SB-37 (0-2) & (4-6)
SB-40 (0-2) & (4-6)	MW-4 (0-2) & (4-6)

B. Ground Water

Two rounds of ground-water samples were obtained from the four monitoring wells at the CSMI Site. The first round of ground-water sampling was performed on August 24, 1989, while the second round was performed on November 14, 1989. Ground-water samples were obtained in accordance with the RI/FS Work Plan (1989).

All ground-water samples were analyzed for the following parameters:

1. TCL VOCs;
2. TCL Inorganics;
3. TCL Semivolatiles;
4. PCBs/Pesticides (total);
5. Phenols;
6. Total cyanide; and

7. GC/MS Peaks exceeding 10 percent of the nearest calibrating standard for tentatively identified compounds (TICs).

One duplicate ground-water sample was obtained from monitoring well MW-3 during the first ground-water sampling event and from monitoring well MW-4 during the second ground-water sampling event. In addition, one set of QA samples, consisting of triple sample volume, was collected from one monitoring well during each sampling event to perform the matrix spike/matrix spike duplicate analyses. A field blank was obtained from one decontaminated bailer and analyzed for the above listed parameters. The analyte-free water used for the field blank was supplied by the contract laboratory. A trip blank, also supplied by the contract laboratory, accompanied the samples in the field and was analyzed for VOCs only.

Prior to initiation of sampling, each monitoring well was purged a minimum of three well volumes. Ground-water samples were obtained from the monitoring wells using stainless steel top-loading bailers. The bailers were decontaminated prior to and between sampling of each well, in accordance with the procedures set forth in the RI/FS Work Plan (1989).

2.1.4.3 Geotechnical Laboratory

Grain size (sieve) analyses and Atterberg Limit Analyses were performed on five subsurface soil samples from the CSMI Site. The soil samples were selected to represent the various soil types encountered at the site. The soil types encountered

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were predominately reworked sand and gravel, containing some silt and fill materials, and a silty sand.

The following five soil samples were selected and submitted for geotechnical analysis:

1. A reddish-brown silt obtained from location MW-4 from a depth of 10 to 12 feet;
2. A dark red, weathered Brunswick sandstone from location MW-4 from a depth of 14 to 16 feet;
3. A reworked sand and gravel from location SB-28 from a depth of 3 to 5 feet;
4. A reworked sand and silt from location MW-1 from a depth of 2 to 4 feet; and
5. A brown silt with some clay and sand from location MW-1 from a depth of 4 to 6 feet.

Sieve and hydrometer analyses were performed to determine grain size distribution in the sample, and the results are reported as percentage of sample volume passing through various decreasing screen sizes. The grain size distributions of the five soil samples are presented in Table 2. The grain size distributions are reported in approximate percentages; no distinction has been made for fine- to coarse-sized sand and gravel. The complete results from the geotechnical analyses are presented in Appendix B.

The grain-size results from MW-4 (14 to 16 feet) identified the Brunswick sandstone as consisting of primarily gravel-sized fragments with 31 percent sand and silt. This data aids in identifying the weathered nature of the sandstone bedrock. The sample interval tested above the sandstone, MW-4 (10 to 12 feet), consisted of 92.7 percent silt. Based on this data, the presence of a less permeable soil interval above the sandstone is confirmed. The results from location SB-28 (3 to 5 feet) indicate a soil consisting of predominately sand and gravel with some silt. The results for the sample interval obtained from location MW-1 (2 to 4 feet) indicate similar grain-size distribution as identified in sample SB-28 (3 to 5 feet). These soil samples represent the upper reworked soil interval that exists at the CSMI Site. The grain-size distribution in the sample obtained from location MW-1 (4 to 6 feet) was predominantly silt with some sand. This interval represents the less reworked soil underlying the upper reworked intervals. In general, the soil classifications assigned in the field correlate well with the grain-size distributions determined by the sieve and hydrometer analyses.

2.2 Phase II Field Investigation - 1990

The Phase II RI field investigation was carried out by Blasland & Bouck between June 25 and July 12, 1990, in accordance with the USEPA-approved Supplemental Work Plan prepared by Blasland & Bouck, entitled "Supplemental Work Plan, Expanded Remedial Investigation and Focused Feasibility Study, April 1990, Revised August 1990" (Supplemental Work Plan). The investigation performed in the CSMI Site's East Lot, which is the site's active scrap metal recycling area, coincided with the annual shutdown of the CSMI Site operations, scheduled during the holiday week of July 4, 1990.

The Phase II RI included an expanded ground-water investigation focused in the East Lot, supplemental soil sampling in the East Lot, an off-site soil investigation on the Michellotti property bordering the east and south perimeters of the East Lot, and the installation of five temporary well points (TWPs) and two monitoring wells. In addition, the Phase II RI addressed the remaining sediment sampling to be completed for the storm drain ponding/culvert investigation.

The scope of work performed during the Phase II RI field investigation included:

1. Installation of five TWPs in the East Lot, with associated soil and ground-water sampling and analyses;
2. Installation of a monitoring well cluster (MW-5U & MW-5L) in the East Lot, with associated soil and ground-water sampling and analyses;
3. Advancement of seven soil borings on the Michellotti property with associated soil sampling and analyses;
4. Decommissioning of the five TWPs and monitoring wells MW-1 and MW-4; and
5. Completion of sediment sampling in the ponding area.
6. Performance of in-situ hydraulic conductivity (K) tests at the five TWPs and monitoring wells MW-5L and MW-5U.

On June 25, 1990, representatives from the USEPA and Blasland & Bouck inspected the CSMI Site. The purpose of the inspection was to examine the conditions of the site prior to initiating the Phase II RI field investigation and, if necessary, to modify the proposed scope of the investigation. The following decisions were made by the USEPA based on the field inspection results and were implemented during the Phase II RI field investigation:

1. Monitoring well MW-4 had sustained additional damage and was no longer usable. Therefore, monitoring well MW-4 was decommissioned;
2. The proposed location of monitoring well cluster MW-5 was flooded, as was much of the East Lot, due to heavy precipitation received prior to the inspection. Therefore, to avoid potential contamination of ground water with the impounded surface water during well installation, monitoring well cluster MW-5 was relocated approximately 20 feet to the south of its originally proposed position;
3. Changes observed in the storm drain and ponding area included:
   a. Debris and sediment from the ponding area had been removed and placed at pond's edge;
   b. Water was able to flow through the culvert to Schroeders Brook; and
   c. Standing water in the on-site storm drain was lowered.

   Based on these changes, the originally proposed sediment sampling in the ponding area was revised. One sediment sample was collected from the outflow pipe discharging into the ponding area; and
4. Drums containing drill cuttings and spent decontamination liquid from the Phase I RI field investigation staged at the southeast corner of the East Lot had been damaged and covered with steel plates and posts. The drums were consolidated and relocated to

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an area north of the truck scale to minimize the potential for further damage.

The TWPs, monitoring well cluster MW-5, and the off-site borings were surveyed to the established monuments to obtain ground elevation and the elevation of the top of the wells. The ground elevations established a reference for the elevation of each sample interval and ground-water level.

2.2.1 Subsurface Investigation

The subsurface investigation included the advancement of 14 soil borings. Five of the 14 soil borings were completed as TWPs, and two of the 14 soil borings were completed as monitoring well cluster MW-5 (MW-5U & MW-5L). These seven soil borings were completed in the East Lot of the CSMI Site. The remaining seven borings, designated as SB-50 through SB-56, were completed off site on the Michellotti property. The locations of each soil boring, monitoring well, and the five TWPs installed during the Phase II RI field investigation are presented on Figure 5. Subsurface logs, complete with geologic descriptions and drilling notes, are included in Appendix A.

2.2.1.1 Soil Borings

Soil borings within the East Lot were advanced using 4¼-inch inside diameter HSAs. Off-site soil borings were advanced with a split-spoon sampler driven by 140-pound hammer. Continuous soil sampling was conducted in the overburden, using 2-foot long by 2-inch or 3-inch outside diameter split-spoon samplers.

Representative soil samples were collected from each split-spoon at 2-foot intervals in accordance with the procedures set forth in the Supplemental Work Plan. During the soil sampling, each split-spoon was monitored for organic vapors, using a HNU photoionization detector. A representative portion of the soil sample was retained in one pint-size glass jar and covered with aluminum foil. This sample jar was used to measure the organic vapor content present in the headspace of each soil sample retained.

If the soil sample interval was preselected for analyses, the sample was retained in the appropriate sample container. Any sample designated to be analyzed for VOCs was retained in two 40-ml glass vials with Teflon septum tops. Any sample designated to receive additional analyses (PCB, VOCs, inorganics, etc.) was retained in a 500-ml wide-mouth glass jar.

All drilling equipment and sampling tools were decontaminated by either a steam cleaning process or by a solvent wash, according to procedures set forth in the Supplemental Work Plan, Appendix A.

A. East Lot

Five TWPs and two clustered monitoring wells, MW-5L and MW-5U, were installed in the East Lot. The five TWPs were located throughout the East Lot area. The monitoring well cluster is located hydraulically downgradient and in the northeast corner of the East Lot.

The borings for the TWPs were advanced and soil was continuously sampled to a depth of 10 feet, approximately 5 feet into the water bearing zone. The boring for monitoring well

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MW-5U was advanced to a depth of 9 feet, and the boring for monitoring well MW-5L was advanced to a depth of 15 feet.

The overburden was continuously sampled to a depth of 15 feet at monitoring well MW-5L. The overburden was not sampled at monitoring well MW-5U, based on its close proximity (approximately 6 feet) to monitoring well MW-5L. Therefore, the observed overburden at monitoring well MW-5U is assumed to be similar to that observed at monitoring well MW-5L.

The TWPs were decommissioned on July 9, 1990, under the supervision of a New Jersey Certified Well Sealer, in accordance with the protocols set forth in the Supplemental Work Plan, Appendix E.

B. Off-Site

The seven off-site borings (SB-50 through SB-56) were located on the Michellotti property and bordered the east and south sides of the CSMI Site's East Lot fence. They were located approximately 5 to 10 feet from the fence and spaced approximately 30 feet apart from one another. The off-site borings were advanced to a depth of 6 feet; however, soil boring SB-51 was advanced to 5 feet and SB-52 was advanced to a depth of 7 feet. Soil samples were continuously collected at each boring location. The borings were plugged with a cement/bentonite grout introduced at ground surface with a tremie pipe.

The overburden generally consisted of brown to reddish-gray sand with some minor amounts of silt. Concrete was present from a depth of 0 to 1 foot at boring locations SB-51 and SB-52.

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At these two locations, HSAs were advanced to one foot. Split-spoon samplers were then driven with a 140-pound hammer, from one foot to the bottom of the borings. Saturated soil was generally reached at a depth of 5 feet.

2.2.1.2 Monitoring Well and Temporary Well Point Installation

Two monitoring wells were installed during the Phase II RI in accordance with the protocols set forth in the Supplemental Work Plan. The two monitoring wells, MW-5L and MW-5U, were screened in the overburden material. A summary of well construction specifications is presented in Table 1. Detailed subsurface logs, including geologic descriptions and well design details, are included in Appendix A.

Monitoring well MW-5L was installed in the East Lot in a hydraulically downgradient location and screened in the lower portion of the overburden. Monitoring well MW-5L was placed adjacent to monitoring well MW-3, southeast of the on-site storm drain. The boring was advanced to a depth of 15 feet. A string of flush threaded, 2-inch diameter, schedule 10, 305 stainless steel screen and riser was set to a depth of 14.8 feet. A section of .010-inch slot screen was set from 10.8 to 14.8 feet. A stainless steel cap was placed on the bottom of the screen section. Grade Ø silica sand was used as a screen pack material and placed from 10 to 15 feet. A hydrated bentonite seal was installed over the sand pack from 8 to 10 feet. A 2-inch pressure-sealed locking well cap was placed on top of the stainless steel riser. A cement/bentonite grout was installed from 8 feet to the surface, where a 2-foot x 2-foot x 1-foot cement pad was constructed. The well was completed by placing a 4-inch x 5-foot locking steel outer protective casing 2.5 feet into the cement.

Monitoring well MW-5U was installed within 6 feet of MW-5L, in the upper portion of the overburden. Monitoring well MW-5U was placed 6 feet south of MW-5L. The boring was advanced to a depth of 9 feet. A string of flush threaded, 2-inch diameter, schedule 10, 305 stainless steel screen and riser was set to a depth of 9 feet. A section of .010-inch slot screen was set from 5 to 9 feet. A stainless steel cap was placed on the bottom of the screen section. Grade Ø silica sand was used as a screen pack material and placed from 3.3 to 9 feet. A 2-inch pressure-sealed locking well cap was placed on top of the stainless steel riser. A hydrated bentonite seal was installed over the sand pack from 2 to 3.3 feet. A cement/bentonite grout was installed from 1 to 2 feet, and a 2-foot x 2-foot x 1-inch cement pad was installed at the surface. The well was completed by placing a 4-inch x 5-foot locking steel protective casing 2.5 feet into the cement.

A total of five TWPs were installed during the Phase II RI, in accordance with protocols set forth in the Supplemental Work Plan. The TWPs, TWP-1, TWP-2, TWP-3, TWP-4, and TWP-5, were constructed as overburden monitoring wells, screened in the upper portion of the aquifer. A summary of well construction specifications is presented in Table 1. Detailed subsurface logs, including geologic descriptions and well design details, are included in Appendix A.

All five TWPs are located in the East Lot and constructed in a similar manner. The borings were advanced to a depth of 10.5 feet. A string of flush-threaded, 2-inch diameter, schedule 10, schedule 10, 305 stainless steel screen and riser was set to a depth of 10.3 feet. The .010-inch slot screen was placed from 5 to 10 feet. A stainless steel cap was placed on the bottom of the well section. Grade Ø silica sand was used as a screen pack material and placed from 4 to 10.3 feet. A hydrated bentonite seal was installed over the sand pack from 4 feet to the surface. A pressure-sealed locking cap was fitted at the top of the stainless steel well.

The two monitoring wells and five TWPs were developed by the pump and surge method, as well as by bailing, until they consistently yielded silt-free water and the specific conductivity decreased and stabilized.

2.2.2 Hydraulic Conductivity Testing

Hydraulic conductivity (K) values were determined at each of the five TWPs and monitoring wells MW-5L and MW-5U. The K values were calculated from measurements obtained during in-situ hydraulic conductivity tests. The tests were performed by causing an instantaneous change in each well's ground-water level by removing a known volume of water from the well. The rise in water level was then measured and timed. The Bouwer-Rice method was used for calculation of the K value. The results of the hydraulic conductivity tests are discussed in Section 3.

2.2.3 Well Decommissioning

The five TWPs that were installed as part of the Phase II RI field work were decommissioned on July 9, 1990, following ground-water sampling and hydraulic conductivity testing. Two monitoring wells (MW-1 and MW-4) that were installed during the Phase I RI field work were decommissioned on July 11, 1990. The TWPs and monitoring wells were decommissioned by a certified New Jersey Well Sealer in accordance with the protocols set forth in the Supplemental Work Plan, Appendix E.

The TWPs were decommissioned following the Phase II RI field investigation because they were located in the center of the East Lot, where the majority of the scrap metal recycling operations conducted at the site are performed. Monitoring well MW-1, located on Lanza Avenue, was decommissioned because the flush-mount inst'allation was damaged by heavy road equipment. Monitoring well MW-4," located in the East Lot, was decommissioned due to structural damage sustained during the recycling operations. The decommissioning of both monitoring wells would assure that contaminated surface run-off and oil did not infiltrate the well seals.

2.2.4 Storm Drain and Ponding/Culvert Investigation

The investigation of the storm drain located in the northeast corner of the CSMI Site's East Lot began during the Phase I RI (July through August 1989), and was completed during the Phase II RI field investigation. The objective of the storm drain investigation was to determine if contaminants in the East Lot had migrated off site via surface water drainage into the on-site storm drain.

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A CSMI Site inspection was performed on June 25, 1990, by representatives of the USEPA and Blasland & Bouck. The following is a brief description of the observations made during the site inspection:

1. The water level in the on-site storm drain was significantly lower than was observed during previous inspections. In addition, the inflow and outflow pipes were now visible near the bottom of the storm drain.
2. The ponding area and the culvert located adjacent to the New Jersey Transit Railroad right-of-way was free of debris. Water was now flowing from the pond through the culvert to Schroeders Brook.
3. Sediment and various debris from the pond and culvert had been removed and deposited together adjacent to the pond's edge.

Based on these observations, a hydraulic connection was assumed to exist between the storm drain and the ponding area. This assumption was based on the fact that flow had resumed through the drainage system by removing the debris that had blocked normal flow in the culvert. Thus, by allowing normal flow conditions to resume in the culvert, the elevated water level previously observed in the on-site storm drain was lowered as water flowed through the connecting pipe to the ponding area and through the culvert to Schroeders Brook.

One sediment sample was collected from the sediment accumulated within the end of the outfall pipe that discharges into the ponding area. The sediment sample was obtained from the upper 0 to 6 inches of sediment in accordance with the procedures set forth in the

Supplemental Work Plan. Additional sediment sampling was not recommended or required by the USEPA because the sediment in the ponding area had been disturbed and much of the upper sediment interval in the ponding area had been removed with the debris. In addition, surface water sampling was not recommended by the USEPA due to the disturbance experienced in the ponding area.

2.2.5 Laboratory Analyses

Soil samples were pre-selected for analyses on the basis of the additional data needed at each location. One sediment sample was obtained off site from the outfall pipe in the ponding area. One round of ground-water samples was collected from the five TWPs, monitoring well cluster MW-5, and upgradient monitoring well MW-2. The results of the soil and ground-water sampling are discussed in Section 3 - Site Assessment.

All soil, sediment, and ground-water samples were submitted to York Laboratories, Inc. The USEPA CLP quality control protocol was followed as guidance. A CLP documentation package was included with all analyses as part of the QA/QC procedures. The analytical data was validated by Paladin Associates, Inc., of Syracuse, New York.

2.2.5.1 Soil and Sediment

Soil samples from both the on-site soil borings and the off-site soil borings were pre-selected for analyses. The first and last soil interval obtained from the seven off-site boring locations (SB-50 through SB-56) were submitted for PCB analyses to determine whether PCBs had migrated beyond the East Lot. The last sample interval from the off-site borings was also analyzed for TPHs.

The seven soil samples obtained from monitoring well MW-5L were analyzed to provide a vertical profile of the soil chemistry. One sediment sample obtained from the outfall pipe in the ponding area was also analyzed. These soil and sediment samples were analyzed for the full TCL analyses, which included the following:

1. TCL VOCs;
2. TCL Inorganics;
3. TCL Semivolatiles;
4. PCBs;
5. Phenols;
6. Total Cyanide; and
7. GC/MS Peaks exceeding 10 percent of the nearest calibrating standard for TICs.

The last sample interval collected from monitoring well MW-5L (14 to 16 feet) was analyzed for TPHs, in addition to the above listed parameters.

Toxicity Characteristic Leaching Procedure (TCLP) analyses were performed on two composite soil samples (0 to 2 feet and 2 to 4 feet) obtained during the soil sampling at the TWPs. TCLP analyses was performed on these samples to obtain supplemental information needed to appropriately evaluate the landfill option for disposal of the East Lot soil. Two additional soil samples obtained from TWP-1 (4 to 6 feet) and TWP-4 (4 to 6 feet) were selected and analyzed for VOCs based on organic vapor measurements greater than 100 ppm on the HNU during headspace screening.

One duplicate sample was obtained from monitoring well MW-5L (10 to 12 feet) and was analyzed for the full TCL list of parameters. In addition, matrix spike/matrix spike duplicate analyses were performed on one soil sample per every 10 samples.

In accordance with QA/QC procedures, two field blanks were collected and analyzed. One field blank was obtained during collection of soil samples at the off-site borings, and one field blank was collected during soil sampling at monitoring well MW-5L. The field blanks were analyzed for the same parameters as the soil samples. One trip blank accompanied the samples in the field during the soil sampling at monitoring well MW-5L and was analyzed for VOCs.

2.2.5.2 Ground-Water

One round of ground-water samples was obtained from the TWPs, monitoring wells MW-5L and MW-5U, upgradient monitoring well MW-2, and monitoring well MW-3, on July 5, 1990. Ground-water samples were obtained in accordance with procedures set forth in the Supplemental Work Plan.

Ground-water samples were analyzed for the following parameters:

1. TCL VOCs;
2. TCL Inorganics, total and dissolved;
3. TCL Semivolatiles;
4. PCBs, total and dissolved;

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5. Phenols;

6. Total Cyanide;

7. Hardness and Total organic carbon; and

8. GC/MS Peaks exceeding 10 percent of the nearest calibrating standard for TICs.

Ground-water samples obtained from monitoring well MW-3 were analyzed for total and dissolved PCBs and inorganics only. The ground-water samples submitted and analyzed for dissolved PCBs and inorganics were filtered in the field using a .45-micron filter, in accordance with the protocols set forth in the Supplemental Work Plan. In addition to the laboratory analyses, pH, specific conductivity, and temperature were measured in the field at each monitoring well.

One duplicate ground-water sample was obtained from TWP-1. Matrix spike/matrix spike duplicate analyses were performed on ground water obtained in triple volume from monitoring well MW-2.

A trip blank, supplied by the contract laboratory, accompanied the samples in the field and was analyzed for VOCs. One field equipment blank was obtained from a decontaminated bailer and was analyzed for all TCL compounds. The bailers were decontaminated prior to and between sampling of each well, in accordance with the procedures set forth in the Supplemental Work Plan.

SECTION 3 - SITE ASSESSMENT

This section presents the results of the Phase I and Phase II Remedial Investigations. The geology and hydrogeology at the CSMI Site and surrounding area are discussed. The discussion of geology includes site topography, overburden characteristics, and bedrock lithology. The hydrogeology section discusses the physical and hydraulic properties of the overburden aquifer, ground-water elevations and ground-water flow direction, hydraulic conductivity, and average linear velocity. The hydrogeology section also discusses the hydraulic connection between the CSMI Site storm drain and Schroeders Brook. The nature and extent of contamination is discussed in terms of the chemical constituents detected in soil and ground-water and the locations where they were detected.

3.1 Geology

The CSMI Site Phase I RI included a subsurface soil investigation designed to evaluate the overburden geology in the site's East, West, and South Lots. The Phase II RI concentrated primarily on the East Lot. Detailed subsurface logs, complete with geologic descriptions of the overburden observed during drilling in the East, West, and South Lots, are presented in Appendix A.

The overall topography at the CSMI Site has a relatively shallow grade. The ground-surface elevation is 54.04 feet in the West Lot at monitoring well MW-1 and 54.10 feet in the South Lot at monitoring well MW-2. The majority of the ground surface in the West and South Lots is paved and remains relatively unchanged. The topography in the East Lot has a relatively slight grade and changes by only a few feet; however, the ground surface is in

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flux, due to the operation of heavy construction equipment used in the metal recycling operations in the East Lot.

The only distinct change in elevation in the East Lot was along the property boundary in the eastern and southern perimeters, where soil had been mounded to form a bank bordering the property fence line. The top and bottom of the bank depicting the mounded soil is presented on Figure 3. During the Phase I RI field investigation in 1989, there was an approximate 2.5- to 4-foot change in elevation from the top to the bottom of the bank.

The bank was altered in 1990 when the chain link fence bordering the Michellotti property on the east and south perimeters of the East Lot was replaced with a new, solid steel-plate fence. During installation of the new fence, soil that had migrated past the chain link fence was moved back to the East Lot. Subsequently, the elevation difference between the top and bottom of the bank was less abrupt. In general, however, the eastern and southern perimeters of the East Lot remained relatively elevated in comparison with the other areas of the East Lot.

The observed overburden at the CSMI Site extended to an average depth of 16 feet. In general, the overburden in the upper 4 to 6 feet consisted of reworked soil, combined with various fill material and scrap metal fragments. The majority of the soil borings advanced at the CSMI Site were terminated at a depth of 6 to 8 feet, corresponding with the depth at which saturated soil conditions were encountered.

The upper 4 to 6 feet of reworked or disturbed soil was generally observed to consist of fine to coarse sand, with varying amounts of silt and gravel. The various fill material present in the upper disturbed soil interval included fragments of glass, wood, brick, concrete, and metal. The fill

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material was predominantly encountered in the East Lot soil. However, brick, ash, and concrete were also encountered in the West Lot and South Lot.

In the East Lot, old concrete floors from the farm structures that once stood at the site were encountered at several of the boring locations east of the scale house (refer to Figure 4). Concrete flooring material was encountered just below the surface to a depth of 2.5 feet at boring locations SB-3 and SB-4. The surrounding borings (SB-1, SB-2, SB-5, SB-6, SB-7, and SB-8) contained significant amounts of disintegrating concrete mixed with gravel and soil. Concrete was again observed from a depth of 2 to 4 feet at boring location SB-17 and from 2.4 to 3.6 feet at the location of TWP-4.

Natural soil conditions were encountered at several of the boring locations at depths below 4 feet. In the western section of the East Lot, at boring locations SB-10, SB-11, SB-12, SB-41, and SB-42, soil classified as reddish-brown sand and silt with some clay was identified at a depth of 4 to 6 feet. This soil interval had striations, indicating that it is undisturbed. At various other boring locations, soil below 4 feet was identified as a gray-brown sand and silt with little clay.

The overburden below 6 feet was sampled and characterized during the drilling at monitoring well locations MW-1, MW-2, MW-3, MW-4, and MW-5L. At these locations, a reddish-brown silt with some sand and clay was encountered extending to the top of the weathered bedrock. The average depth of weathered bedrock was 16 feet. The reddish-brown silt interval appears to be undisturbed by site operations.

At monitoring well MW-2, the lower portion of the overburden consisted of a slightly different lithology. A dark red sand and silt was encountered at a depth of 5 feet, extending to a depth of 10.5 feet. This interval contained striations and alternating bands of silt and sand. This interval was underlain by a dark red silt and clay extending to the top of the weathered bedrock encountered at a depth of 15 feet.

At the location of TWP-4, organic material consisting of leaf pack and wood was observed at 2 one-foot intervals: between 4 and 5 feet below grade and between 6 and 7 feet below grade.

Bedrock, identified as red, weathered Brunswick sandstone, was encountered at depths of 15.5, 16, and 14.5 feet, respectively, during drilling at monitoring well locations MW-3, MW-4, and MW-5L in the East Lot. Bedrock was encountered at similar depths during the drilling of monitoring wells MW-1 in the West Lot and MW-2 in the South Lot.

3.2 Hydrogeology

This section presents a summary of the hydrogeologic investigation performed at the CSMI Site for the Phase I and Phase II RI field investigations.

A total of five rounds of ground-water elevations were obtained from the four monitoring wells installed at the site during the Phase I RI. Ground-water elevations were also obtained on July 4 and 5, 1990, from the TWPs and the monitoring wells as part of the Phase II RI field investigation. However, ground-water elevations could not be obtained from monitoring well MW-1 during the Phase II RI because this well could not be opened prior to decommissioning on July 9, 1990. Ground-water elevations were obtained only from the TWPs on July 2, 1990, and again during the decommissioning of those TWPs on July 9, 1990. The ground-water elevations are summarized in Table 3. Ground-water contour maps, based on the ground-water elevations obtained on August 24, 1989, and July 5, 1990, are presented on Figures 6 and 7, respectively.

Saturated soil was encountered during advancement of the subsurface soil borings at depths ranging from 5 to 8 feet. However, based on the ground-water elevations measured in 1989 and 1990, ground water was present in the monitoring wells at depths ranging from 2.07 to 6.09 feet below ground surface (bgs). In general, the measured depth to ground water throughout the East Lot was approximately 4.5 feet. The measured depth to ground water in monitoring well MW-1, located in the West Lot, ranged from 3.88 to 4.92 feet bgs. The measured depth to ground water in monitoring well MW-2, located in the South Lot, ranged from 3.96 to 5.5 feet bgs.

Surface water draining from the top of the bank along the East Lot's fence line and from the truck scale and concrete pad area in the East Lot *may be contributing to the shallow ground-water level measured in monitoring* well MW-3. In addition, due to its low surface elevation and improper drainage into the adjacent catch basin, surface water was observed to be ponded in the area surrounding monitoring well MW-3.

Based on the measurements obtained, the average fluctuation of the ground-water elevation is 1.0 feet. The ground-water elevations were highest in monitoring wells MW-1 through MW-4, during November 1989. The November measurements were preceded by a significant precipitation event that occurred the day and morning prior to obtaining the ground-water measurements.

The hydraulic conductivity (K) values, calculated for the overburden from the monitoring wells and TWPs, are presented in Table 4. The average K value calculated for the overburden wells was 3.8×10^{-4} cm/sec. The maximum K value calculated was 1.0×10^{-3} cm/sec at monitoring well MW-1. The minimum K value calculated was 5.3×10^{-5} cm/sec at TWP-3. The

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remainder of the K values calculated were in the range of 1.3×10^{-4} cm/sec to 8.1×10^{-4} cm/sec.

The ground-water flow direction at the CSMI Site is generally toward the east. The ground-water flow direction may be influenced by the active well located on the Michellotti property, approximately 80 feet east of the CMSI Site's East Lot. This well has a rated capacity of 60 gallons per minute.

The average hydraulic gradient across the site, based on the August 24, 1989 ground-water elevations, was 0.003 ft./ft. The ground-water elevations varied by less than one foot across the site. The average hydraulic gradient across the site, based on the July 5, 1990 ground-water elevations, was 0.008 ft./ft.

The average linear velocity was calculated for ground-water flow in the overburden, using $V = Ki/n$, where K is the hydraulic conductivity, i is the horizontal hydraulic gradient, and n is the effective porosity. An effective porosity term of 0.2 was estimated for the soil type. An average K value of 3.8×10^{-4} cm/sec and an overall average hydraulic gradient of 0.0056 ft./ft. was used. The average linear velocity at the CSMI Site was calculated to be 0.030 ft./day. The average linear velocity was also calculated, using the maximum K value of 1.0×10^{-3} cm/sec and a hydraulic gradient of 0.008 ft./ft. An average linear velocity, using the maximum values, was calculated to be 0.113 ft./day.

The CSMI Site is underlain by the Brunswick formation, a sole source aquifer supply. This formation underlies extensive sections of New Jersey and some sections of New York and Pennsylvania. The Brunswick formation is characterized by fractured red sandstone and is determined to be present under the CSMI Site at a depth of approximately 16 feet.

3.3 Nature and Extent of Chemical Constituents

The location and identification of chemical constituents detected at the CSMI Site during the Phase I and Phase II RI field investigations are discussed in this section. The extent of chemical constituents detected in soil and sediment samples from both on-site and off-site locations will be discussed separately.

3.3.1 On-Site Conditions

The Phase I RI field investigation involved soil and ground-water sampling in the East Lot, South Lot, and West Lot. The Phase II RI field investigation expanded the soil and ground-water sampling in the East Lot. The analytical results from the investigations showed that organic and inorganic constituents of interest are present in East Lot soil at concentrations above background levels. The ground-water results indicate that concentrations of VOCs and metals were elevated in some of the monitoring wells in the East Lot. Concentrations of PCBs were detected in some unfiltered ground-water samples.

3.3.1.1 Soil and Sediment Analytical Results

Based on the analytical soil data generated during the Phase I RI field investigation, the area of concern at the CSMI Site is the East Lot, the active recycling yard. Organic and inorganic constituents are not of concern in the West Lot or the South Lot.

The analytical results for the soil samples are summarized in Tables 5 through 15. To simplify the presentation of the complex analytical soil results from the site's East Lot, these results are also presented graphically on Figures 8 through 24. The preliminary screening results of soil samples by the mobile

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on-site field laboratory for VOCs and PCBs are presented in Appendix D.

Soil Samples

Six soil borings and one monitoring well, MW-2, were installed in the South Lot area. Figure 8 graphically presents the field screening and analytical results for VOCs and PCBs from the soil samples from these boring and monitoring well locations. VOCs were detected in only one of those six soil samples. Total VOCs were detected at a concentration of less than 1 ppm at boring location SB-44, located at the southern edge of the East Lot. PCBs were detected at monitoring well MW-2 and boring location SB-44. Both samples were analyzed by the contract laboratory, where PCB concentrations of 2.3 ppm and 13.5 ppm were detected, respectively, in the samples. Based on the data, it does not appear that the site's South Lot is an area of environmental concern.

The investigation in the West Lot included analyses of samples from the five soil borings installed on Lanza Avenue, one boring in the entrance to the site's Main Building, and upgradient monitoring well MW-1. The data obtained in the West Lot (Figure 8) indicated that the soil beneath Lanza Avenue has not been affected by chemical constituents present at the site.

The results of the subsurface soil investigation performed in the site's East Lot are presented in summary Tables 5 through 15 and on Figures 9 through 24. Chemical constituents that were tested for, but not detected, have not been listed on the summary tables.

The results of the soil sampling and analyses are reflective of the conditions existing during July and August 1989 (Phase I RI) and June and July 1990 (Phase II RI). Because the active scrap metal recycling operations at the site continually move the East Lot's upper 2 feet of soil, the analytical results reported for the uppermost interval at each boring location may not reflect the present soil condition of the East Lot's top soil. In general, the upper 2 feet of soil is continually mixed and occasionally moved to different locations within the East Lot. The soil within the center of the East Lot is most susceptible to disturbance because the operation of the crane in the East Lot mixes and relocates the surface soil. After rainy periods, wet soil from the center East Lot area is occasionally moved to the sides of the lot and left to dry. The areas of the East Lot least likely to experience significant soil movement are the eastern border along the top of the banked soil by the lot's fence line, the western edge of the East Lot near the compaction pit, and the southern edge of the East Lot where roll-off containers are located.

Table 5 summarizes the frequency at which individual VOCs were detected during the Phase I Investigation in soil boring and monitoring well locations by both the field and contract laboratories, including the maximum concentrations detected for each VOC and the corresponding boring location. The majority of the VOCs identified in soil samples from the CSMI Site were detected in samples obtained in the East Lot. The most frequently detected VOCs included benzene, 1,2-dichloroethane, ethylbenzene, tetrachloroethane, toluene, trichloroethene, and total xylenes. The presence of acetone and 2-butanone, detected in a majority of the samples from all areas of the site, may be related to laboratory cross-contamination. Relatively low concentrations of VOCs were detected in laboratory blanks and were not included in totaling the frequency of detected VOCs.

In general, the VOC concentrations detected in the soil samples that were analyzed in the field laboratory were higher than those detected by the contract laboratory. For example, the field laboratory detected ethylbenzene in 19 soil samples, with a maximum concentration of 18.0 ppm detected in a sample from boring SB-24. Ethylbenzene was detected in only 15 samples by the contract laboratory, with a maximum concentration of 4.1 ppm detected in the same SB-24 sample. The concentrations of total VOCs detected by the field laboratory range from estimated concentrations detected below minimum detection limit (BMDL) to a high of 206.3 ppm (SB-24), and the range detected by the contract laboratory was 0.003 ppm to 104.6 ppm (SB-25). Estimated concentrations BMDL are reported when the presence of a constituent is determined by the laboratory and meets the identification criteria; however, the value is less than the specified minimum detection limit, but greater than zero.

Total VOC concentrations detected in soil samples are summarized on Figure 7 for field analysis and on Figure 10 for CLP analysis. Since surficial soil (upper 2 feet) is continually excavated and relocated throughout the East Lot, discrete areas of high VOCs cannot be accurately defined. However, in general, the highest concentrations of total VOCs (104.6 ppm maximum) were located in the southern section of the East Lot at the time the Phase I RI field work was performed. Soil in the metal cutting area and the southern section of the East Lot is less likely to be disturbed by heavy machinery, which would limit the potential for volatilization of these compounds from soil at this location. Therefore, the highest detected VOC levels would be expected in these areas experiencing less disturbance.

The total VOC concentrations from the CLP analysis (depicted on Figure 10) include concentrations of compounds detected BMDL, but do not include compounds that were detected at low concentrations in the internal laboratory blanks. The compounds most frequently detected at low concentrations in the laboratory blanks, as well as in the samples, included methylene chloride and acetone, and less frequently, toluene and chloroform. The analytical results for VOCs detected in soil during the Phase I Investigation are summarized in Table 6.

Two additional soil samples obtained from TWP-1 and TWP-4 were analyzed for VOCs. Only acetone was detected in the two samples, as well as in the laboratory blanks. The VOC results for these two soil samples are included in Table 14.

The PCB concentrations detected by the contract laboratory were 5 to 450 percent higher than the concentrations detected by the field laboratory. This large discrepancy may be attributable to different extraction and analytical procedures used by the field laboratory in order to meet the short turnaround times needed to guide sampling. The analytical results for PCBs detected in soil during the Phase I Investigation are summarized in Table 8.

Four Aroclors (1242, 1248, 1254, and 1260) were detected at the CSMI Site. However, Aroclors 1242 and 1254 were prevalent and detected at the highest concentrations. Aroclor 1248 was detected in only one soil sample (MW-2) at a concentration of 1.4 ppm, and was not detected in any soil samples obtained in the East Lot. Aroclor 1242 was detected by the contract laboratory in 44 of the 58 soil samples analyzed. The measured concentrations ranged from 0.21 ppm to a high of 4,500 ppm (SB-19). Aroclor 1254 was detected in 37 samples at concentrations ranging from 0.12 ppm to a high of 1,700 ppm (SB-19). Aroclor 1260 was detected in seven soil samples at concentrations ranging from 1.1 ppm to a high of 210 ppm (SB-29).

The total combined concentrations of PCBs detected by the contract laboratory are presented on Figure 11. In general, the highest PCB concentrations were detected in the southern section of the East Lot in the location where the two roll-off containers were previously situated. However, the distribution of PCBs, both vertically and horizontally, appears to be randomly located throughout the East Lot.

The highest concentrations of total PCBs in the southern section of the East Lot were detected in samples obtained from soil boring SB-19 at 6,200 ppm at a depth of 0 to 2 feet and 3,200 ppm at a depth of 2 to 4 feet. Soil samples from the adjacent boring location, SB-15, also measured high concentrations of PCBs, with detected concentrations of 1,040 ppm at a depth of 0 to 2 feet and 1,560 ppm at a depth of 2 to 4 feet.

Borings SB-15 and SB-19 are located in the vicinity of the roll-off containers used for temporarily storing the cut metal before it is transported off site for recycling. During the Phase I RI field investigation, the surface soil in this area was observed to be oil-stained. The other boring locations where total PCBs were detected at concentrations in the thousands of ppm are SB-11 (0 to 2 feet), which reported 3,600 ppm; SB-17 (0 to 2 feet), which reported 4,460 ppm; and SB-27 (0 to 4 feet), which reported 2,300 ppm.

The results for inorganic constituents, analyzed by the contract laboratory, are summarized in Table 9. Results for several of the inorganic metals detected in the East Lot soil samples are presented on Figures 12 through 22.

Elevated metal concentrations relative to assumed background were detected at varying depths at locations throughout the East Lot. Arsenic appeared to be concentrated along the eastern and western sections of the East Lot; the analytical results for arsenic are presented on Figure 12. The maximum concentration of arsenic was detected in sample SB-11 (0 to 2 feet) at 55.6 ppm.

The analytical results for barium are presented on Figure 13. Barium was detected at the East Lot in concentrations ranging from 14.5 to 2,600 ppm. The maximum concentration of barium was detected in sample SB-28 (0 to 2 feet).

The analytical results for cadmium are presented on Figure 14. Cadmium was detected throughout the East Lot at concentrations ranging from 1.7 to 133 ppm. The maximum concentration of cadmium was detected in sample SB-15 (2 to 4 feet).

The analytical results for chromium are presented on Figure 15. Chromium was detected throughout the East Lot at concentrations ranging from 9.1 to 1,530 ppm. The maximum concentration of chromium was detected in sample SB-33 (0 to 4 feet).

The analytical results for copper are presented on Figure 16. Copper was detected at each boring location where a soil sample was analyzed. The measured concentrations ranged from 6.0 to 26,100 ppm. The maximum concentration of copper was detected in sample SB-25 (2 to 4 feet).

The analytical results for lead are presented on Figure 17. Lead was detected at random locations and depths throughout the East Lot and ranged in concentration from 5.0 to 39,300 ppm. The maximum concentration of lead was detected in sample SB-31 (0 to 2 feet).

The analytical results for mercury are presented on Figure 18. Mercury was detected at several locations and depths throughout the East Lot at concentrations ranging from 0.15 to 466 ppm. The maximum concentration of mercury was detected in sample SB-33 (0 to 2 feet).

The analytical results for nickel are presented on Figure 19. Nickel was detected at concentrations ranging 5.4 to 1,260 ppm. The maximum concentration of nickel was detected in soil sample SB-33 (0 to 4 feet).

The analytical results for selenium are presented on Figure 20. Selenium was detected at concentrations ranging from 0.15 to 113 ppm. The maximum concentration of selenium was detected in soil sample SB-4 (2 to 4 feet).

The analytical results for silver are presented on Figure 21. Silver was detected at concentrations ranging from 0.64 to 191 ppm. The maximum concentration of silver was detected in soil sample SB-12 (0 to 2 feet).

The analytical results for zinc are presented on Figure 22. Zinc was detected at concentrations ranging from 22.9 to 25,500 ppm. The maximum concentration of zinc was detected in soil sample SB-22 (0 to 2 feet).

Total petroleum hydrocarbon (TPH) analysis was performed on the samples obtained just above the saturated zone from the majority of boring locations in the East Lot (Figure 23). The results for TPHs detected at the boring locations are summarized in Table 10.

Only two soil samples submitted for TPH analysis from boring locations in the West Lot and South Lot contained concentrations of TPH above 25 ppm. TPH concentrations of 440 ppm and 340 ppm, respectively, were detected in the samples from soil boring locations ST and SB-40, advanced adjacent to an inactive underground fuel tank in the West Lot.

TPHs were more prevalent in the soil samples from the site's East Lot. In general, the highest concentrations of TPHs were detected in samples located along the eastern section of the East Lot and the low-lying area east of the truck scale building.

The maximum TPH concentration was detected in sample SB-31 (4 to 6 feet) at 53,000 ppm. Other soil boring locations, SB-18, SB-24, and SB-33, indicate relatively elevated concentrations of TPHs; however, no distinctive plume pattern is apparent.

Polynuclear aromatic hydrocarbons (PAHs) were included in the semivolatile analysis performed on the soil samples. Table 10 summarizes the semivolatile analytical results. The analytical results for PAHs from samples obtained in the East Lot are presented on Figure 24. Nineteen PAH compounds were included in the total concentration value. The PAH compounds detected in the semivolatile analyses included naphthalene, 2-methylnaphthalene, 2-chloronaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)-perylene. PAH compounds detected at low concentrations in the laboratory blanks were not included in the total value; however, compounds detected at estimated concentrations BMDL were included in the total PAH value.

The maximum total PAH concentration was detected in a sample obtained at boring location SB-14 (0 to 2 feet) at 96.6 ppm. There does not appear to be a correlation between the distribution of the high concentrations of PAHs and TPHs in the East Lot. PAHs were detected throughout the East Lot at varying depths. Elevated concentrations of PAHs were not detected in the low-lying area east-southeast of the scale house.

Vertical Profile

A vertical profile of constituents in soil from monitoring well MW-5L was obtained during the Phase II RI. Soil was collected in 2-foot intervals from ground surface to bedrock and submitted to the contract laboratory for full TCL analyses. The analytical results from the vertical sampling are presented in Tables 13 through 16. Seven soil samples were analyzed from monitoring well MW-5L. The bottom soil sample was obtained from 14 to 16 feet, just above bedrock. A soil sample was not submitted from the 8- to 10-foot interval due to an insufficient quantity of soil recovered in the split-spoon sampler.

The analytical results for PCBs indicate that two Aroclors, 1242 and 1260, were present in the three soil samples collected from the upper 6 feet of soil (Table 13). The concentrations were highest in the upper 2-foot sample interval and decreased with depth. The total PCB concentration in the three consecutive intervals was 60 ppm, 36 ppm, and 19.1 ppm, respectively. These results are comparable with the results obtained during the Phase I RI for soil samples obtained from adjacent monitoring well MW-3 (Figure 11).

PCBs were also detected in the soil sample interval obtained from 12 to 14 feet at a total concentration of 17.4 ppm. However, PCBs were not detected in the soil samples obtained from 6 to 12 feet. Based on the observed soil conditions encountered during drilling, the soil does not appear to be disturbed at that depth interval (see Appendix A for Boring Logs).

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It is difficult to determine the origin of the PCBs in this sample, given the depth and observed vertical distribution.

The analytical results for the vertical profile of VOCs are summarized in Table 14. The highest concentration of VOCs was detected in the 0 to 2-foot sample interval. The concentrations and number of VOCs detected decreased significantly with depth. The total VOC concentration in the 0 to 2-foot sample was 15,023 ppb and was comprised primarily of 15,000 ppm of 1,1,2,2,-Tetrachloroethane. The total VOC concentration decreased to 147 ppb (2 to 4 feet) and 32 ppb (4 to 6 feet). Below the 6-foot depth interval, only 1 ppb of toluene and chlorobenzene were detected. In general, the total concentrations detected in the samples obtained from the upper 6 feet of soil from MW-5L were lower in comparison to VOC concentrations detected during the Phase I RI.

The analytical results for the vertical profile of semivolatiles are summarized in Table 15. In general, the number of and total concentration of PAH compounds detected in soil samples from MW-5L were the same as detected in the East Lot Phase I RI soil samples. Bis(2-Ethylhexyl)phthalate was consistently detected in the samples and laboratory blanks in Phase I RI soil samples. The PAH concentrations decreased with depth and significantly decreased below the 6-foot soil sample interval. The soil samples obtained from the upper 6 feet of soil were in the range of 21.35 ppm (4 to 6 feet) to 26.45 ppm (0 to 2 feet). The concentration in the soil sample from the 6- to 8-foot interval was 0.425 ppm.

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The concentrations of metals observed in samples from the upper 6 feet of soil obtained from MW-5L were generally within the same concentration range observed in the Phase I RI soil samples. Concentrations of several metals significantly decreased below the 6-foot sample interval. For example, concentrations of copper decreased from 1,570 ppm (0 to 2 feet) to 425 ppm (2 to 4 feet) to 272 ppm (4 to 6 feet), and decreased to less than 10 ppm below 6 feet. Similar decreases in concentration were also observed for arsenic, barium, chromium, cadmium, lead, mercury, nickel, sodium, vanadium, and zinc.

Tentatively Identified Compounds (TICs)

In addition to the positively identified compounds analyzed, several TICs were also detected in the soil samples. Table 11 summarizes all the TICs identified in the soil samples during analyses for VOCs and semivolatile compounds. The Table 11 list includes the Phase I and Phase II RI data. Many of the compounds are listed as unknowns; therefore, the range in retention times are given, along with the number of samples in which the compounds were identified.

Field/Trip Blanks

In accordance with field QA/QC procedures, one field blank and one trip blank were analyzed for each sampling day of the Phase I and Phase II field work. Table 12 summarizes the field and trip blank analytical results for the Phase I RI field investigation. The field and trip blank results for the Phase II RI field investigation are included in the analytical summary tables for each parameter. In general, methylene chloride and acetone were the VOCs detected most frequently in the blanks. The semivolatile organic compound, bis(2-Ethylhexyl)phthalate, was detected at concentrations ranging from 3.0 ppm to 71 ppm in the majority of the field blanks. Several metals (aluminum, chromium, iron, manganese, and sodium) were detected consistently in the field blanks.

Sediment Samples

One sediment sample, SD-1, was obtained from the site's storm drain during the Phase I RI field investigation. The analytical results for this sediment sample are included in the tables summarizing the soil results. No VOCs were detected in the sediment sample, but several PAHs were detected. The primary PAH compounds detected in the sample included naphthalene (19 ppm), 2-methylnaphthalene (87 ppm), phenanthrene (35 ppm), and bis(2-Ethylhexyl)phthalate (29 ppm). Bis(2-Ethylhexyl)phthalate was detected in the laboratory blank as well. Two Aroclors, 1242 and 1254, were detected in the sediment sample at concentrations of 57 ppm and 42 ppm, respectively. The inorganic results appear to be similar to concentrations detected in the soil samples.

Toxicity Characteristic Leaching Procedure (TCLP)

The TCLP results for the two composite soil samples collected from the TWPs in the East Lot are summarized in Table 17. The maximum allowable regulatory levels, as specified in the Federal Register, March 29, 1990 (55FR 11798), are included in the table for reference. The TCLP test method is designed to identify the likelihood that hazardous concentrations

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of constituents will leach into ground water in a landfill situation. The metals barium, cadmium, chromium, and lead were detected. Lead is the only constituent exceeding its regulatory level (5.0 ppm) based on TCLP analyses. Lead was detected at a concentration of 10.6 ppm in the 2- to 4-foot composite sample. Seven volatiles and two semivolatiles were detected in the samples at concentrations below the regulatory levels. Neither pesticides nor herbicides were detected in either composite sample.

3.3.1.2 Ground-Water Analytical Results

Ground-water samples were obtained from the CSMI Site on three separate dates: August 24, 1989, November 14, 1989, and July 7, 1990. The two rounds of sampling performed during the Phase I RI in 1989 included ground-water samples obtained from monitoring wells MW-1, MW-2, MW-3, and MW-4. The round of ground-water analyses performed on July 7, 1990, during the Phase II RI, included sampling from monitoring wells MW-2, MW-3, MW-5L, MW-5U, and the five TWPs installed in the East Lot. The analytical results indicated elevated total concentrations of VOCs and metals in ground water from the monitoring well locations within the site's East Lot. PCBs were detected in unfiltered samples from monitoring wells MW-3, MW-5U, MW-5L, and TWP-4. The analytical results for the ground-water samples are summarized in Tables 18 through 28.

The types and concentrations of the VOCs detected in ground water are presented in Table 18 (August 1989), Table 21 (November 1989), and Table 24 (July 1990). The number of and total concentrations of VOCs detected in the ground-water samples obtained during the first round of sampling were lower than those observed during the other ground-water sampling events. VOCs were not detected in ground-water samples obtained in August 1989 from monitoring wells MW-1 and MW-2. The ground-water sample and duplicate sample obtained from monitoring well MW-3 contained 34 ppb and 39 ppb, respectively, of trichloroethylene; however, concentrations of other VOCs were relatively low. The total concentration of VOCs in the ground-water sample from monitoring well MW-3 was 50 ppb, with 56 ppb present in the duplicate sample. The total concentration of VOCs in the ground-water sample from monitoring well MW-4 was 10 ppb.

Several additional VOCs that were not detected in the August 1989 sampling were detected in ground-water samples obtained from all four wells during the November 1989 sampling event. These VOCs included acetone, 4-methyl-2-pentanone, and toluene. As was observed in the August 1989 sampling data, the ground-water samples from monitoring well MW-3 contained the greatest number of VOCs (9) at the highest total concentration (75 ppb). The total concentrations of VOCs in the sample and duplicate sample from monitoring well MW-4 were 23 ppb and 29 ppb, respectively.

The July 1990 ground-water sampling concentrated on the TWPs and monitoring wells located in the site's East Lot. Monitoring well MW-2 was included to represent the conditions in ground water hydraulically upgradient of the East Lot. Only methylene chloride (2 ppb) was detected in the sample from monitoring well MW-2.

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Additional VOCs not previously detected in ground-water samples in the East Lot were detected during the July 1990 sampling event. These VOCs included vinyl chloride, trichloroethane, chlorobenzene, ethylbenzene and total xylenes. Vinyl chloride was detected in samples from TWP-1 (21 ppb), TWP-2 (5 ppb), TWP-4 (160 ppb), and TWP-5 (54 ppb). Trichloroethane was detected in samples from TWP-1 (11 ppb) and monitoring well MW-5U (5 ppb). Chlorobenzene (28 ppb) was detected in TWP-1 only. Ethylbenzene (3 ppb) was detected in TWP-4 only, and total xylenes were detected in TWP-4 (11 ppb) and monitoring well MW-5U (6 ppb).

The ground-water samples from TWP-1 and TWP-4 had the highest total concentration of VOCs. The total concentrations of VOCs in the sample and the duplicate sample from TWP-1 were 112 ppb and 104 ppb, respectively. The highest total concentration of VOCs in TWP-4 was 276 ppb. In addition to these VOCs, several semivolatile compounds were also detected in TWP-4. The total concentration of semivolatiles was 125 ppb, which was comprised primarily of benzoic acid (58 ppb), 4-methylphenol (26 ppb), and 2,4-dimethylphenol (24 ppb).

The ground-water samples obtained from monitoring well MW-5U (screened to monitor the upper portion of the water-bearing zone) and MW-5L (screened to monitor the lower portion of the water-bearing zone) indicate differences in the quality of the ground-water present in the East Lot's upper 5 feet and the lower 5 feet of the water-bearing zones. The total VOC concentrations in samples from monitoring wells MW-5U and MW-

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5L were 98 ppb and 69 ppb, respectively. Several VOCs were detected in samples from MW-5U that were not detected in MW-5L. These VOCs included acetone, trichloroethane, 4-methyl-2-pentanone, and total xylenes. Semivolatile compounds were detected in the sample from MW-5U only, at a total concentration of 52 ppb, consisting primarily of 2,4-dimethylphenol (12 ppb) and benzoic acid (29 ppb).

PCB samples were obtained as unfiltered samples during the two Phase I RI sampling events (Table 19 and Table 22) and as both filtered and unfiltered samples during the Phase II RI sampling event (Table 25 and Table 26). Aroclor 1242 (7.5 ppb) was detected in the unfiltered sample obtained from monitoring well MW-3 during the August 1989 sampling event. Aroclors 1242 (10 ppb) and 1254 (1.5 ppb) were detected in the unfiltered sample from monitoring well MW-3 during the November 1989 sampling event. In the unfiltered samples obtained during the July 1990 sampling event, Aroclors 1242 and 1260 were detected in the samples from TWP-4 and monitoring well MW-5U at total concentrations of 22.3 ppb and 8.5 ppb, respectively. Aroclor 1242 was detected in the unfiltered samples from monitoring wells MW-3 and MW-5L at concentrations of 4.2 ppb and 4.9 ppb, respectively. Aroclors 1242 and 1260 were detected at a concentration of 9.4 ppb in the filtered sample from monitoring well MW-3 only.

Filtered and unfiltered ground-water samples were obtained to determine whether the PCBs detected in ground-water samples are actually dissolved in ground water or are PCBs adhering to soil particles suspended in the ground-water samples. The analytical results indicate that the concentrations of PCBs detected in the samples from monitoring wells MW-5U, MW-5L, and TWP-4 represent a total PCB concentration and do not necessarily reflect PCBs dissolved in the ground water.

The results for inorganic chemical constituents detected in the ground-water samples are presented in Table 20 (August 1989), Table 23 (November 1989), and Tables 27 and 28 (July 1990). Sampling conducted in August and November 1989 included hydraulically upgradient monitoring wells MW-1 and MW-2. Analytical results from ground water in these wells can be used as an indicator of the background quality of ground water before it enters the water-bearing zones of the site's East Lot. Based on the results from the August and November 1989 sampling events, several inorganic constituents were detected at higher concentrations in upgradient monitoring well MW-1. These constituents included aluminum, antimony, barium, beryllium, calcium, cobalt, iron, magnesium, and manganese. During these 1989 sampling events, the majority of constituents were detected at the lowest concentrations in samples from monitoring well MW-2. Several constituents were detected at elevated concentrations compared to background in samples from monitoring wells MW-3 and MW-4. Cadmium, copper, lead, mercury, and zinc were detected at elevated concentrations in monitoring well MW-3. Barium, chromium, lead, and potassium were detected at elevated concentrations in monitoring well MW-4.

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The ranges in concentration of inorganic constituents detected during the July 1990 ground-water sampling are generally similar to those detected during the 1989 sampling. As was observed in 1989, ground-water samples obtained from monitoring well MW-3 exhibited the highest concentrations of several constituents, including aluminum, antimony, beryllium, chromium, copper, iron, lead, mercury, vanadium, and zinc. Several constituents were detected at elevated concentrations in the sample from TWP-3, including aluminum, beryllium, chromium, copper, and lead. Concentrations were generally lower in samples from monitoring well MW-2, located hydraulically upgradient of the East Lot, and TWP-1, located at the western edge of the East Lot.

A variation in the concentrations of inorganic constituents was observed in the samples from monitoring wells MW-5U and MW-5L. The majority of constituents were detected at relatively elevated concentrations in MW-5U, including cadmium, copper, lead, and mercury. Cadmium was detected at the highest concentration (819 ppb) in sample MW-5U. Concentrations of constituents in the sample from monitoring well MW-5L were generally lower in comparison to MW-5U and the other samples.

The concentrations of total inorganic constituents in the filtered samples (Table 28) are lower compared to the concentrations of inorganic constituents in the unfiltered samples. Many of the constituents detected at relatively elevated total concentrations in the unfiltered samples were not detected at dissolved concentrations in the filtered samples.

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In addition to the chemical constituent testing, pH, specific conductivity, and temperature were measured in the field during each sampling event. The results from the field measurements are summarized in Table 29. The range of pH measured during the three sampling events was 5.6 to 7.3 The range in specific conductivity was 930 umhos/cm to 2,480 umhos/cm, observed in the same monitoring well, MW-1. The range in ground-water temperature was 16° to 27°C.

In summary, based on the analytical data, ground-water in the eastern portion of the East Lot appears to be effected by site activities and chemical constituents present in the East Lot's soil. In general, a distinctive contaminant plume cannot be identified. The highest concentrations of constituents are observed in ground-water samples obtained from the farthest hydraulically downgradient monitoring wells, MW-3, MW-5U, and MW-5L.

3.3.2 Off-Site Conditions

The Phase II RI field investigation involved soil and sediment sampling at two off-site locations: the Michellotti property to the east of the site and the ponding/culvert area, located in the New Jersey Transit Railroad right-of-way to the northeast of the site. Based on analytical results of this sampling, the subsurface soil on the Michellotti property has not been affected by chemical constituents present in the East Lot. Results from the sediment sample obtained from the outfall pipe in the ponding area indicate the presence of PCBs and other organic compounds.

3.3.2.1 Michellotti Property

A total of seven subsurface borings were completed on the Michellotti property bordering the East Lot. The uppermost (0 to 2 feet) and the lowermost (4 to 6 feet) soil samples were analyzed for PCBs, and the lower sample was also analyzed for TPHs. One composite sample of concrete was analyzed for PCBs. The results from the off-site soil sampling are presented in Table 30.

Based on analytical results, low concentrations of Aroclors 1242 and 1254 were detected in both the upper (0 to 2 feet) and the lower (4 to 6 feet) soil samples from boring location SB-50. The total concentration of PCBs in the 0 to 2-foot sample interval was 3.6 ppm, and 0.23 ppm was encountered in the 4- to 6-foot sample interval. The results from the composite sample of concrete obtained from boring locations SB-51 and SB-52 indicated the presence of 27 ppm of Aroclor 1254.

It appears that PCBs might have migrated, via surface run-off from the southern portion of the East Lot, to a limited area on the Michellotti property. PCBs were not detected in the soil samples obtained from the boring locations adjacent the east portion of the East Lot.

Results for TPHs detected in samples obtained from the bottom sample at each boring location indicate that the elevated concentrations of TPH detected in the East Lot have not migrated onto the Michellotti property. The concentrations of TPHs detected in the off-site borings ranged from less than 11 ppm to

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59 ppm. The highest off-site concentration of TPH (59 ppm) was detected at both boring locations SB-50 and SB-51.

In conclusion, it is possible that, in the past, surface run-off from the East Lot may have migrated to a limited area on the Michellotti property. However, this surface migration path may have been eliminated in 1990 when the chain link fence separating the CSMI Site and the Michellotti property was replaced with a solid steel fence in 1990.

3.3.2.2 Ponding/Culvert Area

Sediment was sampled from the outfall pipe that discharges into an intermittent ponding area near Schroeders Brook. The sediment sample was collected from the upper 6 inches of accumulated sediment within the mouth of the outfall pipe. The results from the sediment sample are presented in Tables 31 (Organics) and 32 (Inorganics).

VOCs, semivolatiles, and PCBs were detected in the sediment sample. Three VOCs, acetone (0.024 ppm), tetrachloroethylene (0.016 ppm), and toluene (0.003 ppm), were detected at relatively low concentrations. A total of 25 semivolatile compounds were detected in the sediment sample. The semivolatile compounds were comprised primarily of PAHs. The total combined concentration of semivolatiles was 30.9 ppm. Two Aroclors, 1242 and 1260, were detected in the sediment sample at concentrations of 12.0 ppm and 2.6 ppm, respectively.

The detected concentration of individual inorganics in the sediment sample was lower than the average range in concentration for individual inorganics detected in soil in the East

Lot. The sediment does not appear to be significantly affected by the migration of inorganics from the East Lot.

In summary, based on the sediment sample analytical results, it does not appear that the sediment discharging into the ponding area, presumably originating in part from the CSMI's on-site storm drain, is significantly affected by surface run-off from the CSMI Site or soil contamination in the site's East Lot.

SECTION 4 - CONCLUSIONS

This report presents the Phase I and Phase II RI work performed at the CSMI Site. The Phase I RI field investigation was performed in July and August 1989, and the Phase II RI field investigation was performed in July 1990. The Phase I RI included a subsurface soil and ground-water investigation in the East Lot, West Lot, and South Lot of the CSMI Site. The Phase II RI included an expanded ground-water investigation in the East Lot, supplemental soil sampling in the East Lot, and an off-site soil investigation on the adjacent Michellotti property, and sediment sampling in the off-site ponding/culvert area.

The following is a summary of conclusions based on the results presented in this document, pertaining to the CSMI Site and the off-site investigation:

1. The East Lot is the primary area of the CSMI Site that has been affected by the scrap metal recycling operations.
2. The upper 4 to 6 feet of overburden in the CSMI Site's East Lot consists of reworked soil and fill material. The fill material consists primarily of fragments of glass, wood, brick, concrete, and metal. Undisturbed soil conditions were observed at several locations in the East Lot at depths below 6 feet.
3. The overburden in the East Lot extends to an average depth of 16 feet. The bedrock is identified as weathered Brunswick sandstone.
4. Saturated soil at the CSMI Site was encountered at depths ranging from 5 to 8 feet during drilling operations. Ground-water

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levels measured in the monitoring wells ranged from 2.07 to 6.09 feet below ground surface.

5. The ground-water flow direction beneath the CSMI Site is to the east.

6. Hydraulic conductivity (K) values calculated from the in-situ slug tests performed in each of monitoring wells and TWPs ranged from 1.3 x 10^{-4} cm/sec to 5.3 x 10^{-5} cm/sec. The average linear velocity ranged from 0.030 ft./day to 0.113 ft./day.

7. The upper 2 feet of soil in the East Lot is continually disturbed and reworked as a result of on-going scrap metal recycling operations. Therefore, analytical results generated during the Phase I and II RIs may not represent the present distribution of constituents in the East Lot's surface soil.

8. Organic and inorganic constituents were detected in a majority of the soil samples collected in the East Lot. These constituents included PCBs, VOCs, semivolatiles (PAHs), TPH, arsenic, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc.

9. A vertical profile of chemical constituents present in soil samples obtained from monitoring well location MW-5L indicated that concentrations of VOCs, semivolatiles, inorganics, and PCBs decreased significantly below the 6-foot sample interval. PCBs were detected in the sample obtained from 12 to 14 feet at a total concentration of 17.4 ppm.

10. TCLP analyses were performed on two composite soil samples collected from the upper 4 feet of soil from the TWP locations. Lead was detected above the regulatory level.

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11. Sediment collected from the on-site storm drain contained low concentrations of several PAHs and Aroclors 1242 and 1254.

12. Based on the ground-water data obtained during three sampling events, concentrations of total VOCs and metals were elevated in the samples from monitoring wells within the East Lot. PCBs were detected in unfiltered samples from monitoring wells MW-3, MW-5U, MW-5L, and TWP-4. Ground water in the eastern portion of the East Lot appeared to be most impacted by site activities.

13. The PCB concentrations in filtered samples were lower, indicating that PCBs have not really been dissolved in ground water.

14. Subsurface soil on the adjacent Michellotti property has not been significantly affected by the chemical constituents present in the CSMI Site's East Lot.

15. The sediment sample obtained from the outfall pipe in the ponding area to the northeast of the CSMI Site contained relatively low concentrations of PAHs and PCBs, indicating that soil and surface water runoff from the site is not substantially contributing to off-site contamination.

16. Selection of an appropriate remedial alternative for soil in the East Lot will address the existing potential for migration of constituents from the East Lot to ground-water and off-site locations.

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TABLES

TABLE 1
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

WELL CONSTRUCTION DETAILS

Well ID.	Ground Elev.	Top of Outer Casing Elev.	Top of Well Elev.	Total Well Depth (fbgl)[1]	Inner[2] Well Material	Well Diameter (inches)	Slot Size	Elev. of Screen Interval	Elev. of Sand Pack Interval	Elev. of Bentonite Seal Interval	Elev. of Grout Interval
MW-1	54.04	54.13	53.97	17.0	S.S.	2.0	10	37.04-48.04	37.04-50.04	50.04-52.04	52.04-54.04
MW-2	54.10	56.42	55.99	16.2	S.S.	2.0	10	37.90-48.80	37.90-50.60	50.60-52.10	52.10-54.10
MW-3	51.80	53.92	53.66	16.0	S.S.	2.0	10	35.80-46.70	35.80-48.30	48.30-49.80	49.80-51.80
MW-4	54.40	55.87	55.45	16.5	S.S.	2.0	10	37.90-48.80	37.90-50.08	50.08-52.30	52.30-54.40
MW-5L	53.05	54.77	54.62	14.8	S.S.	2.0	10	38.25-42.25	38.05-43.05	43.05-45.05	45.05-54.05
MW-5U	53.35	55.91	55.71	9.0	S.S.	2.0	10	44.35-49.35	44.35-50.05	50.05-51.35	51.35-53.35
TWP-1	52.92	--	54.43	10.0	S.S.	2.0	10	42.92-47.92	42.89-48.92	48.92-52.92	--
TWP-2	53.02	--	55.01	10.0	S.S.	2.0	10	43.02-48.02	42.99-49.02	49.02-53.02	--
TWP-3	53.76	--	55.77	10.0	S.S.	2.0	10	43.76-48.76	43.73-49.76	49.76-53.76	--
TWP-4	53.02	--	54.72	10.0	S.S.	2.0	10	43.02-48.02	42.98-49.02	49.02-53.02	--
TWP-5	53.88	--	55.63	10.0	S.S.	2.0	10	43.88-48.88	43.84-49.88	49.88-53.88	--

Notes:

[1]fbgl = feet below ground level.
[2]S.S. = Stainless Steel.
Elevations based on New Jersey Geodetic Control Monument #3841.

TABLE 2

REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SIEVE ANALYSES SUMMARY

	% Gravel (fine to coarse)	% Sand (fine to coarse)	% Silt
East Lot:			
MW-4 (10-12)	0.3	7.0	92.7
MW-4 (14-16)	37.7	31.1	31.2
SB-28 (3-5)	37.0	41.7	21.3
West Lot:			
MW-1 (2-4)	18.4	55.0	26.6
MW-1 (4-6)	0.1	26.6	73.3

Notes:

No distinction is made for fine and coarse gravel and sand.

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TABLE 3
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

GROUND-WATER ELEVATIONS

Well I.D.	Ground Surface Elevation	Date 8-8-89	8-24-89	8-25-89	11-13-89	11-14-89	7-2-90	7-4-90	7-5-90	7-9-90
MW-1	54.04	49.12	49.43	49.45	50.16	50.10	—	—	—	49.29
MW-2	54.10	48.64	49.27	49.65	50.14	50.10	—	49.53	49.47	48.59
MW-3	51.80	48.46	49.00	48.93	49.73	49.72	—	48.97	48.90	48.42
MW-4	54.40	—	48.73	48.73	49.66	49.63	—	48.91	48.80	48.31
MW-5L	53.05	—	—	—	—	—	—	48.84	48.76	48.47
MW-5U	53.35	—	—	—	—	—	—	48.83	48.76	48.36
TWP-1	52.92	—	—	—	—	—	49.15	49.17	49.11	48.45
TWP-2	53.02	—	—	—	—	—	48.87	48.85	48.77	—
TWP-3	53.76	—	—	—	—	—	49.59	49.55	49.45	—
TWP-4	53.02	—	—	—	—	—	49.39	49.15	49.02	—
TWP-5	53.88	—	—	—	—	—	49.46	49.11	48.89	48.48

Notes:

Elevations based on New Jersey Geodetic Control Monument #3841.
— = Not available.

TABLE 4
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

HYDRAULIC CONDUCTIVITY (K) RESULTS

Well I.D.	Date Tested	Hydraulic Conductivity (K)	Screened Interval Elevation
MW-1	Aug. 1989	1.0 x 10-3	37.04 - 48.04
MW-2	Aug. 1989	5.3 x 10-4	37.90 - 48.80
MW-3	Aug. 1989	3.9 x 10-4	35.80 - 46.70
MW-4	Aug. 1989	8.1 x 10-4	37.90 - 48.80
MW-5L	Jul. 1990	2.4 x 10-4	38.25 - 43.25
MW-5U	Jul. 1990	2.9 x 10-4	44.35 - 49.35
TWP-1	Jul. 1990	3.4 x 10-4	42.92 - 47.92
TWP-2	Jul. 1990	1.6 x 10-4	43.02 - 48.02
TWP-3	Jul. 1990	5.3 x 10-5	43.76 - 48.76
TWP-4	Jul. 1990	1.3 x 10-4	43.02 - 48.02
TWP-5	Jul. 1990	2.6 x 10-4	43.88 - 48.88

Notes:

Hydraulic conductivity (K) calculated using Bouwer-Rice Method.
K values reported in cm/sec.

TABLE 5

REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

Frequency of VOCs Detected in Soil Samples
Field and CLP Analyses

Compound	Field Results			CLP Results[2]		
	Detected in (total site)	Detected in (East Lot)[1]	Maximum Conc. (ppm)	Detected in (total site)	Detected in (East Lot)[1]	Maximum Conc. (ppm)
acetone	NA	NA		7/34	6/32	1.5 (SB-14)
benzene	2/50	2/36	<0.4 (SB-31)	15/34	15/32	.33J (SB-25)
2-butanone	NA	NA		12/34	11/32	.055 (SB-18)
carbon disulfide	NA	NA		8/34	8/32	.009 (SB-29)
chlorobenzene	ND	ND		2/34	2/32	.003J (SB-18)
chloroform	ND	ND		5/34	5/32	2.6 (SB-14)
1,1-DCA	1/50	1/36	1.6 (SB-11)	1.34	1.32	.008 (SB-42)
1,1-DCE	ND	ND		1/34	1/32	.003J (SB-28)
1,2-DCE	26/50	26/36	>82 (SB-14)	21/34	21/32	4.9 (SB-22)
1,2-Dichloropropane	ND	ND		1/34	1/32	.015J (SB-33)
ethyl benzene	19/50	19/36	18.0 (SB-24)	15/34	15/32	4.1 (SB-24)
2-hexanone	NA	NA		1/34	1/32	.003J (SB-28)
methylene chloride	ND	ND		9/34	9/32	3.5 (SB-14)
4-methyl-2-pentanone	NA	NA		8/34	8/32	.057 (SB-12)
PCE	28/50	28/36	24.8 (SB-25)	26/34	26/32	87 (SB-25)
styrene	NA	NA		6/34	6/32	.007 (SB-29)
toluene	28/50	28/36	5.4 (SB-17)	17/34	17/32	3.8 (SB-25)
1,1,1-TCA	ND	ND		2/34	2/32	1.4J (SB-11)
TCE	22/50	22/36	2.0 (SB-15)	20/34	20/32	6.4 (SB-25)
vinyl chloride	NA	NA		2/34	2/32	.041J (SB-33)
xylenes	17/50	17/36	>95 (SB-24)	18/34	18/32	23 (SB-24)

Notes:

2/50 — 2: number of sampling locations (boring and monitoring wells) compound was detected in
50: total number of sampling locations (boring and monitoring wells) analyzed.

1 — Borings not included in the East Lot were SB-35, 36, 37, 38, 39, 40, 43, 45-48, MW-1, MW-2 and ST-1.

2 — If compound was detected in sample and blank, that sample was not included.

J — Compound determined to be present at an estimated concentration BMDL.

NA — Compound not analyzed.

ND — Compound analyzed for but not detected.

TABLE 6
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. SB-1 (0-6)	SB-2 (0-2)	SB-2 (2-6)	SB-4 (2-4)	SB-5 (0-2)	SB-5 (4-6)	SB-6 (0-2)	SB-8 (0-2)	SB-8 (4-6)	SB-9 (0-2)
Vinyl Chloride	--	--	--	--	--	--	--	--	-	--
Chloroethane	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	0.002 J	0.004 JB	0.002 B	0.005 JB	--	0.006 B		0.005 B	--	0.006 B
Acetone	0.014 B	0.019 B	0.022 B	0.030 B	0.056 B	0.110 B	0.087 B	0.024 B	0.100 B	0.095 B
Carbon Disulfide	--	--	--	--	--	--	--	--	0.003 J	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene(total)	0.005	0.005 J	--	--	--	0.003 J	--	0.004 J	0.081	0.006
Chloroform	--	--	--	--	--	--	--	--	--	--
2-Butanone	--	--	--	0.003 JB	0.002 J	0.015 B	--	0.004 JB	0.022 B	0.014 B
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--
Trichloroethylene	--	--	--	--	--	0.003 J	--	--	--	0.002 J
Benzene	--	--	--	0.007	--	0.0006 J	--	0.007	0.003 J	0.003 J
4-Methyl-2-Pentanone	--	--	--	--	--	--	--	--	0.014	0.047
2-Hexanone	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	0.008	--	--	--	--	--	0.004 J	0.009	0.007 J
Toluene	--	--	--	0.025 B	--	0.002 JB	--	0.012 B	0.005 JB	0.009 B
Chlorobenzene	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	0.052	--	--	--	0.014	0.012	0.003 J
Styrene	--	--	--	--	--	--	--	0.006	0.006	--
Total Xylenes	--	--	--	0.220	--	--	--	0.041	0.069	0.010

Notes:

All concentrations reported in mg/kg (ppm.)

J = Compound determined to be present at an estimated value less than the minimum detection limit.

B = Compound determined to be present in the blanks as well as in the sample.

TABLE 6
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. SB-9 (4-6)	SB-10 (0-2)	SB-11 (0-2)	SB-11 (5-7)	SB-12 (0-2)	SB-12 (4-6)	SB-13 (0-2)	SB-14 (0-2)	SB-14 (4-6)	SB-15 (0-2)
Vinyl Chloride	--	--	--	--	0.010 J	--	--	--	--	--
Chloroethane	--	--		--	--	--	--	--	--	--
Methylene Chloride	0.003 JB	0.008 B	--	0.005 JB	--	0.006	3.2	3.5	1.7	--
Acetone	0.009 JB	0.230 B	--	0.046 B	0.200 B	0.013 B	1.5	1.5	1.4 J	--
Carbon Disulfide	--	0.003 J	--	--	0.006	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene(total)	--	0.003 J	--	--	0.250	--	--	--	--	-
Chloroform	--	--	--	--	--	--	1.8	2.2	2.6	--
2-Butanone	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--
Trichloroethylene	--	--	--	--	0.023	--	--	0.64 J	--	0.940
Benzene	--	0.002 J	--	--	0.008	--	--	--	--	--
4-Methyl-2-Pentanone	--	0.056	--	0.018	0.057	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	1.4 J	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	0.230	--	--	15.0	0.750 J	7.4
Toluene	--	0.011	--	--	0.019	0.005 J	--	0.760 J	--	0.290 J
Chlorobenzene	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	0.020	--	--	0.008	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--	--
Total Xylenes	--	0.038	1.7 J	--	--	--	--	--	--	--

Notes:

All concentrations reported in mg/kg (ppm.)

J = Compound determined to be present at an estimated value less than the minimum detection limit.

B = Compound determined to be present in the blanks as well as in the sample.

TABLE 6
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. SB-15 (2-4)	SB-17 (0-2)	SB-18 (0-2)	SB-18 (4-6)	SB-19 (0-2)	SB-19 (2-4)	SB-21 (0-2)	SB-21 (2-4)	SB-22 (0-2)	SB-22 (4-6)
Vinyl Chloride	--	--	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	0.006 B	0.004 JB	--	2.0	--	--	--	0.005 JB
Acetone	--	0.950 JB	0.018 B	0.018 B	0.870 JB	--	0.019 B	0.023 B	--	0.140 B
Carbon Disulfide	--	--	0.003 J	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene(total)	--	--	0.014	--	--	--	--	--	4.9	0.026
Chloroform	1.3	--	--	--	1.2	--	--	--	--	--
2-Butanone	--	--	0.003 J	0.005 J	--	--	--	--	--	0.004 JB
1,2-Dichloropropane	--	--	0.006	--	--	--	--	--	--	--
Trichloroethylene	0.240 J	--	6	--	--	--	--	--	1.4	0.005 J
Benzene	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	--	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2.6	0.390 J	0.100	0.011	0.89 J	0.240 J	--	--	28.0	0.012
Toluene	--	--	0.007	0.001 J	--	0.270 J	--	--	0.130 JB	0.002 JB
Chlorobenzene	--	--	0.003 J	--	--	--	--	--	--	--
Ethylbenzene	--	0.230 J	0.003 J	--	--	--	--	--	--	--
Styrene	--	0.520 J	0.002 J	--	--	--	--	--	--	--
Total Xylenes	--	--	0.005 J	--	--	--	--	--	--	--

Notes:

All concentrations reported in mg/kg (ppm.)

J = Compound determined to be present at an estimated value less than the minimum detection limit.

B = Compound determined to be present in the blanks as well as in the sample.

TABLE 6
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. SB-23 (0-2)	SB-24 (0-2)	SB-24 (4-6)	SB-25 (2-4)	SB-25 (4-6)	SB-27 (0-4)	SB-27 (4-6)	SB-28 (0-2)	SB-28 (3-5)	SB-29 (0-2)
Vinyl Chloride	--	--	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	0.023 JB	--	--	--	3.0	--	0.002 JB	--	0.008 B	0.003 J
Acetone	0.130 B	--	--	0.900	1.1 J	0.020 B	0.026 B	0.079 B	0.017 B	0.059 B
Carbon Disulfide	--	--	--	--	--	--	--	0.004 J	--	0.003 J
1,1-Dichloroethene	--	--	--	--	--	--	--	0.003 J	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene(total)	0.049	0.230 J	--	0.230 J	--	--	--	0.190	0.013	0.014
Chloroform	--	--	--	--	1.3	--	--	--	--	--
2-Butanone	0.025 J	--	--	--	--	--	--	0.025	--	0.005 J
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--
Trichloroethylene	0.070	0.610 J	--	0.640	0.690 J	--	--	0.012	0.003 JB	0.015
Benzene	0.005 J	--	--	0.330 J	--	--	--	0.001 J	0.004 JB	0.002 J
4-Methyl-2-Pentanone	--	--	--	--	--	--	--	0.008 J	--	--
2-Hexanone	--	--	--	--	--	--	--	0.003 J	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	0.350	9.1	0.610	87.0	6.4	0.007	--	0.180	0.012	0.060
Toluene	0.012 J	1.4	0.700 J	3.8	0.290 J	--	--	0.002 J	0.009	0.014
Chlorobenzene	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	0.020 J	4.1	3.9	1.1	--	--	--	0.003 J	0.004 JB	0.011
Styrene	--	--	--	--	--	--	--	0.0008 J	0.004 J	--
Total Xylenes	0.039	23.0	23.0	4.9	--	0.014	--	0.005 J	0.015	0.050

Notes:

All concentrations reported in mg/kg (ppm.)

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B = Compound determined to be present in the blanks as well as in the sample.

TABLE 6
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. SB-29 (2-4)	SB-30 (0-2)	SB-30 (2-6)	SB-31 (0-2)	SB-31 (4-6)	SB-32 (0-4)	SB-33 (0-4)	SB-34 (0-2)	SB-34 (4-6)	SB-37 (0-2)
Vinyl Chloride	--	--	--	--	--	--	0.041 J	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--	
Methylene Chloride	--	0.005 JB	0.004 JB	0.005 JB	0.005 JB	0.004 JB	0.032 B	0.014	--	0.003 J
Acetone	0.230 B	0.070 B	0.037 B	0.050 B	0.026 B	0.13 B	0.280 B	0.027	0.009 JB	0.017
Carbon Disulfide	0.009	--	--	0.003 J	0.002 J	--	0.010 J	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	
1,2-Dichloroethene(total)	0.022	0.006 J	0.011	0.320	0.022	0.110	0.560	0.090	--	
Chloroform	--	--	--	--	--	--	--	--	--	
2-Butanone	0.030	0.006 J	0.002 J	0.006 J	0.005 J	0.003 J	0.048 J	--	--	
1,2-Dichloropropane	--	--	--	--	--	--	0.015 J	--	--	-
Trichloroethylene	0.032	0.036	0.009	0.140	0.032	0.013	0.200	0.014	--	-
Benzene	0.003 J	--	--	3 J	0.001 J	0.0009 J	0.007 J	0.004 J	--	
4-Methyl-2-Pentanone	0.017	--	--	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	0.130	0.150	0.100	0.210	0.038	0.190	1.1	0.240	0.003 J	--
Toluene	0.014	--	0.003 J	0.006 J	0.002 J	0.004 J	0.026 J	0.008	--	--
Chlorobenzene	--	--	--	--	--	0.002 J	--	--	--	-
Ethylbenzene	0.009	--	0.002 J	--	--	--	0.008 J	--	--	--
Styrene	0.007	--	--	--	0.001 J	--	--	--	--	
Total Xylenes	0.023	--	0.009	0.007 J	--	0.003 J	0.017 J	--	--	--

Notes:

All concentrations reported in mg/kg (ppm.)

J = Compound determined to be present at an estimated value less than the minimum detection limit.

B = Compound determined to be present in the blanks as well as in the sample.

TABLE 6
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. SB-37 (4-6)	SB-40 (0-2)	SB-40 (4-6)	SB-42 (0-2)	SB-43 (0-2)	SB-43 (4-6)	SS-1	SD-1
Vinyl Chloride	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--
Methylene Chloride	0.007	0.003 JB	0.019 B	0.005 JB	0.009 B	0.005 JB	--	--
Acetone	0.017	--	0.015 B	0.007 JB	0.036	0.012 J	--	--
Carbon Disulfide	--	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	0.008	--	--	--	--
1,2-Dichloroethene(total)	--	--	--	0.012	--	--	--	--
Chloroform	--	--	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--
Trichloroethylene	--	--	--	0.006 J	--	--	--	--
Benzene	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	0.007 J	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	0.016	--	--	--	--
Tetrachloroethylene	--	--	--	0.044	--	--	55.0	--
Toluene	--	--	--	--	--	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--
Total Xylenes	--	--	--	--	--	--	58.0	--

Notes:

All concentrations reported in mg/kg (ppm.)

J = Compound determined to be present at an estimated value less than the minimum detection limit.

B = Compound determined to be present in the blanks as well as in the sample.

TABLE 6
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. MW-2 (0-2)	MW-2 (6-8)	MW-3 (0-2)	MW-3 (2-4)	MW-3 (4-6)	MW-4 (0-2)	MW-4 (4-6)
Vinyl Chloride	--	--	--	--	--		
Chloroethane	--	--	--	--	--		--
Methylene Chloride	0.003 JB	0.003 JB	--	--	--	0.005 JB	0.006 JB
Acetone	0.067 B	0.036 B	0.047 B	0.011 JB	0.012 B		0.019 B
Carbon Disulfide	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--
1,2-Dichloroethene(total)	--	--	--	0.006	--	0.034	0.009
Chloroform	--	--	--	--	--	--	--
2-Butanone	0.007 J	0.003 J	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--
Trichloroethylene	--	--	--	0.008	--	0.010	--
Benzene	--	--	--	--	--	0.002 J	0.003 J
4-Methyl-2 Pentanone	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--	--
Tetrachloroethylene	0.003 J	0.002 J	--	0.067	--	0.100	0.015
Toluene	--	--	0.006	--	--		0.004 J
Chlorobenzene	--	--	--	--	--	--	--
Ethylbenzene	--	--	--		--		0.004 J
Styrene	--	--	--	--	--	--	--
Total Xylenes	--	--	0.007	--	--		0.010

Notes:
All concentrations reported in mg/kg (ppm.)

J = Compound determined to be present at an estimated value less than the minimum detection lim

B = Compound determined to be present in the blanks as well as in the sample.

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TABLE 7
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Compound:	Sample I.D. SB-1 (0-6)	SB-2 (0-2)	SB-2 (2-6)	SB-4 (2-4)	SB-5 (0-2)	SB-5 (4-6)	SB-6 (0-2)	SB-8 (0-2)	SB-8 (4-6)	SB-9 (0-2)
Phenol	--	--	--	--	0.093 J	-	0.36 J	0.15 J		0.24 J
Benzyl alcohol	--	--	--	--	0.089 J	--	0.019 J	--		--
1,4-Dichlorobenzene	--	-	--	--	0.017 J	--	--	0.58		-
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--		--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	0.65		-
2-Methylphenol	--	--	--	--	0.015 J	--	--	--		
4-Methylphenol	--	--	--	--	0.19 J	--	0.078 J	0.071 J		-
Isophorone	--	--	--	--	--	--	--	--		
2,4-Dimethylphenol	--	--	--	--	--	--	--	--		
Benzoic acid	--	--	--	--	--	--	--	--		
2,4-Dichlorophenol	--	--	--	--	--	--	--	--		-
1,2,4-Trichlorobenzene	--	0.008 J	--	--	--	--	0.041 J	1.2		-
Naphthalene	--	--	0.005 J	0.6	0.3 J	0.006 J	1.7	0.51		1.6
2-Methylnaphthalene	--	0.01 J	--	1	0.099 J	--	1.2	0.46		1.3
2,4,5-Trichlorophenol	--	-	--	--	--	--	--	--		
2-Chloronaphthalene	--	--	--	--	--	--	--	--		
Dimethylphthalate	--		--	--	--	--	0.5			
Acenaphthylene	-	--	--	0.22 J	0.038 J	0.003 J	0.54	0.17 J		0.56
Acenaphthene	--	-	--	--	0.079 J	--	1.4	0.54		1.9
Dibenzofuran	--	--	--	--	0.079 J	--	1.5	0.43		2.4
Diethylphthalate	--	--	--	--	--	--	--	--		--
Flourene	--	--	--	0.24 J	0.11 J	--	2.1	0.27 J		3.8
N-Nitrosodiphenylamine (1)	--	--	--	--	--	--	--	--		-
Pentachlorophenol	--	--	--	--	--	--	--	--		-
Phenanthrene	0.22 J	0.027 J	--	0.5	0.73	0.062 J	13	-		9.6
Anthracene	--	0.007 J	--	0.15 J	0.18 J	0.017 J	2.8	3.9		3.5
Di-n-butylphthalate	--	0.028 J	--	0.48 B	--	0.025 JB	7.1 B	0.19 JB		0.29 JB
Flouranthene	0.32 J	0.062 J	0.019 J	0.72 B	0.89 B	0.065 JB	7.3 B	1.4 B		6.5 B
Pyrene	0.52	0.11 J	--	1.1 B	0.68 B	0.066 JB	12 B	2.3 B		9.5 B
Butylbenzylphhtalate	0.088 J	0.036 J	--	0.36 J	--	0.008 J	0.44	0.45		0.27 J
Benzo(a)anthracene	0.15 J	--	--	0.44	0.35 J	--	5.8	1.4		4.7
Chrysene	0.19 J	0.033 J	0.017 J	0.62	0.36 J	0.032 J	4.9	1.5		4.2
Bis(2-Ethylhexyl)phthalate	3.5	0.77	0.33 J	5.6 B	0.47 B	0.62 B	13 B	17 B		7.1 B
Di-n-octylphthalate	0.094 J	--	--	--	--	0.008 J	0.42	2.8		0.52
Benzo(b)flouranthene	0.21 J	0.044 J	-	0.63 B	0.31 JB	0.026 JB	7.5 B	2 B		5.7 B
Benzo(k)flouranthene	0.19 J	0.053 J	--	0.46	0.064 J	0.018 J	1.1	0.37		1.1
Benzo(a)pyrene	0.2 J	0.042 J	--	0.61	0.31 J	0.024 J	4.2	1.3		3.7
Indeno(1,2,3-cd)pyrene	0.12 J	0.018 J	--	0.22 J	0.1 J	--	1.1	0.34 J		0.47
Dibenzo(a,h)anthracene	--	--	--	--	--	-	0.19 J			
Benzo(g,h,i)perylene	0.15 J	--	-	0.77	0.088 J	--	1.1	0.44		0.46

TABLE 7
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Compound:	Sample I.D. SB-9 (4-6)	SB-10 (0-2)	SB-11 (0-2)	SB-11 (5-7)	SB-12 (0-2)	SB-12 (4-6)	SB-13 (0-2)	SB-14 (0-2)	SB-14 (4-6)	SB-15 (0-2)
Phenol	1.2	--	--	--	--	--	--	--	--	
Benzyl alcohol	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	0.66 J	--	--	--	--	--	0.78 J	--	--
1,3-Dichlorobenzene	--	0.17 J	--	--	--	--	--	--	--	
1,2-Dichlorobenzene	--	5.1	--	--	--	--	--	--	--	
2-Methylphenol	0.36 J	--	--	--	--	--	--	--	--	
4-Methylphenol	6.6	0.37 J	--	--	--	--	--	0.37 J	0.15 J	
Isophorone	--	--	--	--	--	--	--	--	--	
2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--	0.41 J
Benzoic acid	15	--	--	--	--	--	--	--	--	
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	
1,2,4-Trichlorobenzene	--	0.23 J	--	--	--	--	--	0.38 J	--	[illegible]
Naphthalene	0.043 J	0.98 J	5.9 J	--	0.75 J	--	0.39 J	1.6 J	0.32 J	[illegible]
2-Methylnaphthalene	0.037 J	2.9	11	--	0.64 J	--	0.27 J	1.9 J	0.37 J	0.71 J
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	
2-Chloronaphthalene	--	--	--	--	--	--	--	--	--	
Dimethylphthalate	--	--	--	--	--			1.2 J		
Acenaphthylene	--	0.27 J	--	--	--	--	0.36 J	--	0.096 J	[illegible]
Acenaphthene	0.03 J	--	--	--	0.89 J	--	0.6 J	2.7 J	0.36 J	0.77 J
Dibenzofuran	--	0.54 J	--	--	0.57 J	0.009 J	0.39 J	1.4 J	0.23 J	0.69 J
Diethylphthalate	--	--	2.3 JB	0.017 JB	--	0.012 JB	--	--	--	--
Flourene	0.05 J	--	--	--	1.6 J	0.016 J	0.65 J	2.6 J	0.45 J	[illegible]
N-Nitrosodiphenylamine (1)	--	--	--	--	--	--	--	--		--
Pentachlorophenol	--	--	--	--	--	--	--	--	--	
Phenanthrene	0.064 J	5.6	--	--	8.6 J	0.12 J	3.7	[illegible]	1.9	[illegible]
Anthracene	0.015 J	--	--	--	2.5 J	0.041 J	1.1 J	4.5	0.62	1.9 J
Di-n-butylphthalate	0.024 JB	2 B	2.4 JB	0.01 JB	3.9 JB	0.03 JB	0.5 J	3 J	0.26 J	36
Flouranthene	0.037 JB	6 B	4.7 JB	--	14 B	0.22 JB	5.7	15	2.2	5.9
Pyrene	0.036 JB	7.9 B	10 B	0.009 JB	17 B	0.24 JB	6.5	23	3.5	8
Butylbenzylphthtalate	--	1.9 B	5.6 JB	--	20 B	0.016 JB	0.42 J	3.8 J	1	2.6 J
Benzo(a)anthracene	--	--	3.6 J	--	6.4 J	0.11 J	2.3 J	7.3	1.2	2.6 J
Chrysene	--	3.8 B	4.6 JB	--	7.5 JB	0.11 JB	2.6 J	8	1.3	2.9 J
Bis(2-Ethylhexyl)phthalate	0.5 B	19 B	41 B	0.34 JB	37 B	0.76 B	18 B	35 B	6.1 B	[illegible] B
Di-n-octylphthalate	--	0.56 JB	1.6 JB	--	0.78 JB	0.024 JB	0.38 J	1.5 J	0.32 J	0.68 J
Benzo(b)flouranthene	0.013 JB	5	6.5 J	--	11	0.15 J	2.4 J	6.3	1.2	[illegible]
Benzo(k)flouranthene	0.008 J	0.52 JB	--		0.96 JB	0.012 JB	2 J	1.6 J	0.31 J	[illegible]
Benzo(a)pyrene	0.013 J	2.6	3 J	--	5 J	0.071 J	2.2 J	[illegible]	[illegible]	[illegible]
Indeno(1,2,3-cd)pyrene	--	0.44 J	0.76 J	--	2.5 J	0.041 J	0.7 J	0.85 J	0.15 J	[illegible]
Dibenzo(a,h)anthracene	--				1 J		0.19 J	--	0.083 J	
Benzo(g,h,i)perylene	--	0.42 J	--		2.2 J	0.038 J	0.65 J	0.65 J	0.12 J	[illegible]

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TABLE 7
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Compound:	Sample I.D.									
	SB-15 (2-4)	SB-17 (0-2)	SB-18 (0-2)	SB-18 (4-6)	SB-19 (0-2)	SB-19 (2-4)	SB-21 (0-2)	SB-21 (2-4)	SB-22 (0-2)	SB-22 (4-6)
Phenol	--	--	--	--	0.29 J	0.71 J	--	--	0.64	0.097 J
Benzyl alcohol	--	--	--	--	--	--	-	--	--	
1,4-Dichlorobenzene	--	--	0.52 J	0.51	0.32 J	--	--	0.04 J	0.8	0.18 J
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	0.061 J	--
1,2-Dichlorobenzene	--	--	0.032 J	--	--	--	--	0.027 J	0.46	0.04 J
2-Methylphenol	--	--	--	--	--	--	--	--	0.052 J	
4-Methylphenol	--	--	0.088 J	0.12 J	0.16 J	0.67 J	--	--	0.32 J	0.074 J
Isophorone	--	--	--	--	0.056 J	--	--	--	--	--
2,4-Dimethylphenol	--	--	--	--	--	--	--	-		
Benzoic acid	--	--	--	--	0.23 J	--	--	--	--	
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	0.16 J	0.047 J
1,2,4-Trichlorobenzene	--	0.14 J	0.2 J	0.18 J	0.27 J	--	--	0.077 J	11	1.6
Naphthalene	0.58 J	1.7	0.38 J	0.37	0.31 J	0.26 J	0.33 J	0.16 J	2.1	0.52
2-Methylnaphthalene	0.52 J	1.8	0.35 J	0.34 J	0.26 J	0.2 J	0.54	0.16 J	1.5	0.44
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	1.2 J	-
2-Chloronaphthalene	--	--	--	--	--	--	--	--	0.86	-
Dimethylphthalate	--	5.7	0.13 J	0.14 J	0.75	--	--	--	-	0.061 J
Acenaphthylene	0.3 J	--	0.11 J	0.094 J	0.22 J	0.25 J	--	--	0.51	0.15 J
Acenaphthene	0.82 J	0.86	0.3 J	0.22 J	0.45 J	0.3 J	0.58	--	1.5	0.33 J
Dibenzofuran	0.54 J	0.85	0.12 J	0.12 J	0.26 J	0.19 J	--	-	0.74	0.21 J
Diethylphthalate	--	--	-	--	--	--	--	-	-	3.7
Flourene	1.2 J	1.3	0.32 J	0.27 J	0.49	0.46 J	22	0.093 J	1.2	0.33 J
N-Nitrosodiphenylamine (1)	--	-	--	0.4	--	--	--	--	-	
Pentachlorophenol	--	--	--	--	--	--	--	-	13	1.9
Phenanthrene	4.8	--	1.3 J	--	1.2	2.3 J	6	1.1	7.7	2.1
Anthracene	2 J	--	0.53 J	--	--	0.68 J	1.5	0.26 J	1.4	0.64
Di-n-butylphthalate	1.4 J	--	0.59 JB	0.35 B	0.38 J	0.77 J	-	-	0.46 B	0.15 JB
Flouranthene	4.5 J	--	3	1.3	0.73	3.3 J	7.7	1.4	4.2 B	2 B
Pyrene	9.3	8.8	3.8	3.2	3.2	4.2 J	6.7	2.8	6.7 B	3.9 B
Butylbenzylphhtalate	2.3 J	1.1	1.1 J	1.1	1.4	0.61 J	--	-	1.3	0.16 J
Benzo(a)anthracene	2 J	4.6	1.4 J	1.4	1.2	1.5 J	4	0.97	4.7	1.5
Chrysene	2.5 J	3.8	1.5 J	1.6	1	1.7 J	3.9	1.2	4.7	1.5
Bis(2-Ethylhexyl)phthalate	14 B	19 B	1 B	11 B	22 B	18 B	4.1	5.6 *	16 B	18 B
Di-n-octylphthalate	0.83 J	2.4	0.71 J	1.2	2.5	0.54 J	--	-	0.87	0.87
Benzo(b)flouranthene	3.6 J	6.1	1.6 J	1.7	2.1	2 J	3.2	0.71	4.1 B	2.6 B
Benzo(k)flouranthene	0.43 J	1.2	0.26 J	2.2	--	0.4 J	3.8		0.76	0.42
Benzo(a)pyrene	1.8 J	3.9	1.2 J	1.2	1.2	1.4 J	3.4		4.3	1.4
Indeno(1,2,3-cd)pyrene	--	1	--	0.85	0.35 J	0.34 J	1.4	--	3.2	0.38
Dibenzo(a,h)anthracene	-	0.26 J		0.31 J	--	-	-		0.53	
Benzo(g,h,i)perylene	--	1.1		0.93	0.46 J		1.5		3.8	[illegible]

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TABLE 7
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Compound:	Sample I.D.									
	SB-23 (0-2)	SB-24 (0-2)	SB-24 (4-6)	SB-25 (0-2)	SB-25 (2-4)	SB-27 (0-4)	SB-27 (4-6)	SB-28 (0-2)	SB-28 (3-5)	SB-28 (5-7)
Phenol	1	--		0.27 J	--	--	--	--	1.2	0.2
Benzyl alcohol	--	--		--	--	--	--	--	--	
1,4-Dichlorobenzene	0.68 J	1.1		--	0.3 J	--	--	3.7	0.93	
1,3-Dichlorobenzene	--	--		--	--	--	--	--	--	-
1,2-Dichlorobenzene	0.4 J	--		--	--	--	--	--	1.2	
2-Methylphenol	--	--		--	--	--	--	--	2.6	
4-Methylphenol	2.4	--		--	0.95	--	--	--	11	0.30 J
Isophorone	--	--		--	--	--	-	--	0.098 J	-
2,4-Dimethylphenol	0.85	--		--	--	--	--	--	1.2	
Benzoic acid	--	--		--	--	--	--	--	--	0.4 JB
2,4-Dichlorophenol	--	--		--	--	--	--	--	--	0.063 J
1,2,4-Trichlorobenzene	--	--		--	--	--	--	0.67 J	0.23 J	--
Naphthalene	0.78	2.7		1.4	1.6	--	--	1.4	0.53	0.11 J
2-Methylnaphthalene	0.42 J	14		2.3	2.9	0.5	0.022 J	1.4	2.4	0.097 J
2,4,5-Trichlorophenol	--	--		--	--	--	--	--	1.3	-
2-Chloronaphthalene	2.1	--		--	--	--	--	--	0.62	-
Dimethylphthalate	--	--		--	--	--	--	--	0.18 J	
Acenaphthylene	1.1	--		--	--	--	--	0.53 J	0.36 J	0.1 J
Acenaphthene	1.2	--		--	--	--	--	1	1.2	0.046 J
Dibenzofuran	--	--		--	--	0.048 J	--	0.6 J	0.83	-
Diethylphthalate	--	--		--	--	--	--	-	0.19 JB	0.11 JB
Flourene	0.93	--		0.38 J	0.68	0.19 J	--	1.2	1.5	--
N-Nitrosodiphenylamine (1)	--	--		--	--	--	--	--	--	
Pentachlorophenol	--	--		--	--	--	--	--		-
Phenanthrene	--	3.5		2	1.5	--	0.014 J	8.2	5.3	0.53
Anthracene	1.6	0.44 J		0.49 J	--	--	--	--	2.4	0.12 J
Di-n-butylphthalate	13 B	0.61 B		0.62 B	0.98 B	--	--	2.5 B	2 B	0.45 B
Flouranthene	11	1.5		2.1	1.4		0.012 J	4.8	4.3	0.79
Pyrene	6.2	3.5 B		5.6 B	4 B	- J	0.028 J	17	13 B	1 B
Butylbenzylphhtalate	2	1.1 B		3.2 B	3.1 B	-	0.012 J	8.3	5.7 B	
Benzo(a)anthracene	5.3	1.3		1.6	1.4	--	--	6.1	5.1	0.47
Chrysene	5.5	0.76 B		1.2 B	--	0.06 J	-	4.5	3.6 B	0.49 B
Bis(2-Ethylhexyl)phthalate	44 B	120 B		30 B	3.3 B	0.81	0.083 J	50 B	36 B	8.8 B
Di-n-octylphthalate	1	0.44 JB		0.91 B	2.4 B	--	--	2	1.6 B	-
Benzo(b)flouranthene	5.5	0.5		1.2	0.51	0.088 J	0.012 J	6.3	2.1	0.27 J
Benzo(k)flouranthene	6.9	0.95		--	0.86	0.042 J	0.013 J	1.6	1.9	0.25 J
Benzo(a)pyrene	5.5	0.54		1.4	1.2	--	0.017 J	5.2	3.6	0.15 J
Indeno(1,2,3-cd)pyrene	2.8	0.75		0.75	0.45		-	2.1	2.7	0.29 J
Dibenzo(a,h)anthracene	--	-		-	--			0.53 J	0.26 J	
Benzo(g,h,i)perylene	4.1	0.71		1.5	0.8	--	-	2.3	3.2	0.37 J

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TABLE 7
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Compound:	Sample I.D. SB-29 (0-2)	SB-29 (2-4)	SB-30 (0-2)	SB-30 (2-6)	SB-31 (0-2)	SB-31 (4-6)	SB-32 (0-4)	SB-33 (0-4)	SB-34 (0-2)	SB-34 (4-6)
Phenol	--	--	--	--	0.31 J	0.54 J	0.44 J	--	0.72 J	0.11 J
Benzyl alcohol	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.28 J	1.4 J	0.14 J	0.43 J	--	2.3	2.6 J	1.5 J	2.5 J	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--	
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	3.6 J	
2-Methylphenol	--	--	--	--	--	--	--	--	--	
4-Methylphenol	--	--	--	--	--	--	--	--	--	[illegible] J
Isophorone	--	--	--	--	--	--	--	--	0.13 J	
2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--	
Benzoic acid	--	--	0.2 J	0.38 J	0.3 J	--	--	--	0.86 J	[illegible]
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	
1,2,4-Trichlorobenzene	1.4	1.1 J	0.43	0.79	6.7	1.5 J	0.95 J	0.73 J	--	
Naphthalene	0.71	0.77 J	0.23 J	1.4	1	1.7	0.73 J	0.78 J	0.81 J	4.4
2-Methylnaphthalene	0.53	0.37 J	0.18 J	0.91	0.72 J	1.3 J	0.74 J	0.71 J	0.98 J	2.3
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	--	--	--	--	5.7 B	--	--	--	--	--
Acenaphthylene	--	0.49 J	0.25 J	0.32 J	0.34 J	0.83 J	--	0.16 J	0.34 J	2.2
Acenaphthene	--	1.1 J	0.19 J	1.5	0.9	1.7	0.57 J	0.61 J	1.1 J	3.1
Dibenzofuran	--	0.71 J	--	0.86	--	1.2 J	0.39 J	--	0.66 J	4.1
Diethylphthalate	0.2 JB	--	--	--	--	0.21 JB	--	--	--	--
Flourene	--	1.5 J	0.23 J	1.6	0.92	2.2	0.73	0.92 J	1 J	5.9
N-Nitrosodiphenylamine (1)	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1.1 B	7.1	2.5 B	11 B	7.1 B	11 B	5.3	5.3 J	4.7	14
Anthracene	--	2.4 J	0.59 B	2.5 B	1.9 B	3.7 B	1.3 J	1.4 J	1.5 J	
Di-n-butylphthalate	1.5 B	1.5 JB	0.25 JB	--	2.2 B	1.4 JB	1.3 JB	1.1 JB	7	0.35 J
Flouranthene	1.2 B	8.2	2 B	6.9 B	6.6 B	11 B	9.2	8.9	6.6	12
Pyrene	1.6 B	7	4.2 B	13 B	6.6 B	10 B	12	11	9.7	16
Butylbenzylphhtalate	--	1.6 J	--	--	1.2 B	2.5 B	1.3 J	120	7.2	0.27 J
Benzo(a)anthracene	1.8 B	3.9 J	1.7 B	5.9 B	7.5 B	10 B	4.5 J	--	3.9 J	8.2
Chrysene	--	4.2 J	--	--	6 B	8 B	4.8	4 J	4.6	6.1
Bis(2-Ethylhexyl)phthalate	39 B	30 B	30 B	16 B	55 B	130 B	26 B	16 B	28 B	4.9 B
Di-n-octylphthalate	0.57	0.9 J	--	0.79	0.29 J	2.7	1 J	0.61 J	2.6 J	0.15 J
Benzo(b)flouranthene	0.72 B	5	1.2 B	4.5 B	4.1 B	11 B	5.8	2.8 J	10	8.4
Benzo(k)flouranthene	0.21 JB	1.3 J	0.14 JB	3.2 B	0.32 JB	--	0.88 J	3.9 J	1.2 J	2.1
Benzo(a)pyrene	1.4 B	3.9 J	1.6 B	4.5 B	2.3 B	13 B	4.1 J	3.1 J	4.6	5.7
Indeno(1,2,3-cd)pyrene	0.47	1.2 J	0.67	1.4	2	4.5	--	0.51 J	1.1 J	0.79
Dibenzo(a,h)anthracene	--	--	--	--	--	--				0.45
Benzo(g,h,i)perylene	1.1	1 J	0.45	1.6	1.7	6.2	--	0.34 J	--	0.63

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TABLE 7
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Compound:	Sample I.D.								
	SB-37 (0-2)	SB-37 (4-6)	SB-40 (0-2)	SB-40 (4-6)	SB-42 (0-2)	SB-43 (0-2)	SB-43 (4-6)	SS-1	SD-1
Phenol	--	--	--	--	--	--	--	--	--
Benzyl alcohol	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	6.7 J
2-Methylphenol	--	--	--	--	--	--	--	--	--
4-Methylphenol	--	--	--	--	--	--	--	--	--
Isophorone	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--
Benzoic acid	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	21	--
Naphthalene	--	--	--	0.042 J	4.2 J	--	--	21	19
2-Methylnaphthalene	--	--	--	0.057 J	7.6 J	--	--	34	87
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	--	--	--	--	--	--	--	--	--
Dimethylphthalate	--	--	--	--	2.6 J	--	--	--	--
Acenaphthylene	0.004 J	--	0.021 J	0.01 J	1.8 J	--	--	--	
Acenaphthene	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	0.008 J	2.5 J	--	--	--	3.8 J
Diethylphthalate	0.012 JB	0.015 JB	--	--	--	--	0.013 JB	--	--
Flourene	--	--	--	0.014 J	--	--	--	13 J	--
N-Nitrosodiphenylamine (1)	--	--	--	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--	--	--	--
Phenanthrene	0.028 J	--	0.13 J	0.12 J	17	0.38 J	0.056 J	--	35
Anthracene	--	--	0.027 J	0.028 J	4.3 J	0.08 J	0.013 J	--	--
Di-n-butylphthalate	0.009 JB	--	--	--	2.4 JB	0.28 JB	0.03 JB	--	7.9 JB
Flouranthene	0.059 JB	--	0.25 JB	0.16 JB	15 B	0.56 JB	0.11 JB	7 JB	--
Pyrene	0.081 JB	--	0.26 JB	0.15 JB	16 B	0.69 JB	0.13 JB	12 JB	7.5 JB
Butylbenzylphhtalate	0.014 JB	--	--	--	5.6 JB	0.83 JB	0.036 JB		--
Benzo(a)anthracene	--	--	0.14 J	0.07 J	6.3 J	--	0.075 J	--	--
Chrysene	0.05 JB	--	0.17 JB	0.083 JB	6.7 JB	0.49 JB	0.097 JB	11 JB	2.6 JB
Bis(2-Ethylhexyl)phthalate	0.79 B	0.4 B	1.2 B	1.4 B	34 B	4.4 B	0.45 B	120 B	29 B
Di-n-octylphthalate	0.01 JB	--	--	0.011 JB	1 JB	0.15 J	--	--	--
Benzo(b)flouranthene	0.069 J		0.15 J	0.07 J	9.5 J	0.98 J	0.068 J	11 J	
Benzo(k)flouranthene	0.009 JB		0.097 JB	0.049 JB	0.93 JB	--	0.014 JB		2.5 JB
Benzo(a)pyrene	0.037 J	--	0.15 J	0.065 J	4.6 J	0.48 J	0.075 J	7.1 J	
Indeno(1,2,3-cd)pyrene	0.03 J		0.12 J	0.044 J	2.3 J	0.17 J	0.038 J	-	
Dibenzo(a,h)anthracene	--	--	--	--	--	--			
Benzo(g,h,i)perylene	0.032 J	--	0.12 J	0.048 J	2 J	0.15 J	0.038 J		

TABLE 7
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Compound:	Sample I.D. MW-2 (0-4)	MW-2 (6-8)	MW-3 (0-2)	MW-3 (2-4)	MW-3 (2-6)	MW-4 (0-2)	MW-4 (4-6)
Phenol	--	--	--	--	--	0.13 J	--
Benzyl alcohol	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	1.4 J	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--
2-Methylphenol	--	--	--	--	--	--	--
4-Methylphenol	--	--	--	--	--	--	--
Isophorone	--	--	--	0.15 J	--	--	--
2,4-Dimethylphenol	--	--	--	--	--	--	--
Benzoic acid	0.049 J	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	0.17 J	0.012 J	4.5	1.1 J
Naphthalene	0.05 J	--	0.32 J	0.21 J	0.017 J	8	3 J
2-Methylnaphthalene	0.03 J	--	0.41 J	0.22 J	0.024 J	4.1	1.7 J
2,4,5-Trichlorophenol	--	--	--	--	--	--	--
2-Chloronaphthalene	--	--	--	--	--	--	--
Dimethylphthalate	0.015 JB	0.11 JB	--	--	--	--	--
Acenaphthylene	0.085 J	--	--	--	--	--	0.3 J
Acenaphthene	0.11 J	--	--	0.12 J	--	--	1.2 J
Dibenzofuran	0.049 J	--	--	--	--	0.4 J	0.79 J
Diethylphthalate	--	--	--	--	--	0.36 JB	--
Flourene	0.11 J	--	0.13 J	0.13 J	--	--	1.8 J
N-Nitrosodiphenylamine (1)	--	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--	--
Phenanthrene	0.81 B	0.011 JB	0.58	1.1	0.034 J	5.1	7.6 J
Anthracene	0.21 JB	--	--	0.24 J	--	1.3 J	1.7 J
Di-n-butylphthalate	0.48 JB	0.013 JB	--	--	--	1.7 JB	1.7 J
Flouranthene	1.5 B	0.01 JB	0.36 J	1.2	0.046 J	5.8 B	8.1 J
Pyrene	0.52 B	--	2.3	1.7	0.17 J	15 B	9.5 J
Butylbenzylphhtalate	--	--	--	--	--	1.6 JB	1.8 J
Benzo(a)anthracene	0.64 B	--	0.27 J	0.98	--	3.8	3.4 J
Chrysene	0.67 B	--	0.49	1	0.046 J	4.9 B	3.9 J
Bis(2-Ethylhexyl)phthalate	2.6 B	0.55 B	4.5	4.9	0.96	18 B	44
Di-n-octylphthalate	--	--	--	--	--	0.66 JB	0.69 J
Benzo(b)flouranthene	0.55 B	--	0.47	0.77	0.098	9.6	2.6 J
Benzo(k)flouranthene	--	--	0.46	--	0.061	0.66 JB	0.43 J
Benzo(a)pyrene	0.67 B	--	0.4 J	1.4	0.071	3.6	2.6 J
Indeno(1,2,3-cd)pyrene	--		0.33 J	--	--	0.41 J	1.6 J
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	0.68	--	--	--	1.6 J

TABLE 7
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES
JULY - AUGUST 1989

Notes:

All concentrations reported in mg/kg, dry weight (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

B - Compound determined to be present in the blanks as well as in the sample.

Samples were analyzed at varying dilution factors. Concentrations are reported for the lowest dilution factors unless identified with a "*".

TABLE 8
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN SOIL SAMPLES
JULY - AUGUST 1990

Compound	Sample I.D.									
	SB-1 (0-6)	SB-2 (0-2)	SB-2 (2-6)	SB-4 (2-4)	SB-5 (0-2)	SB-5 (4-6)	SB-6 (0-2)	SB-7 (0-2)	SB-8 (0-2)	SB-8 (4-6)
AROCLOR-1242	2.1	22	2.6	--	--	--	--	--	8.5	4.9
AROCLOR-1248	--	--	--	--	--	--	--	--	--	
AROCLOR-1254	--	4.7	--	3.2	0.23	--	--	--	--	
AROCLOR-1260	--	--	--	--	--	--	1.5	--	3.8	4.[illegible]

NOTE:

All concentrations reported in mg/kg, (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

No pesticides were found to be present above detection limits in any of the monitoring wells.

TABLE 8
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN SOIL SAMPLES
JULY - AUGUST 1990

Compound	Sample I.D. SB-9 (0-2)	SB-9 (4-6)	SB-10 (0-2)	SB-11 (0-2)	SB-11 (5-7)	SB-12 (0-2)	SB-12 (4-6)	SB-13 (0-2)	SB-14 (0-2)	SB-14 (4-6)
AROCLOR-1242	23	--	15	3600	0.31	86	2.1	140	440	290
AROCLOR-1248	--	--	--	--	--	--	--	--	--	
AROCLOR-1254	4.6	--	4.8 J	--	0.043 J	22	0.43 J	43 J	160 J	110
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--

NOTE:

All concentrations reported in mg/kg, (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

No pesticides were found to be present above detection limits in any of the monitoring wells.

TABLE 8
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN SOIL SAMPLES
JULY - AUGUST 1990

Compound	Sample I.D. SB-15 (0-2)	SB-15 (2-4)	SB-16 (6-8)	SB-17 (0-2)	SB-18 (0-2)	SB-18 (4-6)	SB-19 (0-2)	SB-19 (2-4)	SB-21 (0-2)	SB-21 (2 4)
AROCLOR-1242	690	1300	5.6	4100	61	39	4500	2400	4.7	7.5
AROCLOR-1248	--	--	--	--	--	--	--	--	--	
AROCLOR-1254	350 J	260	1.2	360	19	8.6	1700	800	7.8	5.5
AROCLOR-1260	--	--	--	--	--	--	--	--	--	

NOTE:
All concentrations reported in mg/kg, (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

No pesticides were found to be present above detection limits in any of the monitoring wells.

TABLE 8
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN SOIL SAMPLES
JULY - AUGUST 1990

Compound	Sample I.D. SB-22 (0-2)	SB-22 (4-6)	SB-23 (0-2)	SB-24 (0-2)	SB-25 (0-2)	SB-25 (2-4)	SB-27 (0-4)	SB-27 (4-6)	SB-28 (0-2)	SB-28 (3-5)
AROCLOR-1242	29	28	71	120	94	16	2300	4	44	24
AROCLOR-1248	--	--	--	--	--	--	--	--	--	
AROCLOR-1254	--	--	33	50	130	21	--	--	8.6	29
AROCLOR-1260	42	12	--	--	--	--	--	--	--	

NOTE:
All concentrations reported in mg/kg, (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

No pesticides were found to be present above detection limits in any of the monitoring wells.

TABLE 8
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN SOIL SAMPLES
JULY - AUGUST 1990

Compound	Sample I.D. SB-28 (5-7)	SB-29 (0-2)	SB-29 (2-4)	SB-30 (0-2)	SB-30 (2-6)	SB-31 (0-2)	SB-31 (4-6)	SB-32 (0-4)	SB-33 (0-4)	SB-34 (0-2)
AROCLOR-1242	--	230	--	11	130	110	90	170	47	160
AROCLOR-1248	--	--	--	--	--	--	--	--	--	
AROCLOR-1254	--	60	--	--	--	23	--	46	42	60
AROCLOR-1260	--	--	210	--	--	--	--	--	--	--

NOTE:

All concentrations reported in mg/kg, (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

No pesticides were found to be present above detection limits in any of the monitoring wells.

TABLE 8
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN SOIL SAMPLES
JULY - AUGUST 1990

Compound	Sample I.D.									
	SB-34 (4-6)	SB-37 (0-2)	SB-37 (4-6)	SB-40 (0-2)	SB-40 (4-6)	SB-42 (0-2)	SB-43 (0-2)	SB-43 (4-6)	SB-44 (0-2)	SL-1
AROCLOR-1242	85	--	--	0.21	0.65	99	1.2	--	9.6	-
AROCLOR-1248	--	--	--	--	--	--	--	--	--	40
AROCLOR-1254	39	0.15	0.025	0.15 J	--	40	2	0.12 J	3.9	54
AROCLOR-1260	--	--	--	--	1.1	--	--	--	--	--

NOTE:
All concentrations reported in mg/kg, (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

No pesticides were found to be present above detection limits in any of the monitoring wells.

TABLE 8
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN SOIL SAMPLES
JULY - AUGUST 1990

Compound	Sample I.D. MW-2 (0-4)	MW-2 (6-8)	MW-3 (0-2)	MW-3 (2-4)	MW-3 (4-6)	MW-4 (0-2)	MW-4 (4-6)	SS-1	SD-1
AROCLOR-1242	--	--	--	9	12	130	23	270	57
AROCLOR-1248	1.4	--	--	--	--	--	--	--	--
AROCLOR-1254	0.9	--	2.7	3.9	2.1	31	[illegible]	370	42
AROCLOR-1260	--	--	--	--	--	--	24	--	--

NOTE:

All concentrations reported in mg/kg, (ppm).

J - Compound determined to be present at an estimated value less than the minimum detection limit.

No pesticides were found to be present above detection limits in any of the monitoring wells.

TABLE 9
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D.									
	SB-1 (0-6)	SB-2 (0-2)	SB-2 (2-6)	SB-4 (2-4)	SB-5 (0-2)	SB-5 (4-6)	SB-6 (0-2)	SB-8 (0-2)	SB-8 (4-6)	SB-9 (0-2)
Aluminum	8820	12200	9810	9290	9860	8220	11300	12400	9710	[illegible]
Antimony	5.2 U	127	9.9 B	22.7	16.1	6 U	22.7	35.2	6.1 U	10.1 B
Arsenic	2.1	5.3	2.6	7.7	3.9	1.5 B	6	6.4	3	7.5
Barium	127	537	156	543	79.1	65.6	292	581	139	308
Beryllium	0.86 B	1.1	0.86 B	0.72 B	0.39 B	0.43 B	0.07 U	0.45 B	0.58 B	1 B
Cadmium	3.1	11.5	6.9	52.6	3	0.87 B	7.6	26.5	1.7	16.9
Calcium	15000	33800	24100	16100	84400	2010	71200	35500	6540	35800
Chromium	46.3	210	56.8	52.6	22	14.8	63.5	89.9	27.3	111
Cobalt	9.2 B	14.3	12.3	14.9	4.8 U	4.9 U	13.7	17.3	8.6 B	19.5
Copper	257	899	609	8040	201	16	372	1160	60.8	1540
Iron	24100	34500	28100	33200	14700	8100	37000	50100	13500	42300
Lead	250	1770	704	4210	196	11.9	1480	2090	230	9670
Magnesium	6970	6230	14100	3990	23300	890 B	28400	13100	3630	9750
Manganese	408	459	304	302	263	45.6	409	452	198	415
Mercury	1.3	8.5	3.2	14.7	7.4	0.15	3.6	10.7	3.6	12.7
Nickel	47.5	124	53.5	110	18.3	5.5 B	63	152	18.5	180
Potassium	884 B	1540	901 B	692 B	1410	752 B	1240	1060	1200	1080 B
Selenium	2	2	0.11 U	113	1.5	0.11 U	0.61 B	2.9	5.7	11.2
Silver	1.3 B	6.2	3.3	3.4	0.52 U	0.54 U	2.8	2.9	0.55 U	5.9
Sodium	586 B	1970	819 B	401 B	742 B	304 B	1420	1890	423 B	1160 B
Thallium	0.1 U	0.1 U	0.11 B	0.11 U	0.11 B	0.11 U	0.11 U	0.1 B	0.11 B	0.17 B
Vanadium	24.9	27	30.9	32	19.8	18.2	34.2	40.1	27.9	37
Zinc	1950	1890	1060	4510	226	70.7	852	3560	278	1500
Cyanide	0.56 U	0.96	0.57 U	0.58 U	0.63	0.62 U	2.4	2.2	0.61 U	2.6
Phenol (total)	2.27	3.59	1.25	2.28	1.64	<0.5	4.3	1.83	1.42	3.82

Note:

All concentrations reported in mg/kg, dry weight (ppm).

B - Compound determined to be present in the blanks as well as in the sample.

U - Compound was analyzed for but not deed, concentration listed is detection level.

TABLE 9
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D.									
	SB-9 (4-6)	SB-10 (0-2)	SB-11 (0-2)	SB-11 (5-7)	SB-12 (0-2)	SB-12 (4-6)	SB-13 (0-2)	SB-14 (0-2)	SB-14 (4-6)	SB-15 (0-2)
Aluminum	5770	9880	7370	5200	6960	6540	23100	9060	6070	8760
Antimony	5.9 U	31	104	5.5 U	63.8	5.3 U	32.2	48.3	5.7 U	83.3
Arsenic	0.77 B	22.9	55.6	0.7 B	14.7	26	15.3	15.9	3.6	25.9
Barium	35.6 B	614	691	14.5 B	793	45.2	1070	724	113	1540
Beryllium	0.35 B	0.48 B	0.98 B	0.18 B	0.4 B	0.26 B	0.14 B	0.06 U	0.23 B	0.07 U
Cadmium	0.39 U	57	34.2	0.36 U	16.7	0.35 U	54.3	26.5	2.9	89.5
Calcium	23700	30400	18500	441 B	22100	1200	70800	24100	10600	25500
Chromium	10.3	135	406	9.1	284	11.3	240	329	35.4	275
Cobalt	4.8 U	19.2	42.5	9 B	44	10.1 B	41.2	28.3	5.1 B	47.1
Copper	19.9	894	1420	6	1560	12.8	17200	1290	144	1640
Iron	7200	74800	177000	6090	205000	10900	129000	134000	14100	235000
Lead	8.8	1960	10200	5	4920	29.8	4010	4730	1750	10900
Magnesium	1840	9060	6450	841 B	10100	899 B	31800	6270	3390	5580
Manganese	96.8	910	1090	27.1	1070	42.7	1080	914	129	1310
Mercury	0.15	11.8	25.3	0.05 U	36.8	1.2	33.5	18.6	4.1	88.3
Nickel	8.8 B	110	651	5.4 B	285	6.4 B	262	286	22.4	277
Potassium	433 B	686 B	709 B	476 B	757 B	432 B	2810	888 B	617 B	992 B
Selenium	0.11 U	0.68 B	6.4	0.15 B	14.8	0.4 B	0.54 B	3	0.93 B	0.26 B
Silver	0.53 U	4	21.2	0.49 U	191	0.48 U	11.2	11.2	0.88 B	11.3
Sodium	262 B	1070 B	1140 B	221 B	1600	174 B	6250	1850	270 B	3090
Thallium	0.11 U	0.19 B	0.16 B	0.11 U	0.15 B	0.11 B	0.36 B	0.25 B	0.12 U	0.32 B
Vanadium	14	57.9	37.1	8.9 B	32.8	15.1	70.1	39.1	17	27.2
Zinc	49.6	1840	5520	22.9	4790	60.6	8390	4350	522	8580
Cyanide	0.59 U	1.9	2.4	0.6 U	2.3	0.58 U	3	7.7	3.2	4
Phenol (total)	8.16	4.03	5.6	1.21	4.54	1.74	6.43	4.74	2.02	3.79

Note:

All concentrations reported in mg/kg, dry weight (ppm).

B - Compound determined to be present in the blanks as well as in the sample.

U - Compound was analyzed for but not detected, concentration listed is detection level.

TABLE 9
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D.									
	SB-15 (2-4)	SB-17 (0-2)	SB-18 (0-2)	SB-18 (4-6)	SB-19 (0-2)	SB-19 (2-4)	SB-21 (0-2)	SB-21 (2-4)	SB-22 (0-2)	SB-22 (4-6)
Aluminum	7990	7530	7270	7530	12200	9060	10900	6750	11500	7660
Antimony	45.5	24.9	36.8	35.6	75.4	27.8	16.4	53.7	44.4	12 B
Arsenic	10.4	8.9	8.8	6.8	17.7	11.2	4.6	6.6	18.9	9.6
Barium	545	502	357	406	685	891	165	377	1420	388
Beryllium	0.07 U	0.39 B	0.14 B	0.06 U	0.07 U	0.18 B	0.27 B	0.07 U	1.5	0.71 B
Cadmium	133	9.5	40.4	14.4	35.1	18	8.5	15.8	42.5	22.5
Calcium	33800	51600	69200	15500	22200	44200	43500	30800	21400	16000
Chromium	117	237	150	373	444	185	37.4	819	277	133
Cobalt	27.9	16.6	12.4	12.8	36.8	21	18.6	5.4 B	25.9	15.2
Copper	540	665	662	1460	1600	551	2290	1350	1570	788
Iron	129000	46400	52600	64300	216000	92300	20300	41900	137000	47400
Lead	13500	1570	1600	1710	4320	5970	536	1310	4960	1360
Magnesium	6140	13900	35800	5110	6820	7730	15200	8760	7540	10400
Manganese	851	395	576	492	1290	637	383	443	937	406
Mercury	23.2	4.5	18.5	13.8	27.8	8.1	4.6	2.2	21.8	8.6
Nickel	129	194	131	272	457	233	38.5	66.7	242	142
Potassium	932 B	1050 B	812 B	730 B	705 B	816 B	1030 B	628 B	1110 B	659 B
Selenium	0.11 U	0.27 B	3.6	1.2	2.4	1.2	2.2	0.98 B	2.7	0.97 B
Silver	2.9	3.7	3.3	7.5	12	6	1.6 B	5	9.9	9.8
Sodium	834 B	1550	902 B	1150	1390	893 B	652 B	487 B	1990	723 B
Thallium	0.11 U	0.25 B	0.11 U	0.1 U	0.14 B	0.13 B	0.11 U	0.22 B	0.11 U	0.11 U
Vanadium	13.1	26.4	26.4	22	32.4	30.2	26.1	22.1	72.6	80.7
Zinc	14100	4480	1640	3640	7020	2710	1070	2050	25500	2090
Cyanide	6.2	1.9	2.5	3.5	4.2	1.3	0.59 U	0.77	4.2	3.1
Phenol (total)	3.98	2.36	2.61	2.78	11.4	4.53	5.59	7.98	4.86	[illegible]

Note:

All concentrations reported in mg/kg, dry weight (ppm).

B - Compound determined to be present in the blanks as well as in the sample.

U - Compound was analyzed for but not detected, concentration listed is detection level.

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TABLE 9
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D.									
	SB-23 (0-2)	SB-24 (0-2)	SB-25 (2-4)	SB-27 (0-4)	SB-27 (4-6)	SB-28 (0-2)	SB-28 (3-5)	SB-29 (0-2)	SB-29 (2-4)	SB-30 (0-2)
Aluminum	11200	12200	9450	5970	6100	8700	11200	8950	13500	9700
Antimony	79.2	110	41.6	24.1	5.8 U	153	57.5	57.1	110	58.7
Arsenic	20.2	23.8	7.5	5.2	3.3	24.9	22.8	22.9	14.7	16.8
Barium	1740	464	708	211	68.2	2600	1140	656	2430	1920
Beryllium	0.06 U	0.07 U	0.07 U	0.13 B	0.2 B	0.07 U	0.07 U	0.06 U	0.34 B	0.07 U
Cadmium	44.1	13.9	49.9	17.6	0.39 U	17.1	85.2	31.5	64.7	35.8
Calcium	26500	15900	53800	39700	5870	15400	40300	30700	29700	21000
Chromium	468	645	129	83.3	19.5	746	404	244	488	196
Cobalt	17.3	36.1	20	12.1 B	10.3 B	51.8	25.5	30.8	40.8	18.8
Copper	1160	1250	26100	707	40.1	1930	1390	1260	1560	925
Iron	105000	215000	84100	28300	15100	232000	177000	118000	167000	118000
Lead	8870	11300	3830	887	43.3	4320	6000	1630	6160	5440
Magnesium	7590	5340	8610	21500	2940	6850	11700	16000	14900	5540
Manganese	754	1860	738	318	463	1680	1240	1020	1180	826
Mercury	466	13.8	12.3	10.2	0.23	68.8	78.1	19.2	24.1	13
Nickel	241	393	141	85.3	11	494	673	230	290	167
Potassium	1680	635 B	1050 B	830 B	520 B	1620	867 B	949 B	1680	1720
Selenium	1.1	0.42 B	0.83 B	0.2 B	0.11 U	3.5	31.4	2.3	1.3	1.8
Silver	8.7	7.6	4	22.4	0.64 B	7.4	4.8	3.7	3.9	4.2
Sodium	4760	868 B	1150 B	432 B	204 B	5660	1340	2100	4380	5590
Thallium	0.13 B	0.11 U	0.12 U	0.13 U	0.2 B	0.11 U	0.11 U	0.22 B	0.12 B	0.13 B
Vanadium	38.2	36.9	37.6	30.8	25.3	63.9	71.9	31.9	138	52.5
Zinc	6110	2370	3720	1380	198	6630	7120	2470	8700	6320
Cyanide	3.9	4.8	1.9	1.5	0.58 U	6.2	5.5	1.2	2.9	1.8
Phenol (total)	6.85	4.5	6.6	6.84	3.87	2.12	4.98	3.94	4.71	11.9

Note:

All concentrations reported in mg/kg, dry weight (ppm).

B - Compound determined to be present in the blanks as well as in the sample.

U - Compound was analyzed for but not detected, concentration listed is detection level.

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TABLE 9
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D.									
	SB-30 (2-6)	SB-31 (0-2)	SB-31 (4-6)	SB-32 (0-4)	SB-33 (0-4)	SB-34 (0-2)	SB-34 (4-6)	SB-37 (0-2)	SB-37 (4-6)	SB-40 (0-2)
Aluminum	7310	8620	13900	8020	9940	9120	6730	7930	4780	6770
Antimony	57.5	111	88.9	62	98.1	68	6.3 U	7.8 B	5.7 U	5.4 U
Arsenic	19.6	31.9	31.5	29.5	25	19	1.5 B	0.95 B	0.46 B	2.6
Barium	1110	1680	1690	1400	1040	1590	47.5 B	37.3 B	24.8 B	47.6
Beryllium	0.06 U	0.07 U	0.07 U	0.07 U	0.13 B	0.11 B	0.22 B	0.06 B	0.16 B	[illegible] B
Cadmium	17.4	15.3	21.1	14.9	12.1	80.2	0.42 U	0.4 B	0.38 U	[illegible] U
Calcium	21100	18400	36500	16900	24400	21800	1340	6930	579 B	[illegible]
Chromium	334	513	522	654	1580	353	10.1	16.4	7.6	14
Cobalt	31.1	40.9	40.4	36.7	98.2	57	6.9 B	7.8 B	5.5 B	8.5 B
Copper	1020	1490	2140	2400	1990	1790	10.3	111	6.9	57.2
Iron	130000	203000	212000	232000	243000	213000	6800	15900	6920	12000
Lead	2770	39300	4950	5060	3400	9800	18.7	107	4.8	93.3
Magnesium	5870	5300	10500	6440	7700	7090	835 B	6620	762 B	1450
Manganese	907	1240	1530	2150	1830	1340	89.3	230	40.6	136
Mercury	14.7	27.5	22.6	38.6	22.3	38.7	0.31	0.19	0.08 U	0.14
Nickel	240	409	295	391	1260	430	6.1 B	23.1	6.2 B	11.5
Potassium	912 B	1580	1040 B	1340	1060 B	952 B	363 B	529 B	498 B	291 B
Selenium	7.6	2.7	4.5	2.2	25.1	1 B	0.35 B	2	0.11 U	0.3 B
Silver	4.6	22.5	5	5.5	12.2	20.5	0.57 U	0.45 U	0.51 U	0.48 U
Sodium	1510	3800	2350	3370	1740	2360	176 B	789 B	133 B	235 B
Thallium	0.14 B	0.11 U	0.23 B	0.12 U	0.12 U	0.12 B	0.12 U	0.1 U	0.11 U	0.1 U
Vanadium	45.7	51.9	60.6	82.7	68.8	25.2	13.2	24.9	9.5 B	19.1
Zinc	2740	5810	6690	4120	3810	7040	55.2	143	14.8	84.5
Cyanide	1.8	4.2	3.2	2.7	4.5	3.3	-	0.55 U	0.61 U	0.57 U
Phenol (total)	4.74	6.49	6.88	4.82	4.21	5.16	-	<0.5	<0.5	0.72

Note:
All concentrations reported in mg/kg, dry weight (ppm).

B - Compound determined to be present in the blanks as well as in the sample.

U - Compound was analyzed for but not detected, concentration listed is detection level.

TABLE 9
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. SB-40 (4-6)	SB-42 (0-2)	SB-43 (0-2)	SB-43 (4-6)	SS-1	SD-1
Aluminum	7340	20500	8240	5870	9270	12800
Antimony	5.9 B	43.2	6.3 U	5.8 U	58.7	36.8
Arsenic	2.3	11.3	3.5	2 B	22.3	6.6
Barium	58	632	117	61.5	674	322
Beryllium	0.3 B	0.07 U	0.24 B	0.22 B	0.65 B	0.95 B
Cadmium	1.1 B	20.7	9.6	1.1	35.7	17
Calcium	1800	30700	6240	1420	20400	26700
Chromium	26.9	349	48.2	17.7	436	228
Cobalt	9.1 B	29.1	13.6	15.4	45.4	22.5
Copper	35.6	1940	2430	227	1640	896
Iron	12300	119000	13600	7670	153000	71100
Lead	83.2	2770	1140	191	3020	1260
Magnesium	953 B	7870	2090	987 B	6480	16400
Manganese	86.7	854	202	102	1150	578
Mercury	0.47	11.2	4	0.92	22.3	6.2
Nickel	14.5	305	53.2	12	463	196
Potassium	260 B	837 B	450 B	417 B	1160	1860 B
Selenium	0.34 B	6.3	15.3	1.1 B	6.3	3
Silver	0.52 U	11.4	3	0.61 B	16.6	17.3
Sodium	209 B	1210	366 B	132 B	1060 B	650 B
Thallium	0.11 U	0.11 U	0.15 B	0.11 U	0.11 U	0.21 U
Vanadium	16.2	34.5	15.8	10.9 B	91.6	43
Zinc	176	3490	926	162	4150	1420
Cyanide	0.64 U	2.3	1.5	0.6 U	3.2	1.5
Phenol (total)	1.05	3.79	1.69	0.94	4.01	4.72

Note:

All concentrations reported in mg/kg, dry weight (ppm).

B - Compound determined to be present in the blanks as well as in the sample.

U - Compound was analyzed for but not detected, concentration listed is detection level.

TABLE 9
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES
JULY - AUGUST 1989

Compound	Sample I.D. MW-2 (0-4)	MW-2 (6-8)	MW-3 (0-2)	MW-3 (2-4)	MW-3 (4-6)	MW-4 (0-2)	MW-4 (4-6)
Aluminum	6910	4360	7650	14100	10900	8800	14700
Antimony	5.6 B	5.3 U	7.4 B	24.3	5.7 U	95.2	74.5
Arsenic	3.7	1.7 B	6.1	9.3	4.6	26.5	17.7
Barium	106	48.1	327	875	106	1060	827
Beryllium	0.34 B	0.24 B	0.82 B	1.7	1.1 B	0.07 U	0.23 B
Cadmium	1.5	0.35 U	23.1	22.9	6.4	9.8	77.8
Calcium	9460	888 B	18900	23500	12300	12800	16100
Chromium	21.2	8.2	68.2	146	52.6	954	1070
Cobalt	8 B	13.1	15.8	14.1	4.6 U	46.5	31.9
Copper	68.9	10.5	6420	879	282	2980	5560
Iron	16300	11700	35900	45800	21900	311000	173000
Lead	1410	2.6	1180	979	206	4170	5280
Magnesium	4340	1370	4040	7700	3150	4120	6420
Manganese	242	123	395	495	345	2050	1010
Mercury	0.75	0.06 U	9.1	16	3.4	16.2	12.3
Nickel	19.9	5.4 B	746	95.6	42.5	581	280
Potassium	521 B	452 B	692 B	1050 B	494 B	948 B	989 B
Selenium	0.11 U	0.11 U	1.9 B	0.94 B	0.32 B	2	2.2
Silver	0.58 B	0.48 U	1.6 B	1.7 B	1.6 B	24.6	13
Sodium	240 B	143 B	455 B	1350	258 B	2240	875 B
Thallium	0.21 B	0.11 U	0.29 B	0.11 U	0.21 B	0.11 U	0.11 U
Vanadium	27.6	9.7 B	29.7	51	32.2	36.8	37.3
Zinc	270	21	4330	1980	434	5760	7090
Cyanide	0.58 U	0.59 U	1	0.65	0.59 U	3.1	2.9
Phenol (total)	5.66	0.91	6.38	3.71	2.15	2.9	5

Note:

All concentrations reported in mg/kg, dry weight (ppm).

B - Compound determined to be present in the blanks as well as in the sample.

U - Compound was analyzed for but not detected, concentration listed is detection level.

TABLE 10
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

TOTAL PETROLEUM HYDROCARBONS IN SOIL SAMPLES
JULY - AUGUST 1989

Sample I.D.	Total Petroleum Hydrocarbons (mg/kg)
SB-1 (0-6)	2100
SB-2 (2-6)	1500
SB-3 (4-6)	39
SB-4 (4-6)	1700
SB-5 (4-6)	29
SB-6 (4-6)	840
SB-7 (4-6)	<12
SB-8 (4-6)	2400
SB-9 (4-6)	100
SB-10 (4-6)	<19
SB-11 (5-7)	<27
SB-12 (4-6)	240
SB-13 (4-6)	<16
SB-15 (4-6)	160
SB-16 (6-8)	420
SB-17 (4-6)	<39
SB-18 (4-6)	22000
SB-19 (4-6)	42
SB-21 (2-4)	3600
SB-21 (4-6)	1600
SB-22 (6-8)	<11
SB-23 (4-6)	3100
SB-24 (4-6)	8500
SB-25 (4-6)	120
SB-27 (4-6)	4000
SB-28 (5-7)	300
SB-29 (4-6)	720
SB-30 (2-6)	31000
SB-31 (4-6)	53000
SB-32 (4-6)	1000
SB-33 (0-4)	25000
SB-34 (4-6)	650
SB-35 (4-6)	<24
SB-36 (4-6)	<18

TABLE 10
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

TOTAL PETROLEUM HYDROCARBONS IN SOIL SAMPLES
JULY - AUGUST 1989

Sample I.D.	Total Petroleum Hydrocarbons (mg/kg)
SB-37 (4-6)	<25
SB-38 (4-6)	<24
SB-39 (4-6)	<12
SB-40 (4-6)	340
SB-41 (4-6)	<11
SB-42 (4-6)	18
SB-43 (4-6)	140
SB-44 (4-6)	220
SB-45 (4-6)	18
SB-46 (4-6)	<11
SB-47 (4-6)	<11
SB-48 (4-6)	<11
ST (0-2)	63
ST (2-4)	<24
ST (4-6)	440
MW-2 (6-8)	<14
MW-3 (2-6)	300
MW-4 (4-6)	<36

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TABLE 11

REMEDIAL INVESTIGATION
CURCIO SCRAP METAL, INC. SITE

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	Retention Time Range (Minutes)	Number of Samples Detected In
Aldol Condensation Product	5.82 - 5.84	2
Unknown PAH	24.74 - 27.64	19
Unknown Alkane	20.52 - 27.04	63
Unknown Alkyl Benzene	19.86 - 25.97	62
Unknown Methyl Alkane	22.62 - 23.16	2
Unknown Aromatics	23.02 - 27.00	21
Unknown Hydrocarbons	20.23 - 30.19	26
Unknown Cyclo Alkane	21.81 - 25.77	9
Unknown Cyclic Compounds	19.90 - 25.66	22
Unknown Methyl Alkane	22.62 - 23.16	2
Unknown Methylated Alkane	23.58	1
Unknown Alkene	20.68 - 25.48	2
Unknown Indene	26.20 - 26.52	3
Dihydro Methyl Indene	24.49 - 26.23	5
Ethyl Methyl Benzene	21.14	2
Ethyl Dimethyl Benzene	22.50	1
Dimethyl Ethyl Benzene	21.83 - 24.45	9
Dimethyl Diethylbenzene	25.50	1
Substituted Benzene	24.45 - 26.49	3
Trimethyl Ethyl Benzene	25.08 - 25.06	2
Tetramethyl Benzene	23.83	2
Methyl Propyl Benzene	22.79	1
Trimethyl Benzene	21.05 - 23.54	2
Dichlorobenzene	21.35 - 21.50	3
Benzene, 1,4-Dichloro	24.21 - 24.31	9
Trichlorobenzene Isomer	26.35	1
Substituted Naphthalene	23.55 - 26.49	3
Methyl Naphthalene	25.99 - 26.58	5
Dimethyl Naphthalene	23.96 - 28.03	11
Decahydro Naphthalene	22.53 - 26.07	5
Tetrahydro Naphthalene	25.55 - 26.54	2
Substituted Cyclohexane	21.73 - 25.40	5
Bicyclo Ketone	23.58 - 23.87	2

TABLE 11
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL, INC. SITE

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	Retention Time Range (Minutes)	Number of Samples Detected In
Unknown Ketone	25.66	1
Acetone	4.36	2
cis-1,2-Dichloroethane	6.48 - 6.50	2
Nonane	17.54	1
Decane	20.73	1
Unknown Trimethyl Octane	22.12	1
1,4-Oxathiane	22.65	1
Unknown Siloxane	21.86 - 24.88	3
1,3-Isobenzofurandione	14.29	1
Dodecane	22.86 - 24.60	2
Unknown Methyl Pyridine	23.91	1
2,6-Dimethyl Nonane	23.13	2
1,-Tetracosanol	22.76	1
Limonene	24.02	1
Azulene	24.92	1
Dibenzofuran	25.24	1
Tridecane	26.03	1
Hexadecane	25.43 - 27.35	2
Unknown	6.99 - 28.03	78
Tetrachlorobiphenyl Isomer	22.19 - 23.47	2
2 Propanone	9.58	1
Ethylbenzene Isomer	6.70	1
Hexachlorobiphenyl Isomer	25.71	1
Pentachlorobiphenyl Isomer	23.56	1
Trichlorobiphenyl Isomer	20.87	1
*Ethane, 1,1,2,2-Trichloro-1,2,2-Trifluoro	14.68 - 14.84	8

NOTES:

*Possible lab contamination.
TICs are listed for Phase I and Phase II soil and ground-water samples.

TABLE 12
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

FIELD BLANKS & TRIP BLANKS
VOCs
JULY - AUGUST 1989

Compound	Sample I.D. FB 7/26	TB 7/25	FB 7/27	TB 7/27	FB 7/31	TB 7/31	FB 8/1	TB 8/1	FB 8/2	TB 8/2
Vinyl Chloride										
Chloroethane										
Methylene Chloride	0.003 J	0.002 J	--	--	0.003 J	0.002 J	0.003 J	0.003 J	0.003 J	0.004 J
Acetone	0.044	0.069	--	0.042	0.011	--	--	--	--	0.016
Carbon Disulfide	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene(total)	--	--	--	--	--	--	--	--	--	--
Chloroform	--	--	--	--	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--
Trichloroethylene	--	--	--	--	--	--	--	--	--	--
Benzene	--	--	--	0.003 J	--	--	--	--	--	--
4-Methyl-2-Pentanone	0.006 J	0.003 J	--	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	0.001 J	--	--	--	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--	--
Total Xylenes	--	--	--	--	--	--	--	--	--	--

Notes:

All concentrations reported in mg/kg (ppm).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
-- = Not detected.

TABLE 12
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

FIELD BLANKS & TRIP BLANKS
VOCs
JULY - AUGUST 1989

Compound	Sample I.D.								
	FB 8/3	TB 8/3	FB 8/7	TB 8/7	FB 8/8	TB 8/8	FB 8/9	TB 8/9	FB 8/10
Vinyl Chloride	--	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--
Methylene Chloride	0.003 J	0.009	0.004 J	0.005	0.014	0.018	0.011	0.003 J	0.009
Acetone	0.018	0.010 J	0.009 J	0.009 J	0.019	0.022	0.012		0.011
Carbon Disulfide	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene(total)	--	--	--	--	--	--	--	--	--
Chloroform	--	--	--	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--
Trichloroethylene	--	--	--	--	--	--	--	--	--
Benzene	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	0.004 J	--	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	--	--	--	--	--
Toluene	--	0.001 J	--	--	--	--	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--
Total Xylenes	--	--	--	--	--	--	--	--	--

Notes:

All concentrations reported in mg/kg (ppm).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
-- = Not detected.

TABLE 12
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

FIELD BLANKS
SEMIVOLATILES
JULY - AUGUST 1989

Compound	Sample I.D. FB 7/26	FB 7/27	FB 7/31	FB 8/1	FB 8/2	FB 8/3	FB 8/7	FB 8/8	FB 8/9	FB 8/10
Diethylphthalate	--	--	--	--	--	--	--	--	--	17.00 J
Bis(2-Ethylhexyl)phthalate	--	--	1.00 J	13.00	63.00	--	38.00	71.00	3.00 J	10.00 J

Notes:

All concentrations reported in mg/kg, dry weight (ppm).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
-- = Not detected.

TABLE 12
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

FIELD BLANKS
PCBs/PESICIDE
JULY - AUGUST 1989

Compound	Sample I.D. FB 7/26	FB 7/27	FB 7/31	FB 8/1	FB 8/2	FB 8/3	FB 8/7	FB 8/8	FB 8/9	FB 8/10
AROCLOR-1242	8.4 *	4.4 *	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--

NOTES:

All concentrations reported in ug/kg (ppb).
No pesticides were found to be present above detection limits in any of the monitoring wells or field blanks.
-- = Not Detected
* = Low concentrations were also found in the lab method blank.

TABLE 12
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

FIELD BLANKS
INORGANICS
JULY - AUGUST 1989

Compound	Sample I.D. FB 7/26	FB 7/27	FB 7/31	FB 8/1	FB 8/2	FB 8/3	FB 8/7	FB 8/8	FB 8/9	FB 8/10
Aluminum	0.0706	0.0831	0.0671	0.0791	0.0741	0.112	0.0752	0.0818	0.0706	0.0785
Antimony	--	--	--	--	--	--	--	--	--	--
Arsenic	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--
Calcium	2.02	1.97	1.93	2.04	2.42	2.36	2.13	1.96	2.19	2.27
Chromium	0.0037	--	--	--	0.0033	0.0029	0.0033	0.0042	0.0028	--
Cobalt	--	--	--	--	--	--	--	--	--	--
Copper	--	--	--	--	--	--	--	--	--	--
Iron	0.187	0.174	0.271	0.198	0.922	0.311	0.228	0.164	0.225	0.091
Lead	0.0019	0.0008	--	0.0008	0.003	0.003	0.0004	--	0.0024	--
Magnesium	2.1	2.23	2.24	2.14	2.25	2.18	2.13	1.97	2.17	2.28
Manganese	0.0049	0.0065	0.0061	0.0063	0.0311	0.0054	0.0051	0.0044	0.0058	0.0035
Mercury	0.0004	0.0004	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--	--	0.0051
Potassium	--	--	--	--	--	--	--	--	--	--
Selenium	0.0005	--	--	--	--	--	--	0.0009	0.0005	--
Silver	--	--	--	--	--	--	--	--	--	--
Sodium	4.34	3.88	3.9	4.88	4.64	4.68	4.15	4.52	4.53	4.59
Thallium	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--
Zinc	--	--	--	--	0.0129	--	--	--	--	--
Cyanide	--	--	--	--	--	--	--	--	--	--
Phenol (total)	--	--	--	--	--	--	--	--	--	--

Note:

All concentrations reported in mg/kg, dry weight (ppm).
-- = Not detected.

TABLE 12
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

FIELD BLANKS
PETROLEUM HYDROCARBONS
JULY - AUGUST 1989

Sample I.D.	Total Petroleum Hydrocarbons mg/kg
FB 7/26	<1.2
FB 7/27	<1.0
FB 7/31	<1.0
FB 8/1	<1.1
FB 8/2	<1.1
FB 8/7	<1.0
FB 8/8	<1.0
FB 8/9	<1.1
FB 8/10	<1.0

TABLE 13
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCB ANALYSIS OF MW-5L
JULY 1990

Compound	Sample I.D. MW-5L (0-2)	MW-5L (2-4)	MW-5L (4-6)	MW-5L (6-8)	MW-5L (10-12)	MW-5L (12-14)	MW-5L (14-16)	FIELD BLANK
AROCLOR-1016	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--
AROCLOR-1242	29	24	13	--	--	10	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--
AROCLOR-1260	31	12	6.1	--	--	7.4	--	--
TOTAL	60	36	19.1	--	--	17.4	--	--

Notes:

All concentrations reported in mg/kg, (ppm).
-- = Not detected.

TABLE 14
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs IN SOIL SAMPLES FROM MW-5L AND TWPs
JULY 1990

Compound	Sample I.D. TWP-1 (4-6)	TWP-4 (4-6)	MW-5L (0-2)	MW-5L (2-4)	MW-5L (4-6)	MW-5L (6-8)	MW-5L (10-12)	MW-5L (12-14)	MW-5L (14-16)	Trip Blank	Field Blank
Vinyl Chloride	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	0.013	0.007	--	--	--	--	0.003 J
Acetone	0.007 B	0.004 JB	0.004 JB	--	0.17 B	0.016 B	0.004 J	0.013 B	0.029 B	--	--
Carbon Disulfide	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	--	0.001 J
1,2-Dichloroethene(total)	--	--	--	--	--	--	--	--	--	--	--
Chloroform	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	0.002 J	--	--	--	--	--	--	--	--
Carbon Tetrachloride	--	--	--	--	--	--	--	--	--	--	--
Trichloroethylene	--	--	0.018	0.006	--	--	--	--	--	--	--
Benzene	--	--	0.001 J	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	--	--	--	--	0.019	--	--	--	--	--	--
Tetrachloroethylene	--	--	15	0.14	--	--	--	--	--	--	--
Toluene	--	--	0.002 J	0.001 J	--	0.001 J	--	0.001 J	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--	--	--
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--
TPH	NA	NA	NA	NA	NA	NA	NA	NA	32.7	NA	--

Notes:

All concentrations reported in mg/kg (ppm).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
B = Compound also detected in blank.
TPH = Total petroleum hydrocarbon.
-- = Not detected.
NA = Not analyzed.

TABLE 15
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

SEMIVOLATILES IN SOIL SAMPLES FROM MW-5L
JULY 1990

Compound:	Sample I.D. MW-5L (0-2)	MW-5L (2-4)	MW-5L (4-6)	MW-5L (6-8)	MW-5L (10-12)	MW-5L (12-14)	MW-5L (14-16)	FIELD BLANK
Phenol	0.200 J	--	--	--	--	--	--	--
Benzyl alcohol	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	0.040 J	--	--	--	--	--	--	--
2-Methylphenol	--	--	--	--	--	--	--	--
4-Methylphenol	0.047 J	0.029 J	--	--	--	--	--	--
Isophorone	0.550	--	--	--	--	--	--	--
2,4-Dimethylphenol	--	--	--	--	--	--	--	--
Benzoic acid	0.200 J	--	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.410 J	0.190 J	--	--	--	--	--	--
Naphthalene	0.270 J	0.055 J	--	--	--	--	--	--
2-Methylnaphthalene	0.210 J	0.032 J	0.440 J	--	--	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--
2-Chloronaphthalene	--	--	--	--	--	--	--	--
Dimethylphthalate	--	0.019 J	--	0.015 JB	--	0.006 JB	--	--
Acenaphthylene	0.130 J	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--	--
Dibenzofuran	0.096 J	0.026 J	--	--	--	--	--	--
Diethylphthalate	--	--	--	--	--	--	--	--
Flourene	0.140 J	0.045 J	--	--	--	--	--	--
N-Nitrosodiphenylamine (1)	--	--	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--	--	--
Phenanthrene	1.500	0.310 J	0.960 J	0.020 J	--	0.011 J	--	--
Anthracene	--	0.096 J	0.250 J	--	--	--	--	--
Di-n-butylphthalate	0.280 J	0.150 J	0.250 J	0.035 J	0.023 J	0.015 J	0.045 J	--
Flouranthene	1.100	0.420	0.890 J	0.013 J	--	0.015 J	--	--
Pyrene	2.800	1.030	1.900 J	0.020 J	--	0.017 J	--	--
Butylbenzylphhtalate	1.300	0.380	0.190 J	--	--	--	--	--
Benzo(a)anthracene	0.900	0.280 J	0.720 J	--	--	--	--	--
Chrysene	1.050	0.360 J	0.860 J	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	9.900 B	18.000 B	12.000 B	0.300 JB	0.057 JB	0.075 JB	0.043 JB	0.001 J
Di-n-octylphthalate	0.420 J	0.470	0.440 J	0.015 J	0.035 J	0.095 J	0.018 J	--
Benzo(b)flouranthene	--	0.570	0.890 J	--	--	--	--	--
Benzo(k)flouranthene	2.600	0.330 J	0.580 J	--	--	--	--	--
Benzo(a)pyrene	1.200	0.410	0.790 J	0.007 J	--	--	--	--
Indeno(1,2,3-cd)pyrene	0.590	0.180 J	--	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.620	0.190 J	0.390 J	--	--	--	--	--
TOTAL	26.553	23.572	21.550	0.425	0.115	0.234	0.106	0.001

Notes:

All concentrations reported in mg/kg, dry weight (ppm).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
B = Compound also detected in the blank.
-- = Not detected.

CUR 001 1033

TABLE 16
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN SOIL SAMPLES FROM MW-5L
JULY 1990

Compound	Sample I.D. MW-5L (0-2)	MW-5L (2-4)	MW-5L (4-6)	MW-5L (6-8)	MW-5L (10-12)	MW-5L (12-14)	MW-5L (14-16)	FIELD* BLANK
Aluminum	8330	5600	8470	6320	2050	2620	1660	<0.20
Antimony	54.6	9.32	<7.37	<6.72	<7.13	<6.55	<6.64	<0.06
Arsenic	17.9	6.45	5.36	3.34	1.33	1.1	<1.11	<0.010
Barium	596	184	274	69.4	48	62.9	51.9	<0.010
Beryllium	<0.63	<0.58	<0.61	<0.56	<0.59	<0.55	<0.55	<0.005
Cadmium	22.3	13.9	6.07	<0.56	<0.59	<0.55	<0.55	<0.005
Calcium	18300	153000	4760	768	12800	14900	11400	<1.00
Chromium	257	58.7	20.7	10.3	1.27	1.34	<1.11	<0.010
Cobalt	15.7	<5.77	7.4	5.98	<5.94	<5.46	<5.53	<0.050
Copper	1570	425	272	9.23	4.97	4.03	<2.77	<0.010
Iron	87500	24200	17070	12900	4780	5290	2980	<0.252
Lead	2770	485	640	<5.60	<5.94	<5.46	<5.53	<0.003
Magnesium	10060	85800	2970	2020	2720	2260	1280	<1.00
Manganese	722	371	132	481	218	259	224	<0.015
Mercury	1.82	4.71	1.66	<0.11	<0.11	<0.09	<0.09	<.0002
Nickel	210	141	52.4	11.3	8.29	6.56	10.7	<0.040
Potassium	602	956	561.0	647	411	594	475	<2.00
Selenium	1.96	<0.58	<0.61	<0.56	<0.59	<0.55	<0.55	<0.005
Silver	<1.27	<1.15	<1.23	<1.12	<1.19	<1.09	<1.11	<0.010
Sodium	642	361	440	286	154	182	129	<1.00
Thallium	<1.27	<1.15	<1.23	<1.12	<1.19	<1.09	<1.11	<0.010
Vanadium	62.4	26.3	29.2	19.2	6.56	5.76	<5.53	<0.050
Zinc	2710	1170	982	24.2	22.1	16.3	12.8	0.0233
Cyanide	<1.28	<1.14	<1.30	<1.12	<1.22	<1.10	<1.12	<0.010
Phenol (total)	<0.32	0.31	0.9	<0.28	<0.30	<0.27	<0.28	<0.005

Notes:

All concentrations reported in mg/kg (ppm).
* = Field blank reported in mg/L (ppb).

CUR 001 1034

TABLE 17
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
JULY 1990

Compound	Sample I.D. COMP[1] (0-2)	COMP[1] (2-4)	LEACH BLANK	REGULATORY CRITERIA[2]
VOLATILES:				
Vinyl Chloride	0.140	--	NA	0.2
1,1-Dichloroethylene	--	--	NA	0.7
Chloroform	0.100	--	NA	6
1,2-Dichloroethane	--	--	NA	0.5
Methyl ethyl ketone	--	0.015	NA	200
Carbon Tetrachloride	--	--	NA	0.5
Trichloroethylene	0.005	--	NA	0.5
Benzene	0.001 J	0.001 J	NA	0.5
Chlorobenzene	--	--	NA	100
Tetrachloroethene	0.040	0.004 J	NA	0.7
p-Dichlorobenzene	0.002 J	0.001 J	NA	
SEMIVOLATILES:				
Pyridine	--	--	--	5
1,4-Dichlorobenzene	--	--	--	7.5
1,2-Dichlorobenzene	0.001 J	--	--	
Hexachloroethane	--	--	--	3
Nitrobenzene	--	--	--	2
2,4,6-Trichlorophenol	--	--	--	2
2,4,5-Trichlorophenol	--	--	--	400
2,4-Dinitrotoluene	--	--	--	0.13
2,3,4,6-Tetrachlorophenol	--	--	--	
Hexachlorobenzene	--	--	--	0.13
Pentachlorophenol	--	--	--	100
Total Cresols	0.002 J	--	--	200

Notes:

All concentrations reported in mg/L (ppm).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
-- = Not detected.
NA = Not analyzed.
1 = Soil samples are composites obtained from the TWP locations, 0 to 2 ft. and 2 to 4 ft.
2 = Federal Register (55 FR 11798) March 29, 1990

CUR 001 1035

TABLE 17
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
JULY 1990

Constituent	Sample I.D. COMP[1] (0-2)	COMP[1] (2-4)	LEACH BLANK	REGULATORY CRITERIA[2]
METALS:				
Arsenic	--	--	--	5
Barium	0.863	1.54	--	100
Cadmium	0.192	0.269	--	1
Chromium	--	0.04	--	5
Lead	1.87	10.6	--	5
Mercury	--	--	--	0.2
Selenium	--	--	--	1
Silver	--	--	--	5
PESTICIDES:				
gamma-BHC	--	--	--	
Endrin	--	--	--	0.02
Methoxychlor	--	--	--	10
Toxaphene	--	--	--	0.5
HERBICIDES:				
2,4-D	--	--	--	10
Silvex (2,4,5-TP)	--	--	--	

Notes:

All concentrations reported in mg/L (ppm).
-- = Not detected.
NA = Not analyzed.
1 = Soil samples are composites obtained from the TWP locations, 0 to 2 ft. and 2 to 4 ft.
2 = Federal Register (55 FR 11798) March 29, 1990

TABLE 18
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs & SEMIVOLATILES IN GROUND-WATER SAMPLES
AUGUST 1989

Compound	Sample I.D. MW-1	MW-2	MW-3	MW-3 (DUP)	MW-4
VOLATILES:					
Vinyl Chloride	--	--	--	--	--
Chloroethane	--	--	--	--	--
Methylene Chloride	--	--	--	5	--
Acetone	--	--	--	--	--
Carbon Disulfide	--	--	--	--	--
1,1-Dichloroethene	--	--	5 J	--	8
1,1-Dichloroethane	--	--	--	6	--
1,2-Dichloroethene(total)	--	--	--	--	--
Chloroform	--	--	--	--	--
2-Butanone	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--
Trichloroethylene	--	--	34	39	--
Benzene	--	--	3 J	--	2 J
4-Methyl-2-Pentanone	--	--	--	--	--
2-Hexanone	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--
Tetrachloroethylene	--	--	8	6	--
Toluene	--	--	--	--	--
Chlorobenzene	--	--	--	--	--
Ethylbenzene	--	--	--	--	--
Styrene	--	--	--	--	--
Total Xylenes	--	--	--	--	--
SEMIVOLATILES:					
Bis(2-Ethylhexyl) Phthalate	67 B	52 B	110 B	84 B	38 B

Notes:

All concentrations reported in ug/L (ppb).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
B = Compound determined to be present in the blanks as well as in the sample.

TABLE 19
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN GROUND-WATER SAMPLES
AUGUST 1989

Compound	Sample I.D. MW-1	MW-2	MW-3	MW-3 (DUP)	MW-4
Aroclor - 1016	--	--	--	--	--
Aroclor - 1221	--	--	--	--	--
Aroclor - 1232	--	--	--	--	--
Aroclor - 1242	--	--	5.7	7.5	--
Aroclor - 1248	--	--	--	--	--
Aroclor - 1254	--	--	--	--	--
Aroclor - 1260	--	--	--	--	--

Notes:

All concentrations reported in ug/L (ppb).

No pesticides were found to be present above detection limits in any of the monitoring wells.

-- = Not detected.

TABLE 20
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN GROUND-WATER SAMPLES
AUGUST 1989

Compound	Sample I.D. MW-1	MW-2	MW-3	MW-3 (DUP)	MW-4
Aluminum	63000	8730	38700	23300	48300
Antimony	108	47.1	70.7	70.4	68.2
Arsenic	10.4	2.1	15.1	9.1	33.7
Barium	1600	209	714	446	1150
Beryllium	9.1	0.6	2.6	1.2	3.1
Cadmium	<1.7	<1.7	18.6	16.3	<1.7
Calcium	589000	159000	254000	230000	213000
Chromium	134	76.7	135	88.9	136
Cobalt	53.1	21.2	21.2	<20.9	46
Copper	125	58.4	998	766	210
Iron	108000	14100	71100	41700	81600
Lead	77	11.1	872	721	161
Magnesium	75200	33500	60700	52300	48400
Manganese	13400	8240	2900	2410	7950
Mercury	<0.2	<0.2	7.9	7.8	0.87
Nickel	163	69.1	182	133	147
Potassium	29000	5640	17000	15000	64400
Selenium	<0.5	<0.5	1.4	4.6	4.7
Silver	<2.3	4.82	4.8	3.1	<2.3
Sodium	117000	33700	114000	112000	383000
Thallium	0.5	<0.3	<0.3	<0.3	0.5
Vanadium	81.6	11.6	99.5	66	110
Zinc	339	58.8	1760	1370	368.7
Cyanide	<10	<10	<10	<10	<10
Phenol (total)	19	19	30	25	32

Note:

All concentrations reported in ug/L (ppb).

CUR 001 1039

TABLE 21
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs & SEMIVOLATILES IN GROUND-WATER SAMPLES
NOVEMBER 1989

Compound	Sample I.D. MW-1	MW-2	MW-3	MW-4	MW-4 (DUP)
VOLATILES:					
Vinyl Chloride	-	-	-	-	-
Chloroethane	-	-	-	-	-
Methylene Chloride	-	1 JB	2 JB	2 JB	2 JB
Acetone	7 J	12	12	12	6 J
Carbon Disulfide	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-
1,1-Dichloroethane	-	-	7	5	5
trans-1,2-Dichloroethene	-	-	6	-	-
Chloroform	-	-	-	-	-
2-Butanone	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-
Trichloroethylene	-	-	21	-	-
Benzene	-	-	1 J	3 J	3 J
4-Methyl-2-Pentanone	9 J	12	22	-	12
2-Hexanone	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-
Tetrachloroethylene	-	-	2 J	-	-
Toluene	4 J	4 J	4 J	3 J	3 J
Chlorobenzene	-	-	-	-	-
Ethylbenzene	-	-	-	-	-
Styrene	-	-	-	-	-
Total Xylenes	-	-	-	-	-
SEMIVOLATILES:					
Bis(2-Ethylhexyl) Phthalate	4 J	6 J	4 J	12 J	5 J

Notes:

All concentrations reported in ug/L (ppb).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
B = Compound determined to be present in the blanks as well as in the sample.

CUR 001 1040

TABLE 22
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs/PESTICIDES IN GROUND-WATER SAMPLES
NOVEMBER 1989

Compound	Sample I.D.				
	MW-1	MW-2	MW-3	MW-4	MW-4 (DUP)
Aroclor - 1016	--	--	--	--	--
Aroclor - 1221	--	--	--	--	--
Aroclor - 1232	--	--	--	--	--
Aroclor - 1242	--	--	10	--	--
Aroclor - 1248	--	--	--	--	--
Aroclor - 1254	--	--	1.5	--	--
Aroclor - 1260	--	--	--	--	--

Notes:

All concentrations reported in ug/L (ppb).

No pesticides were found to be present above detection limits in any of the monitoring wells.

-- = Not detected.

CUR 001 1041

TABLE 23
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN GROUND-WATER SAMPLES
NOVEMBER 1989

Compound	Sample I.D. MW-1	MW-2	MW-3	MW-4	MW-4 (DUP)
Aluminum	84800	7560	21800	14000	16300
Antimony	<16.5	<21.1	<34.9	<14.6	<26.2
Arsenic	<9.6	<4.5	<9.2	38.2	38.3
Barium	1450	243	495	774	807
Beryllium	9.7	<1.0	<2.4	<1.0	<1.1
Cadmium	<4.0	<4.0	17.5	<4.0	<4.0
Calcium	334000	162000	237000	176000	179000
Chromium	403	26.6	106	35.6	40.5
Cobalt	86.1	<12	<14.7	<31.9	<31.7
Copper	117	<11.3	716	51.5	43.8
Iron	129000	14300	38100	46700	49900
Lead	103	5.1	610	37.9	33.3
Magnesium	61900	35700	57300	36100	37000
Manganese	5250	11300	2230	5850	5990
Mercury	0.4	0.2	6.7	0.2	<0.15
Nickel	311	46.6	128	62.7	55.6
Potassium	25500	5630	16500	62200	64400
Selenium	<1.0	<1.1	<10.0	<1.0	<1.0
Silver	<2.0	<2.0	<2.7	<2.0	<2.0
Sodium	37300	45100	115000	340000	354000
Thallium	<2.0	<2.1	<2.0	<2.0	<2.0
Vanadium	119	<14.2	62.1	<34.7	<34.9
Zinc	438	34.5	1310	120	92.6
Cyanide	<10.0	<10.0	<10.0	<10.0	<10.0
Phenol (total)	13	11	25	21	19

Note:

All concentrations reported in ug/L (ppb).

TABLE 24
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs & SEMIVOLATILES IN GROUND-WATER SAMPLES
JULY 1990

Compound	Sample I.D.								
	TWP-1	TWP-1D[1]	TWP-2	TWP-3	TWP-4	TWP-5	MW-2	MW-5U	MW-5L
VOLATILES:									
Vinyl Chloride	21	20	5 J	--	160	54	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--
Methylene Chloride	3 J	6	--	--	3 J	4 J	2 J	8	15
Acetone	9 J	8 J	7 J	6 J	50	19	--	26	--
Carbon Disulfide	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	21	14	6	3 J	--	--	--	3 J	8
trans-1,2-Dichloroethene	--	--	--	--	3 J	--	--	--	4 J
Chloroform	--	--	--	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	11	--	--	--	--	--	--	5 J	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--
Trichloroethylene	6	6	--	--	8	--	--	3 J	32
Benzene	4 J	2 J	4 J	--	5 J	--	--	4 J	5 J
4-Methyl-2-Pentanone	--	--	--	--	15	--	--	26	--
2-Hexanone	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	15	19	--	--	9	2 J	--	14	3 J
Toluene	1 J	1 J	1 J	1 J	9	1 J	--	3 J	2 J
Chlorobenzene	21	28	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	3 J	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--
Total Xylenes	--	--	--	--	11	--	--	6 J	--

Notes:

All concentrations reported in ug/L (ppb).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
-- = Not detected.
1 = TWP-1D is a duplicate sample obtained from TWP-1.

TABLE 24
(Cont'd)
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

VOCs & SEMIVOLATILES IN GROUND-WATER SAMPLES
JULY 1990

Compound	Sample I.D. TWP-1	TWP-1D[1]	TWP-2	TWP-3	TWP-4	TWP-5	MW-2	MW-5U	MW-5L
SEMIVOLATILES:									
4-Methylphenol	--	--	--	--	26	--	--	--	--
2,4-Dimethylphenol	--	--	--	--	24	--	--	12 J	--
Benzoic acid	--	--	--	--	58	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	29	--
Naphthalene	--	--	--	--	6 J	6 J	--	--	--
2-Methylnaphthalene	--	--	--	--	3 J	--	--	2 J	--
2-Chloronaphthalene	--	--	--	--	1 J	--	--	2 J	--
Acenaphthene	--	--	1 J	--	--	--	--	--	--
Fluorene	--	--	--	--	1 J	--	--	--	--
Phenanthrene	--	--	--	--	1 J	--	--	1 J	--
Di-n-butylphthalate	1 J	--	1 J	--	--	--	--	--	--
Fluoranthene	--	--	--	1 J	1 J	1 J	--	1 J	--
Pyrene	--	--	--	2 J	1 J	1 J	--	--	--
Chrysene	--	--	--	--	1 J	--	--	--	--
Bis(2-Ethylhexyl) Phthalate	1 J	1 J	2 J	1 J	2 J	2 J	2 J	5 J	--

Notes:

All concentrations reported in ug/L (ppb).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
-- = Not detected.
[1] = TWP-1D is a duplicate sample obtained from TWP-1.

TABLE 25
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs IN UNFILTERED GROUND-WATER SAMPLES
JULY 1990

Compound	Sample I.D. TWP-1	TWP-1D	TWP-2	TWP-3	TWP-4	TWP-5	MW-2	MW-3	MW-5U	MW-5L
Aroclor - 1016	--	--	--	--	--	--	--	--	--	--
Aroclor - 1221	--	--	--	--	--	--	--	--	--	--
Aroclor - 1232	--	--	--	--	--	--	--	--	--	--
Aroclor - 1242	--	--	--	--	19	--	--	4.2	5.7	4.9
Aroclor - 1248	--	--	--	--	--	--	--	--	--	--
Aroclor - 1254	--	--	--	--	--	--	--	--	--	--
Aroclor - 1260	--	--	--	--	3.3	--	--	--	2.8	--

Note:

All concentrations reported in ug/L (ppb).
-- = Not detected.

TABLE 26
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCBs IN FILTERED GROUND-WATER SAMPLES
JULY 1990

Compound	Sample I.D. TWP-1	TWP-1D	TWP-2	TWP-3	TWP-4	TWP-5	MW-2	MW-3	MW-5U	MW-5L
Aroclor - 1016	–	–	–	–	–	–	–	–	–	–
Aroclor - 1221	–	–	–	–	–	–	–	–	–	–
Aroclor - 1232	–	–	–	–	–	–	–	–	–	–
Aroclor - 1242	–	–	–	–	–	–	–	7.6	–	–
Aroclor - 1248	–	–	–	–	–	–	–	–	–	–
Aroclor - 1254	–	–	–	–	–	–	–	–	–	–
Aroclor - 1260	–	–	–	–	–	–	–	1.8	–	–

Note:

All concentrations reported in ug/L (ppb).
– = Not detected.

CUR 001 1046

TABLE 27
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN UNFILTERED GROUND-WATER SAMPLES
JULY 1990

Compound	Sample I.D. TWP-1	TWP-1D	TWP-2	TWP-3	TWP-4	TWP-5	MW-2	MW-3	MW-5U	MW-5L
Aluminum	2560	3320	3410	20000	4040	10700	5690	28100	2540	639
Antimony	<60.0	<60.0	<60.0	<60.0	<60.0	<60.0	<60.0	95.4	<60.0	63.4
Arsenic	<10.0	<10.0	43.6	<10.0	16.3	26.9	<10.0	15.7	12.1	<10.0
Barium	200	196	462	450	147	470	201	679	437	109
Beryllium	<5.00	23.8	17.4	43.2	<5.00	33.6	13.0	<5.00	<5.00	<5.00
Cadmium	<5.00	<5.00	<5.00	6.64	<5.00	<5.00	<5.00	11.0	819	<5.00
Calcium	102000	98400	143000	10900	71900	178000	144000	207000	116000	207000
Chromium	<10.0	11.5	41.2	56.4	<10.0	23.6	31.0	127	18.9	35.6
Cobalt	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Copper	<25.0	<25.0	31.4	124	59.7	52.4	<25.0	549	142	<25.0
Iron	15700	17500	11500	30300	6660	27500	9370	59800	9650	2130
Lead	11.9	11.1	43.8	314	142	80.0	6.40	531	277	14.6
Magnesium	25600	24700	27000	23900	16100	32100	32400	49900	35000	46400
Manganese	1890	1860	2570	1780	285	16800	10300	2200	4330	1360
Mercury	<0.20	<0.20	<0.20	0.36	0.82	<0.43	<0.20	4.01	1.19	<0.20
Nickel	<40.0	<40.0	<40.0	45.7	<40.0	43.3	<40.0	182	43.8	46.2
Potassium	201000	18800	90800	20300	76600	45700	4870	22500	43000	6390
Selenium	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Silver	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Sodium	128000	131000	162000	85700	30200	180000	34300	100000	186000	82000
Thallium	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Vanadium	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	76.2	<50.0	<50.0
Zinc	<20.0	30.5	88.8	443	202	162	29.9	1080	580	29.7
Cyanide (mg/L)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	NA	<10.0	<10.0
Phenol (total)(mg/L)	0.076	0.018	0.026	*<0.050	0.032	0.017	<0.005	NA	0.057	<0.005

Notes:

All concentrations reported in ug/L (ppb) unless otherwise noted.
Cyanide and phenol concentrations reported in mg/L.
* = Direct photometric method used.
NA = Not Analyzed.

TABLE 28
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANIC CONSTITUENTS IN FILTERED GROUND-WATER SAMPLES
JULY 1990

Compound	Sample I.D.									
	TWP-1	TWP-1D	TWP-2	TWP-3	TWP-4	TWP-5	MW-2	MW-3	MW-5U	MW-5L
Aluminum	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Antimony	<60.0	<60.0	<60.0	<60.0	<60.0	<60.0	<60.0	<60.0	<60.0	<60.0
Arsenic	<10.0	<10.0	47.4	<10.0	15.9	23.4	<10.0	<10.0	<10.0	<10.0
Barium	169	159	413	200	100	341	155	126	349	91.7
Beryllium	<5.00	9.92	13.9	<5.00	<5.00	18.6	<5.00	<5.00	<5.00	<5.00
Cadmium	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Calcium	101000	95600	148000	104000	71100	177600	148000	176000	107000	206000
Chromium	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cobalt	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Copper	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Iron	7360	7110	8510	988	<100	13400	2130	2280	1790	590
Lead	<3.00	4.50	3.62	<3.00	<3.00	<3.00	<3.00	<3.00	3.75	7.05
Magnesium	24000	22600	26500	20300	15400	31000	30800	40800	33400	45400
Manganese	2240	2160	2400	1460	1720	17000	9900	1150	3480	1210
Mercury	<0.20	<0.20	0.29	<0.20	<0.20	<0.20	<0.20	0.20	<0.20	<0.20
Nickel	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0
Potassium	19900	17900	88400	18600	79200	43800	4170	14200	43600	5680
Selenium	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Silver	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Sodium	126000	123000	169000	84200	312000	175000	35700	92600	201000	82300
Thallium	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Vanadium	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Zinc	<20.0	<20.0	32.3	47.0	<20.0	49.8	<20.0	<20.0	119	<20.0

Note:

All concentrations reported in ug/L (ppb).

TABLE 29
REMEDIAL INVESTIGATION
CURCIO METAL SCRAP INC. SITE

FIELD PARAMETERS
AUGUST 1989, NOVEMBER 1989, JULY 1990

	MW-1	MW-2	MW-3	MW-4	MW-5L	MW-5U	TWP-1	TWP-2	TWP-3	TWP-4	TWP-5
pH (std units)											
08/1990	5.9	5.6	6.7	6.5	NA	NA	NA	NA	NA	NA	NA
11/1989	6	5.6	6	6	NA	NA	NA	NA	NA	NA	NA
07/1990	NA	6.8	7.2	NA	7.0	7.5	6.9	7.3	6.9	6.1	6.8
Specific Conductivity (umhos/cm)											
08/1990	2480	890	1800	2140	NA	NA	NA	NA	NA	NA	NA
11/1989	930	1000	1620	2400	NA	NA	NA	NA	NA	NA	NA
07/1990	NA	1180	1820	NA	1930	1980	1630	2750	1280	2450	2440
Temperature (C)											
08/1990	27	24	22	21.5	NA	NA	NA	NA	NA	NA	NA
11/1989	19	17	17	16	NA	NA	NA	NA	NA	NA	NA
07/1990	NA	21	19.5	NA	18.5	18.8	19.5	18.2	20.2	18.7	16.8

Note:

NA = Measurement of parameter not available.

TABLE 30
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

PCB AND TOTAL PETROLEUM HYDROCARBON ANALYSES
OFF-SITE SOIL BORINGS
JULY 1990

Compound	Sample I.D. FIELD BLANK	CON-1[1]	SB-50 (0-2)	SB-50 (4-6)	SB-51 (1-3)	SB-51 (3-5)	SB-52 (1-3)	SB-52 (3-5)	SB-53 (0-2)	SB-53 (4-6)	SB-54 (0-2)	SB-54 (4-6)	SB-55 (0-2)	SB-55 (4-6)	SB-56 (0-2)	SB-56 (4-6)
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	1.80	0.10	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	27	1.80	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	0.131	--	--	--	--	--	--	--	--	--	--	--	--
TPH	<10	NA	NA	59	NA	59	NA	36	NA	19	NA	27	NA	<11	NA	<11

Notes:

All concentrations reported in mg/kg (ppm).
-- = Not detected.
NA = Not analyzed.
TPH = Total petroleum hydrocarbon.
[1] = The Con-1 sample is a composite sample of concrete (0 to 1 ft. in depth) from boring locations SB-51 and SB-52.

TABLE 31
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

ORGANICS
POND/CULVERT SEDIMENT
JULY 1990

Compound	Sample I.D.	
	Cul-1	
VOLATILES:		
Acetone	24	
Tetrachloroethylene	16	
Toluene	3	J
SEMIVOLATILES:		
4-Methylphenol	0.05	J
Hexachloroethane	0.033	J
Naphthalene	0.06	J
2-Methylnaphthalene	0.059	J
DimethylPhthalate	0.02	J
Acenapthylene	0.069	J
Acenaphthene	0.1	J
Dibenzofuran	0.069	J
Diethylphthalate	0.025	JB
Fluorene	0.15	J
Phenanthrene	1.7	
Anthracene	0.34	J
Di-n-butylphthalate	0.14	J
Fluoranthene	2.3	
Pyrene	5.4	
Butylbenzylphthalate	0.73	J
Benzo(a)anthracene	1.4	
Chrysene	2.1	
bis(2-Ethylhexyl)phthalate	7.7	B
Di-n-octylphthalate	0.67	J
Benzo(b)fluoranthene	2.8	
Benzo(k)fluoranthene	1.7	
Benzo(a)pyrene	1.7	
Indeno(1,2,3,c,d)pyrene	0.77	J
Benzo(g,h,i)perylene	0.89	J
PCBs:		
Aroclor - 1242	12	
Aroclor - 1260	2.6	

Notes:
All concentrations reported in mg/kg, dry weight (ppm).
J = Compound determined to be present at an estimated value less than the minimum detection limit.
B = Compound detected in blank.

CUR 001 1051

TABLE 32
REMEDIAL INVESTIGATION
CURCIO SCRAP METAL INC. SITE

INORGANICS
POND/CULVERT SEDIMENT
JULY 1990

Compound	Sample I.D.
	Cul-1
Aluminum	12000
Antimony	27.9
Arsenic	5.58
Barium	110
Beryllium	1.12
Cadmium	3.13
Calcium	79000
Chromium	35.9
Cobalt	<10.3
Copper	188
Iron	15800
Lead	3.5
Magnesium	20300
Manganese	305
Mercury	1.62
Nickle	39.4
Potassium	1500
Selenium	1.88
Silver	<2.07
Sodium	400
Thallium	<2.07
Vanadium	35.0
Zinc	466
Cyanide	<2.08
Phenol (total)	<0.52

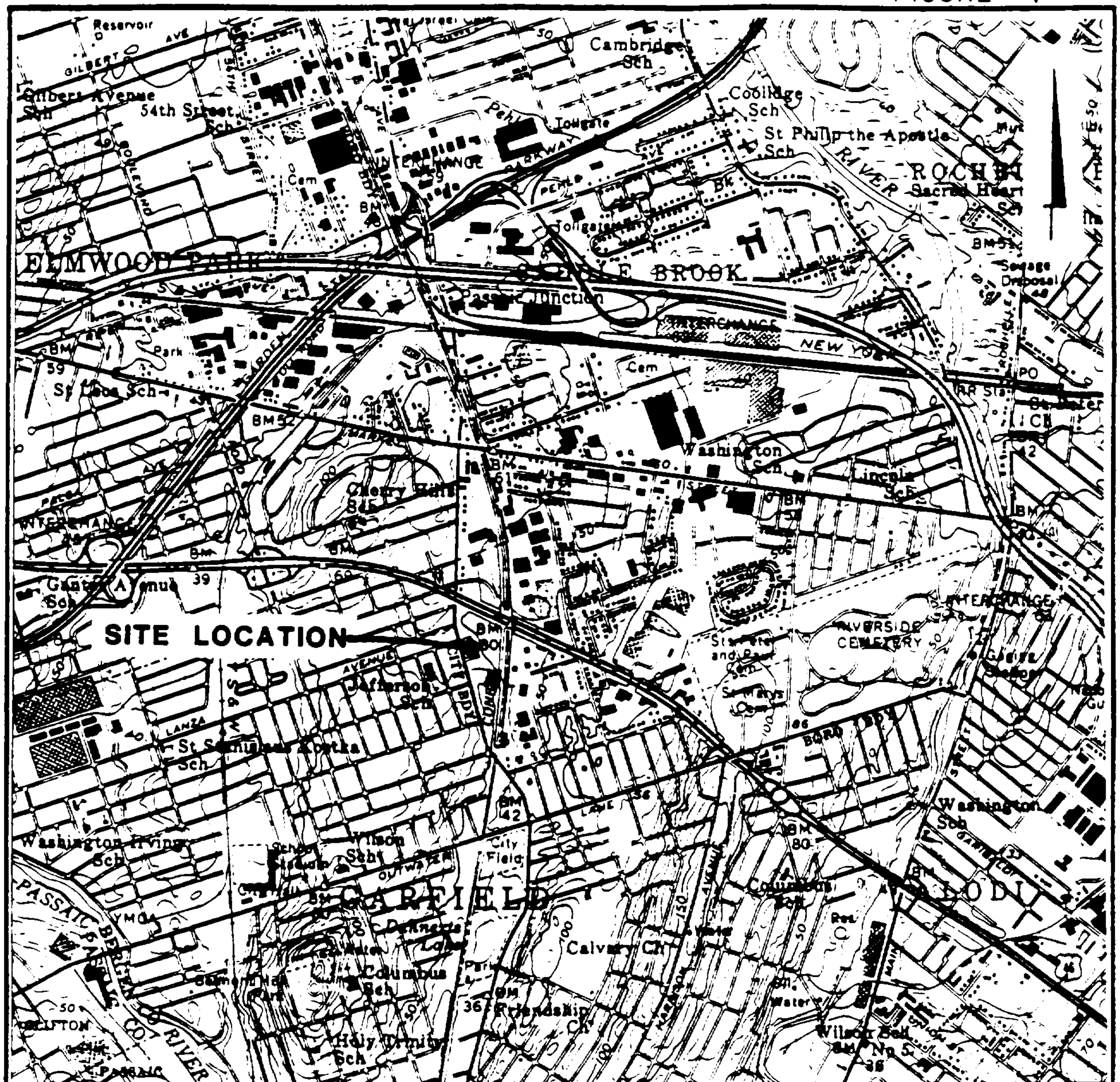
Note:

All concentrations reported in mg/kg, dry weight (ppm).

FIGURES

FIGURES

FIGURE 1



CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

SITE LOCATION MAP

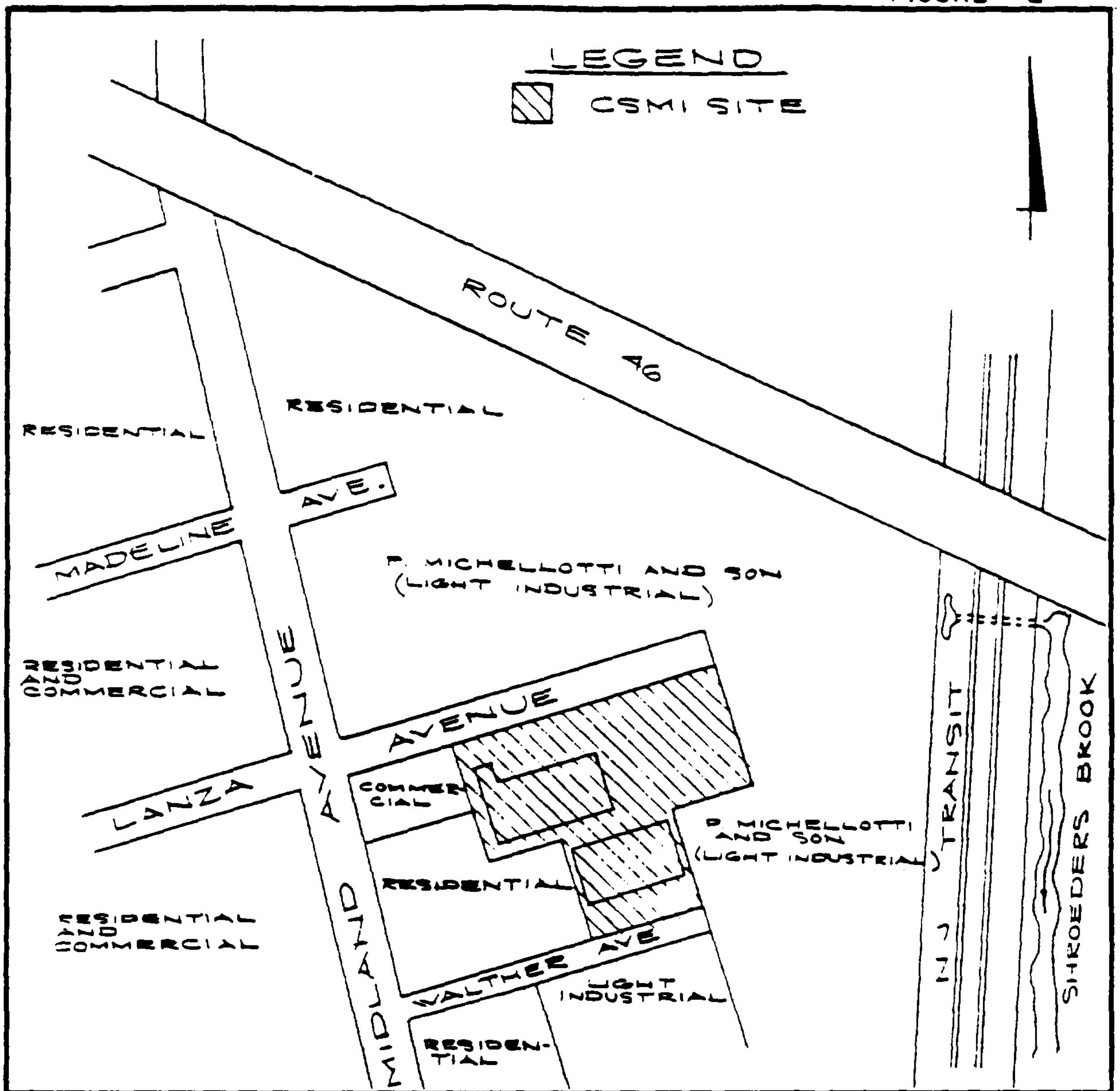
SCALE

2000' 0 2000'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1054

FIGURE 2



CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

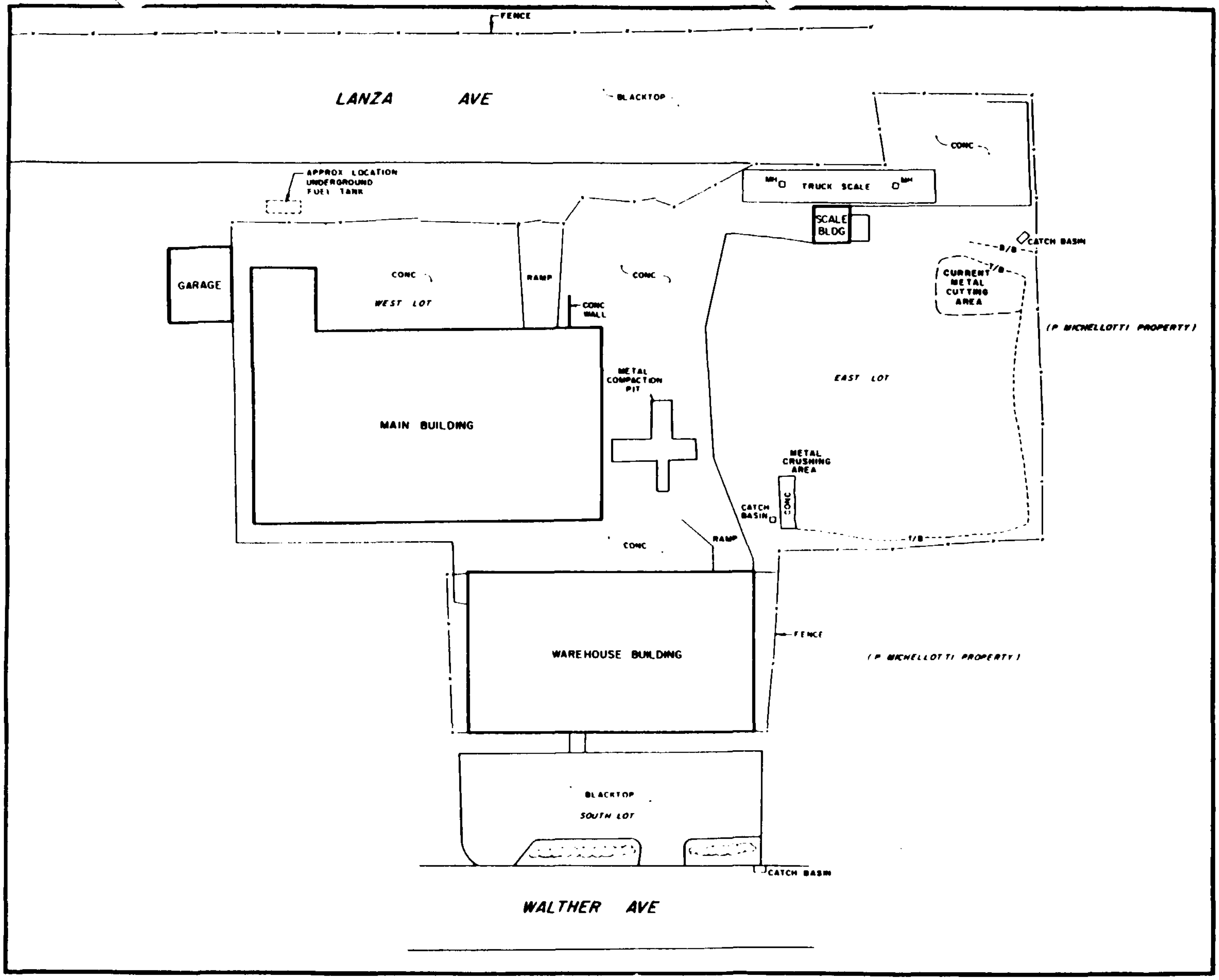
VICINITY OF CSMI SITE

APPROX. SCALE:
0 200'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1055

FIGURE 3



LEGEND

---T/B---	TOP OF BANK (MOUNDED SOIL)
---B/B---	BOTTOM OF BANK (MOUNDED SOIL)
CONC	CONCRETE

CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

CSMI SITE MAP

SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C.
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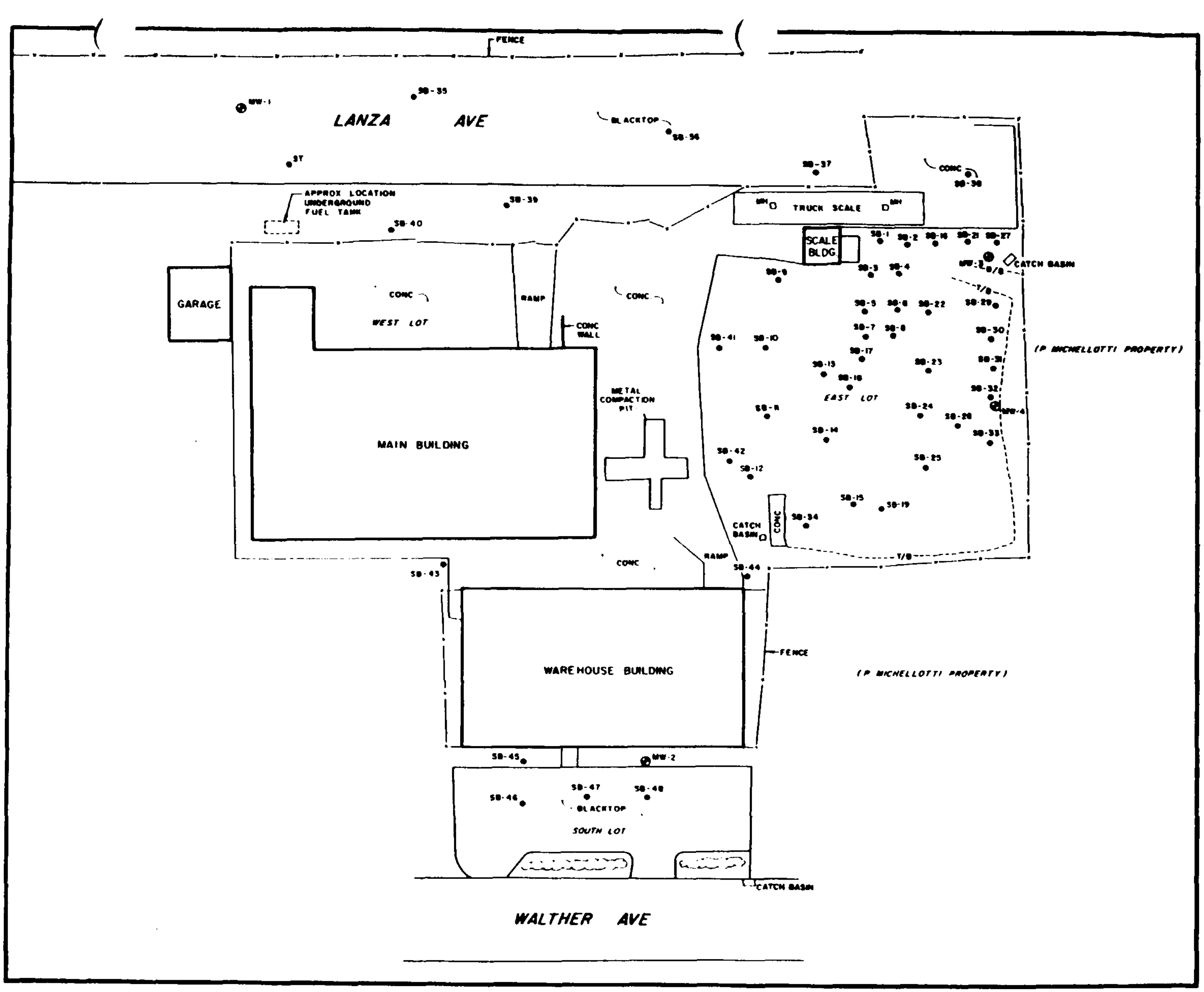
CUR 001 1056

FIGURE



LEGEND

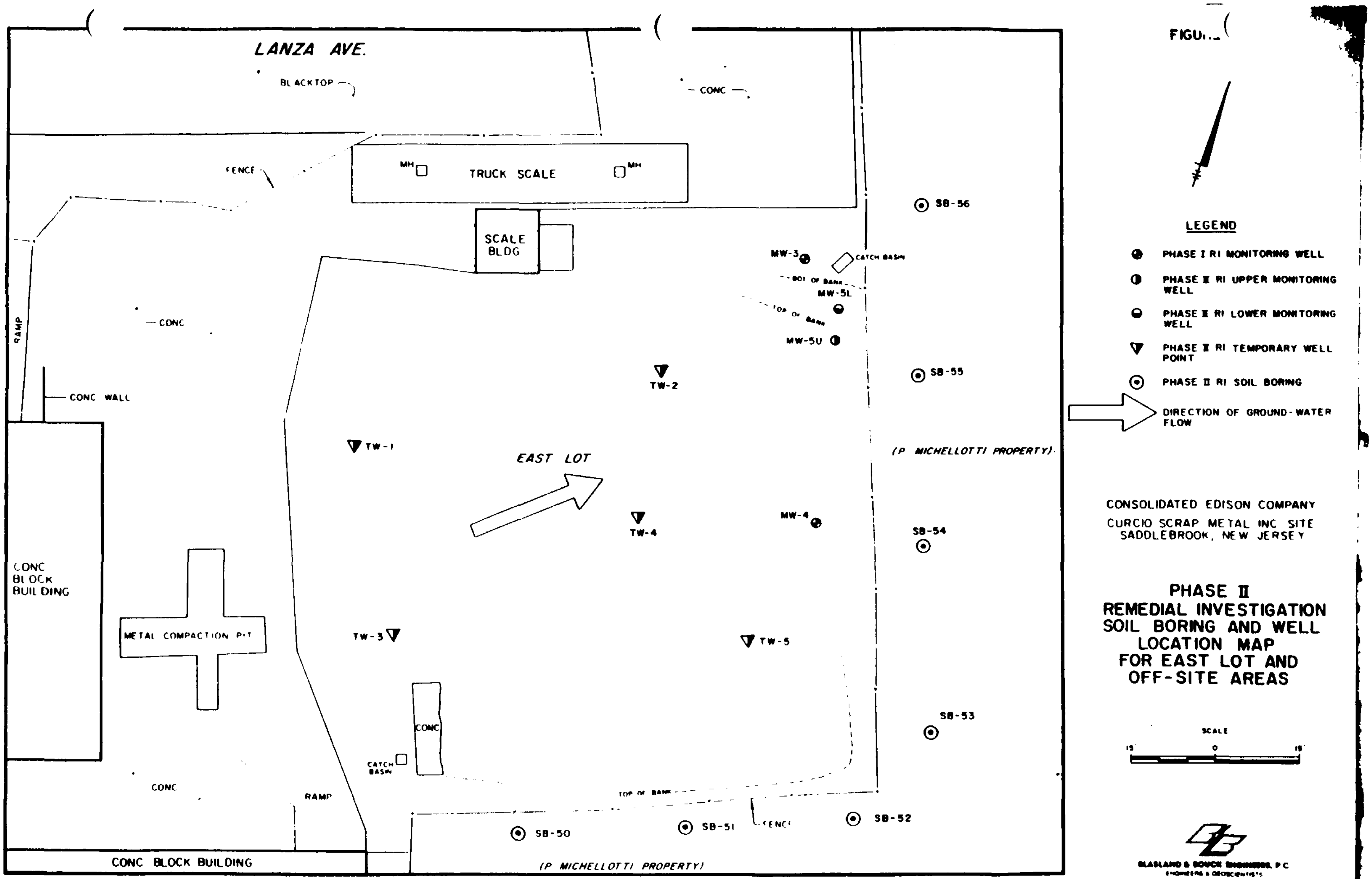
- MONITORING WELL
- SOIL BORING
- ---T/B--- TOP OF BANK
- ---B/B--- BOTTOM OF BANK

CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

PHASE I
REMEDIAL INVESTIGATION
SOIL BORING AND WELL
LOCATION MAP

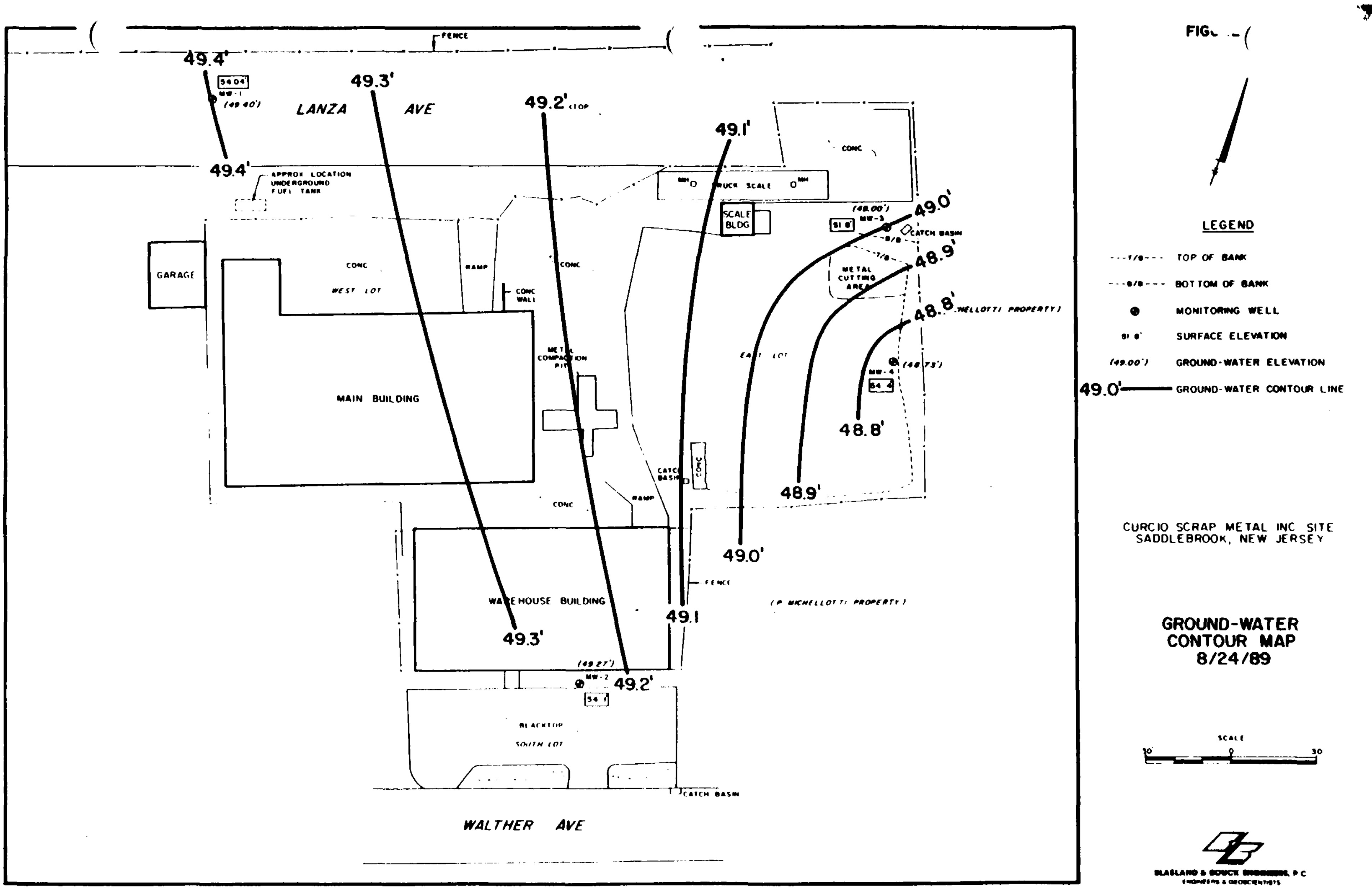
SCALE
30' 0 30'

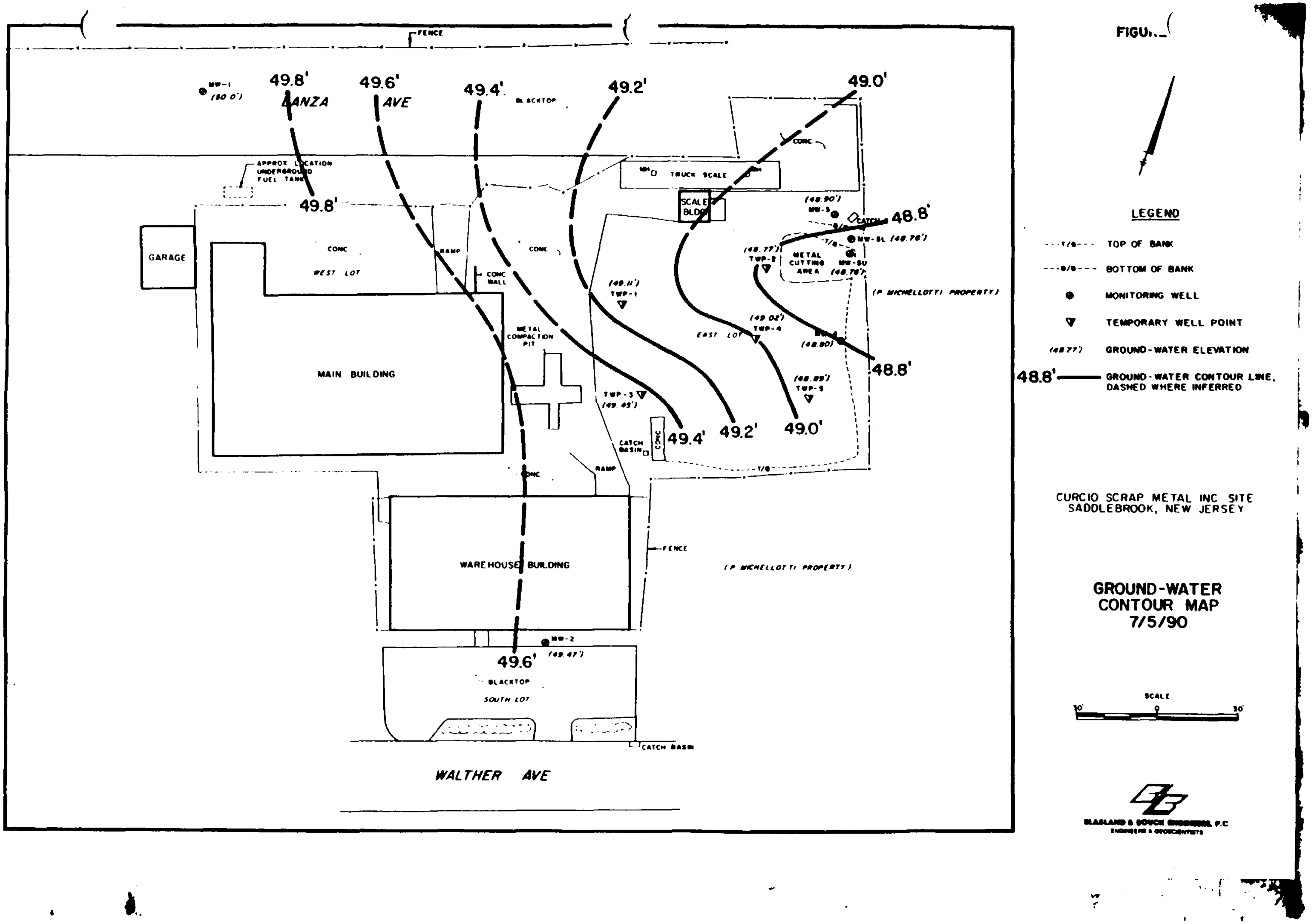
BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS



LANZA AVE.
BLACKTOP
CONC
FENCE
MH
TRUCK SCALE
MH
SCALE BLDG
RAMP
CONC
CONC WALL
CONC BLOCK BUILDING
METAL COMPACTION PIT
CONC
CATCH BASIN
CONC
RAMP
CONC BLOCK BUILDING
EAST LOT
TW-1
TW-2
TW-3
TW-4
TW-5
MW-3
CATCH BASIN
BOT OF BANK
MW-5L
TOP OF BANK
MW-5U
MW-4
SB-50
SB-51
SB-52
SB-53
SB-54
SB-55
SB-56
TOP OF BANK
FENCE
(P MICHELLOTTI PROPERTY)
(P MICHELLOTTI PROPERTY)
FIGU
LEGEND
PHASE I RI MONITORING WELL
PHASE II RI UPPER MONITORING WELL
PHASE II RI LOWER MONITORING WELL
PHASE II RI TEMPORARY WELL POINT
PHASE II RI SOIL BORING
DIRECTION OF GROUND-WATER FLOW
CONSOLIDATED EDISON COMPANY
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY
PHASE II
REMEDIAL INVESTIGATION
SOIL BORING AND WELL
LOCATION MAP
FOR EAST LOT AND
OFF-SITE AREAS
SCALE
15
0
15
BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1058


LANZA AVE
FENCE
49.4'
54.04
MW-1
(49.40')
49.3'
49.2'
49.1'
49.0'
48.9'
48.8'
APPROX LOCATION UNDERGROUND FUEL TANK
TRUCK SCALE
SCALE BLDG
CONC
GARAGE
WEST LOT
RAMP
CONC WALL
METAL COMPACTION PIT
MAIN BUILDING
(49.00')
MW-3
51.8
CATCH BASIN
METAL CUTTING AREA
EAST LOT
MELLOTTI PROPERTY)
(48.73')
MW-4
54.4
CATCH BASIN
WAREHOUSE BUILDING
(P MICHELLOTTI PROPERTY)
(49.27')
MW-2
54.1
BLACKTOP
SOUTH LOT
WALTHER AVE
FIG
LEGEND
TOP OF BANK
BOTTOM OF BANK
MONITORING WELL
SURFACE ELEVATION
GROUND-WATER ELEVATION
GROUND-WATER CONTOUR LINE
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY
GROUND-WATER
CONTOUR MAP
8/24/89
SCALE
30
0
30
BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS


FENCE
MW-1
(50.0')
49.8'
LANZA
49.6'
AVE
49.4'
BLACKTOP
49.2'
49.0'
CONC
APPROX LOCATION UNDERGROUND FUEL TANK
TRUCK SCALE
SCALE BLDG
49.8'
(48.90')
MW-3
CATCH
48.8'
MW-BL (48.76')
GARAGE
CONC
WEST LOT
RAMP
CONC WALL
CONC
(48.77')
TWP-2
METAL CUTTING AREA
MW-5U
(48.76')
(49.11')
TWP-1
(P MICHELLOTTI PROPERTY)
METAL COMPACTION PIT
(49.02')
TWP-4
EAST LOT
(48.80)
MAIN BUILDING
48.8'
(48.89')
TWP-5
TWP-3
(49.45')
49.4'
49.2'
49.0'
CATCH BASIN
CONC
RAMP
CONC
FENCE
WAREHOUSE BUILDING
(P MICHELLOTTI PROPERTY)
MW-2
(49.47')
49.6'
BLACKTOP
SOUTH LOT
CATCH BASIN
WALTHER AVE
FIGU...
LEGEND
TOP OF BANK
BOTTOM OF BANK
MONITORING WELL
TEMPORARY WELL POINT
(48.77') GROUND-WATER ELEVATION
48.8' GROUND-WATER CONTOUR LINE, DASHED WHERE INFERRED
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY
GROUND-WATER
CONTOUR MAP
7/5/90
SCALE
30'
0
30'
BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1060

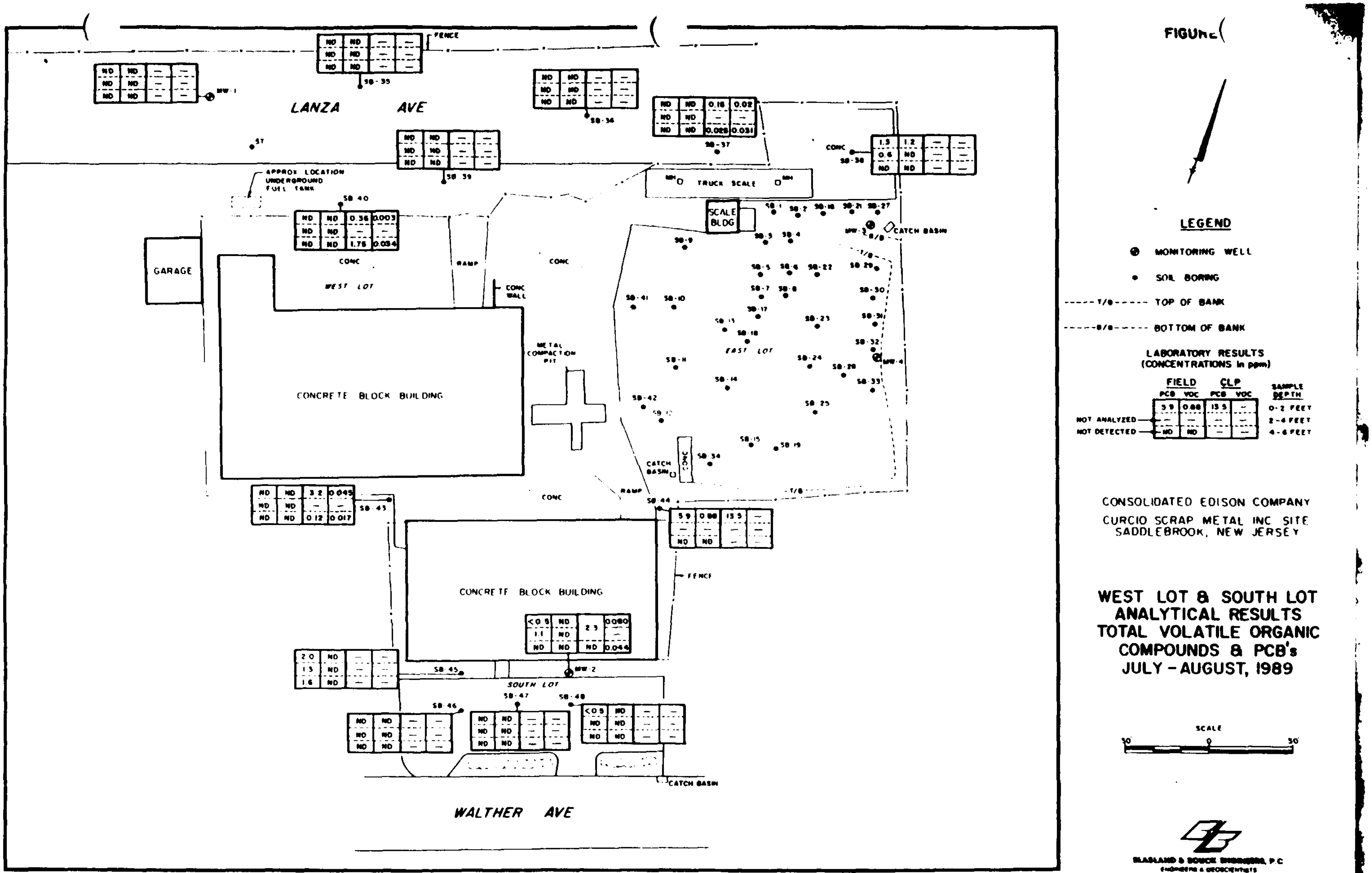
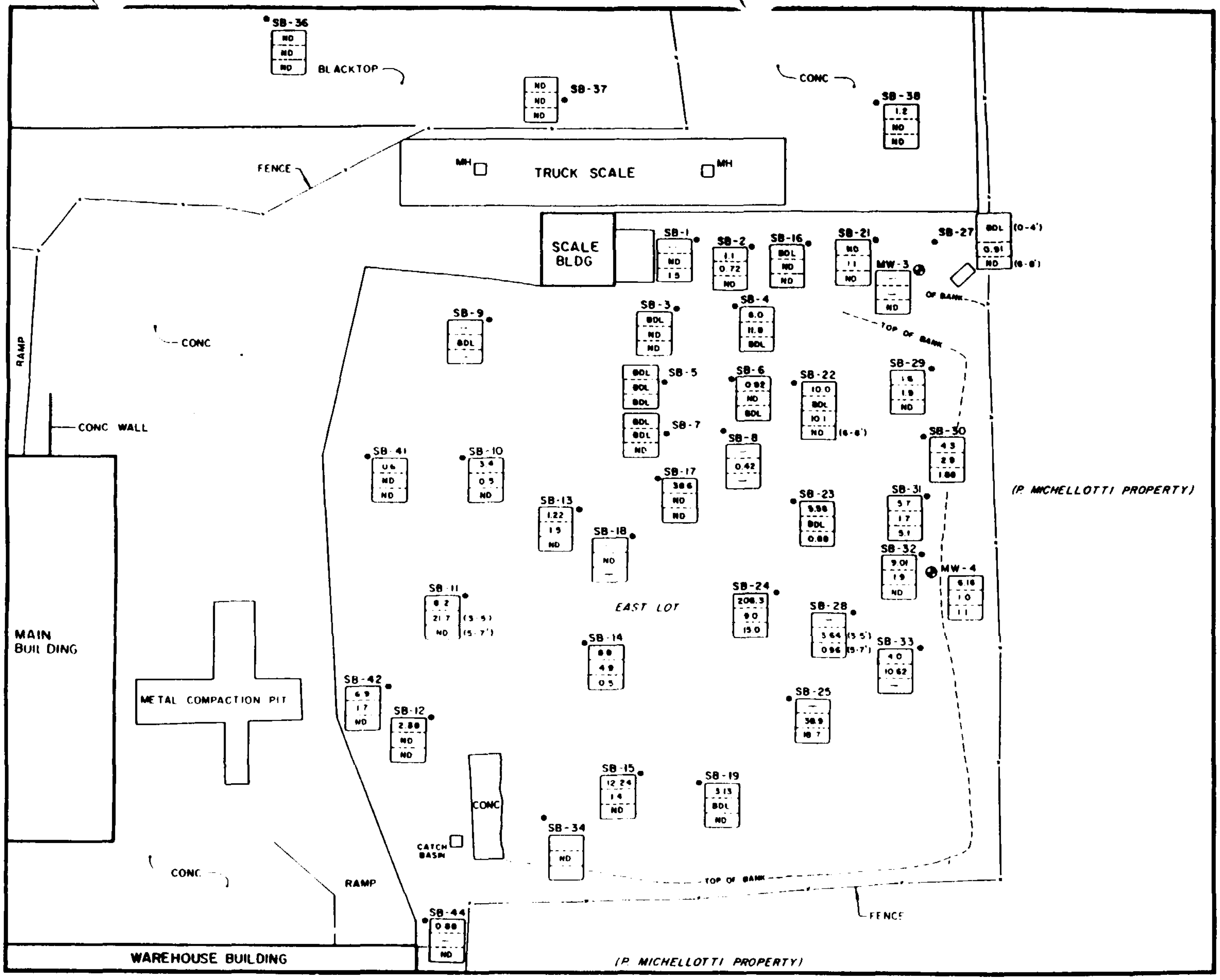


FIGURE
LANZA AVE
WALTHER AVE
FENCE
MW-1
MW-2
MW-4
APPROX LOCATION UNDERGROUND FUEL TANK
GARAGE
WEST LOT
EAST LOT
SOUTH LOT
CONCRETE BLOCK BUILDING
CONCRETE BLOCK BUILDING
CONC
CONC WALL
RAMP
METAL COMPACTION PIT
TRUCK SCALE
SCALE BLDG
CATCH BASIN
LEGEND
MONITORING WELL
SOIL BORING
TOP OF BANK
BOTTOM OF BANK
LABORATORY RESULTS (CONCENTRATIONS in ppm)
FIELD
CLP
PCB
VOC
SAMPLE DEPTH
0-2 FEET
2-4 FEET
4-6 FEET
NOT ANALYZED
NOT DETECTED
CONSOLIDATED EDISON COMPANY
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY
WEST LOT & SOUTH LOT
ANALYTICAL RESULTS
TOTAL VOLATILE ORGANIC
COMPOUNDS & PCB's
JULY - AUGUST, 1989
SCALE
BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1061

FIGURE 9



LEGEND

- MONITORING WELL
- SOIL BORING

TOTAL VOLATILE ORGANIC COMPOUNDS CONCENTRATIONS (in ppm)

4.3	SAMPLE DEPTH 0-2 FEET
2.9	SAMPLE DEPTH 2-4 FEET
1.66	SAMPLE DEPTH 4-6 FEET

—	NOT ANALYZED
BDL	BELOW DETECTION LIMITS
ND	NOT DETECTED
(6-8') 0.1	SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

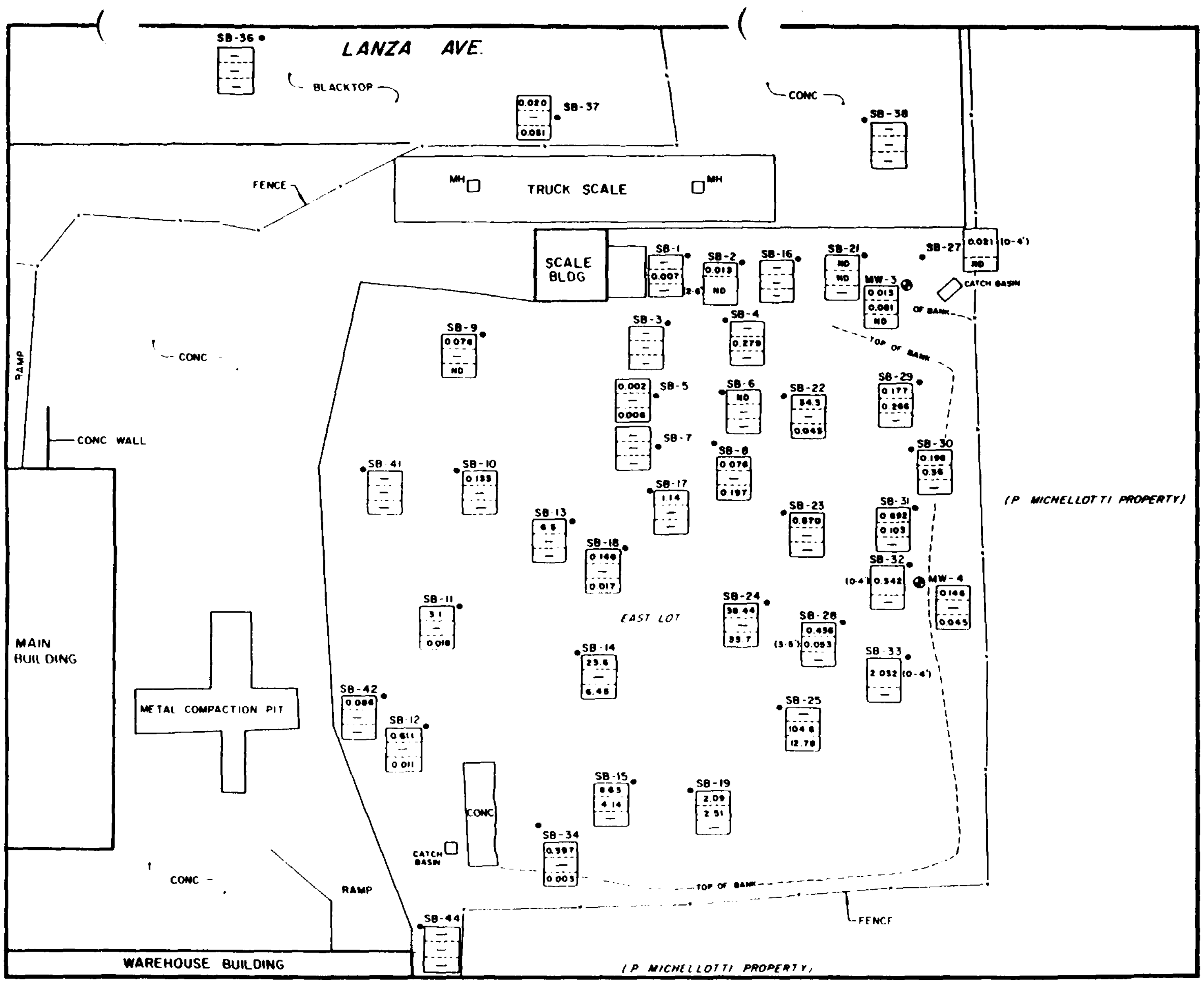
EAST LOT
GC FIELD ANALYSIS - SOIL
TOTAL VOLATILE ORGANIC COMPOUNDS
JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1062

FIGURE



LEGEND

- MONITORING WELL
- SOIL BORING

TOTAL VOLATILE ORGANIC COMPOUNDS CONCENTRATIONS (in ppm)

0.177	SAMPLE DEPTH 0-2 FEET
0.266	SAMPLE DEPTH 2-4 FEET
—	SAMPLE DEPTH 4-6 FEET

—	NOT ANALYZED
BDL	BELOW DETECTION LIMITS
ND	NOT DETECTED
(6-8') 0.1	SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

EAST LOT
CLP ANALYSIS - SOIL
TOTAL VOLATILE ORGANIC COMPOUNDS
JULY - AUGUST, 1989

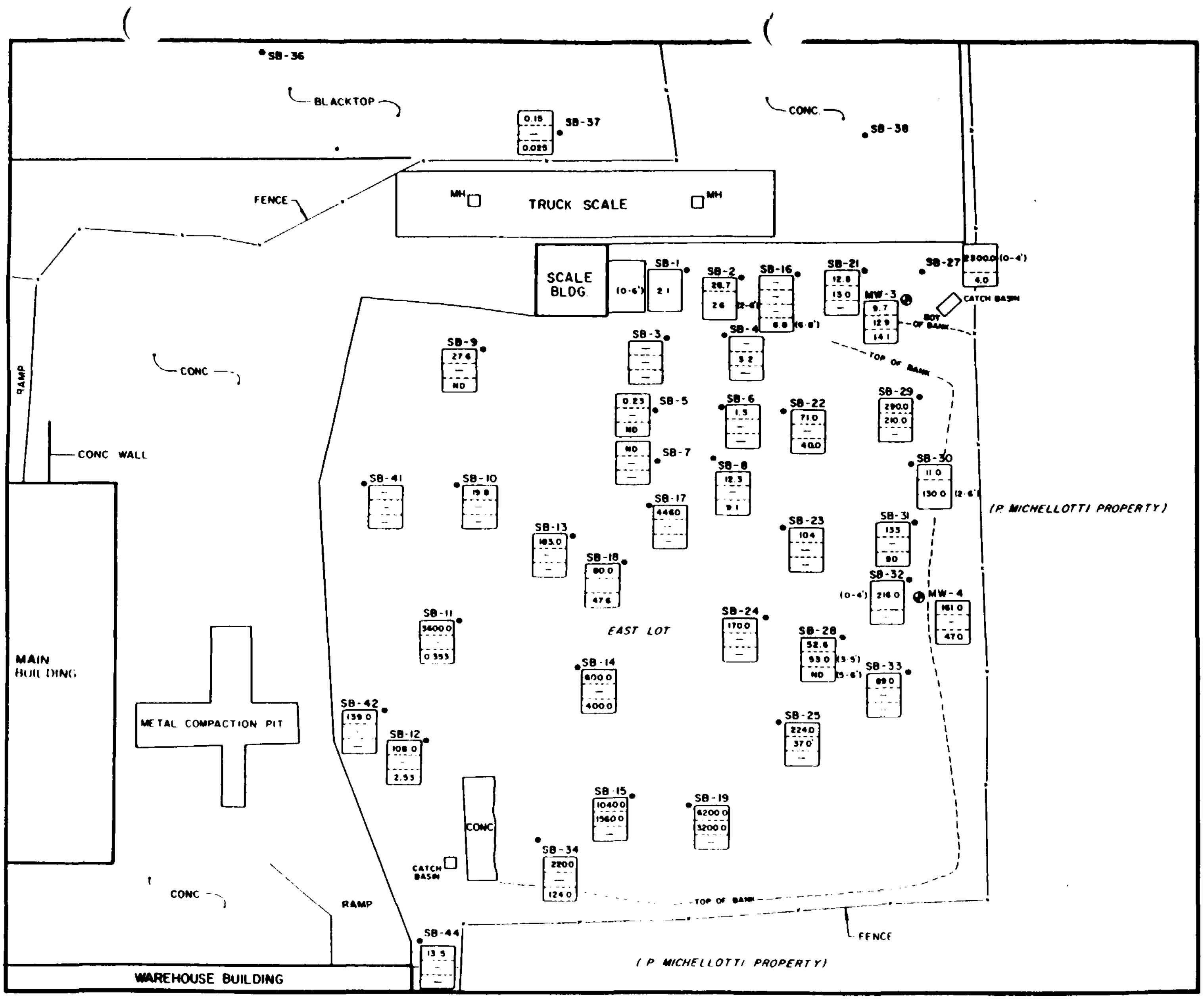
SCALE

15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1063

FIGURE II



LEGEND

- MONITORING WELL
- SOIL BORING

PCB CONCENTRATIONS (in ppm)

9.7	SAMPLE DEPTH 0-2 FEET
12.9	SAMPLE DEPTH 2-4 FEET
14.1	SAMPLE DEPTH 4-6 FEET

—	NOT ANALYZED
BDL	BELOW DETECTION LIMITS
ND	NOT DETECTED
(2-6') 2.6	SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

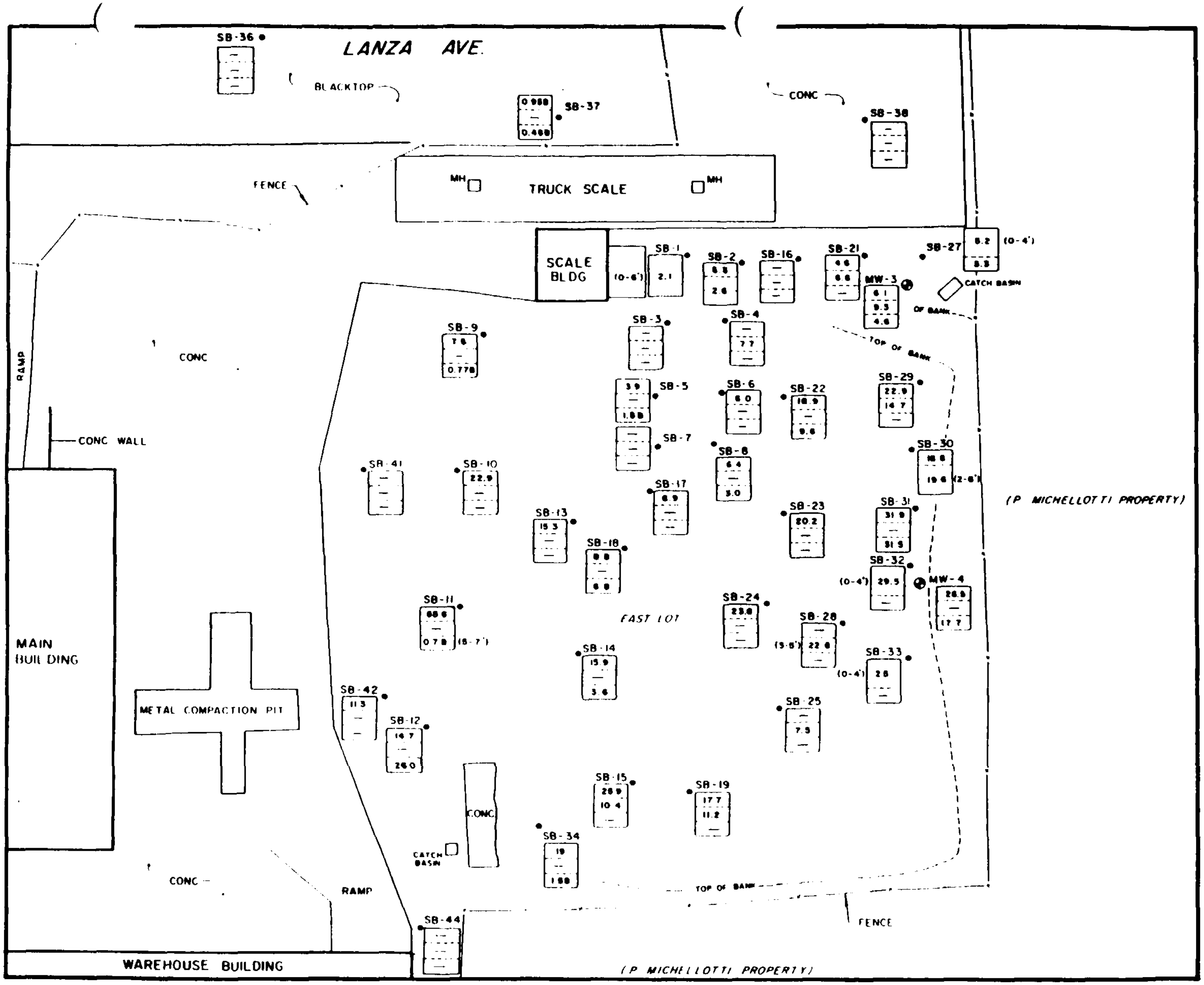
EAST LOT
CLP ANALYSIS - SOIL
PCB DISTRIBUTION
JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1064

FIGURE



LEGEND

MONITORING WELL

SOIL BORING

ARSENIC CONCENTRATION (in ppm)

SAMPLE DEPTH 0-2 FEET
SAMPLE DEPTH 2-4 FEET
SAMPLE DEPTH 4-6 FEET

NOT ANALYZED
DETECTED IN BLANK
NOT DETECTED
SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

EAST LOT
CLP ANALYSIS - SOIL
ARSENIC
JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1065

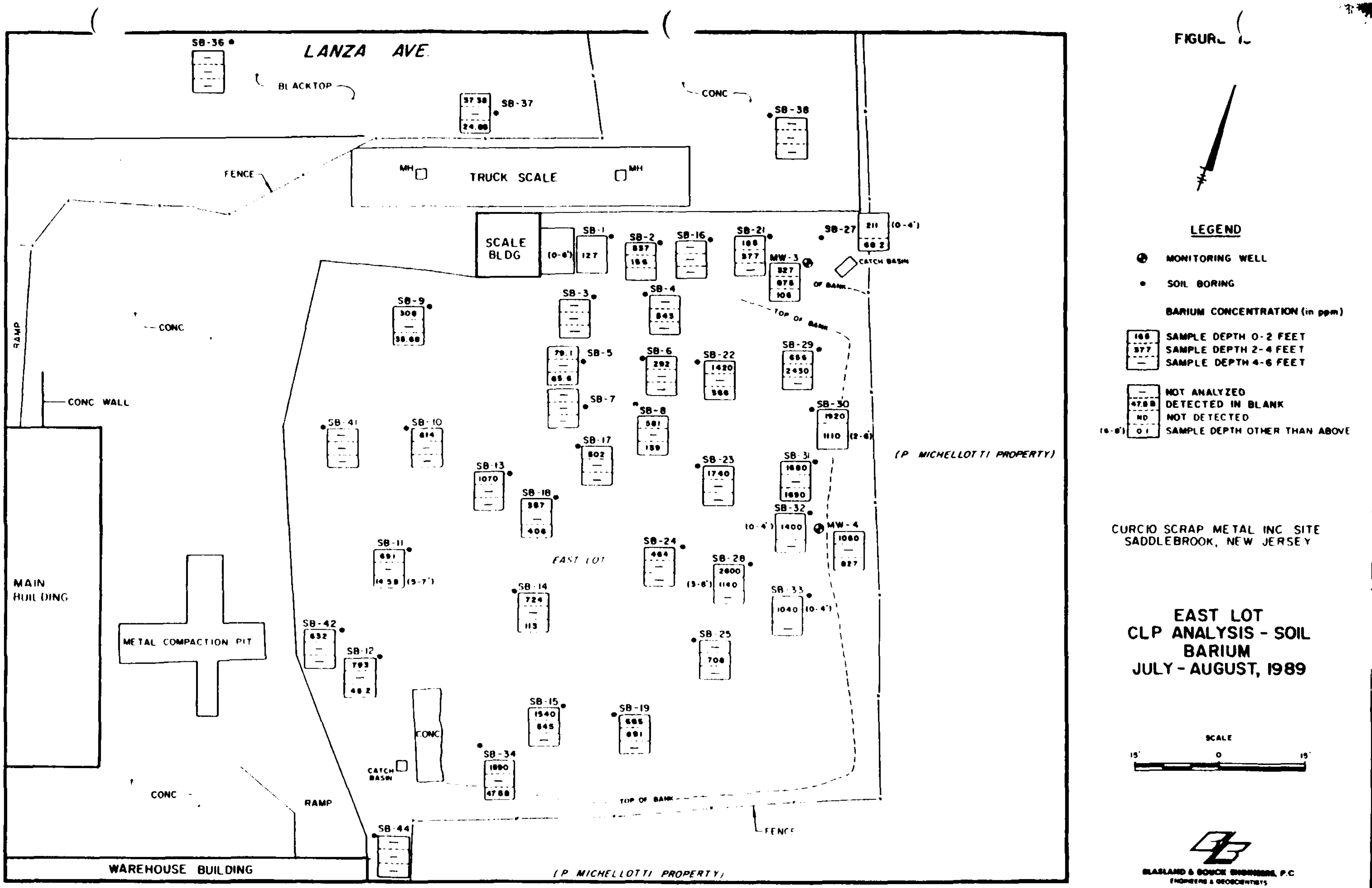
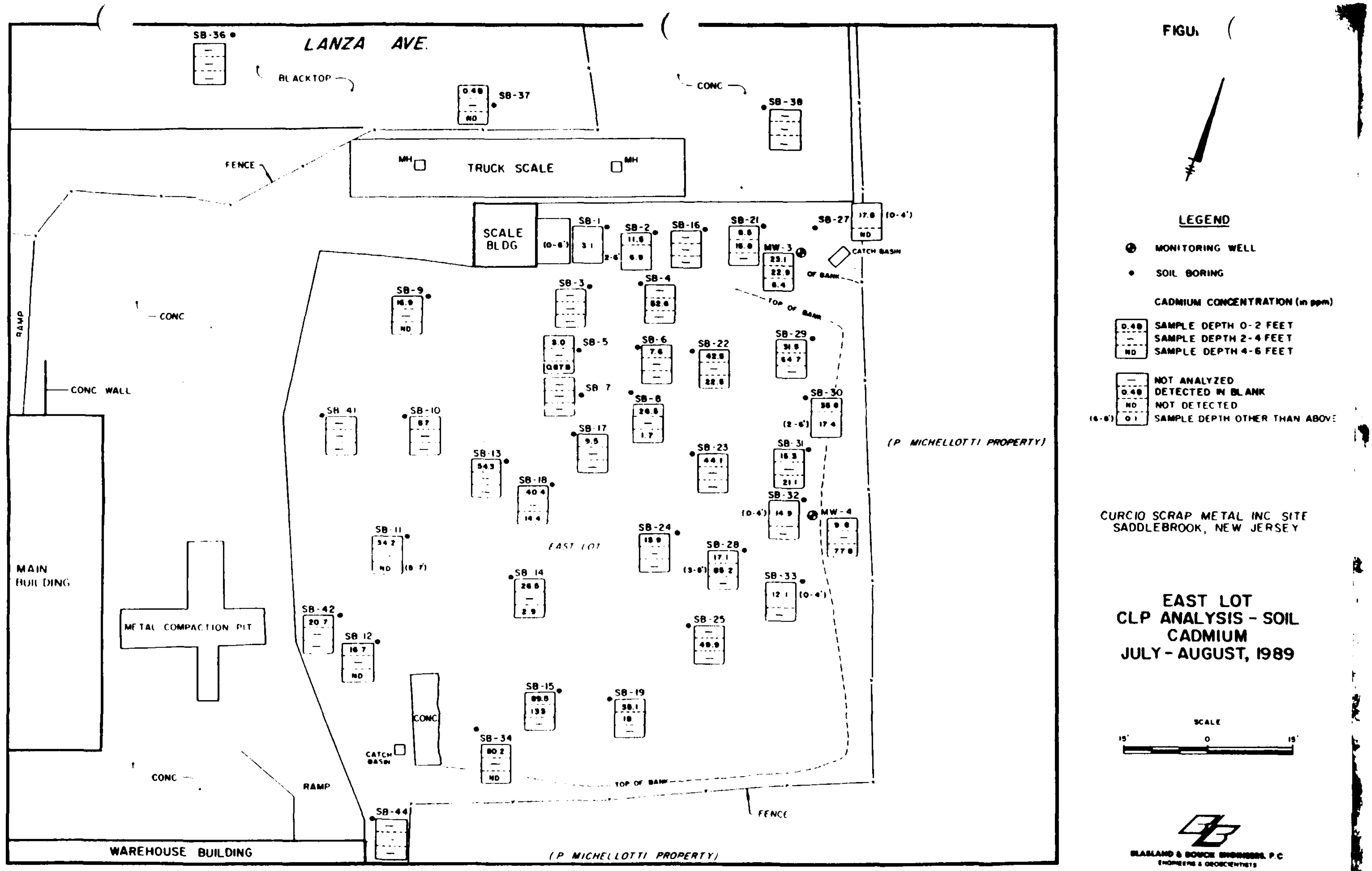
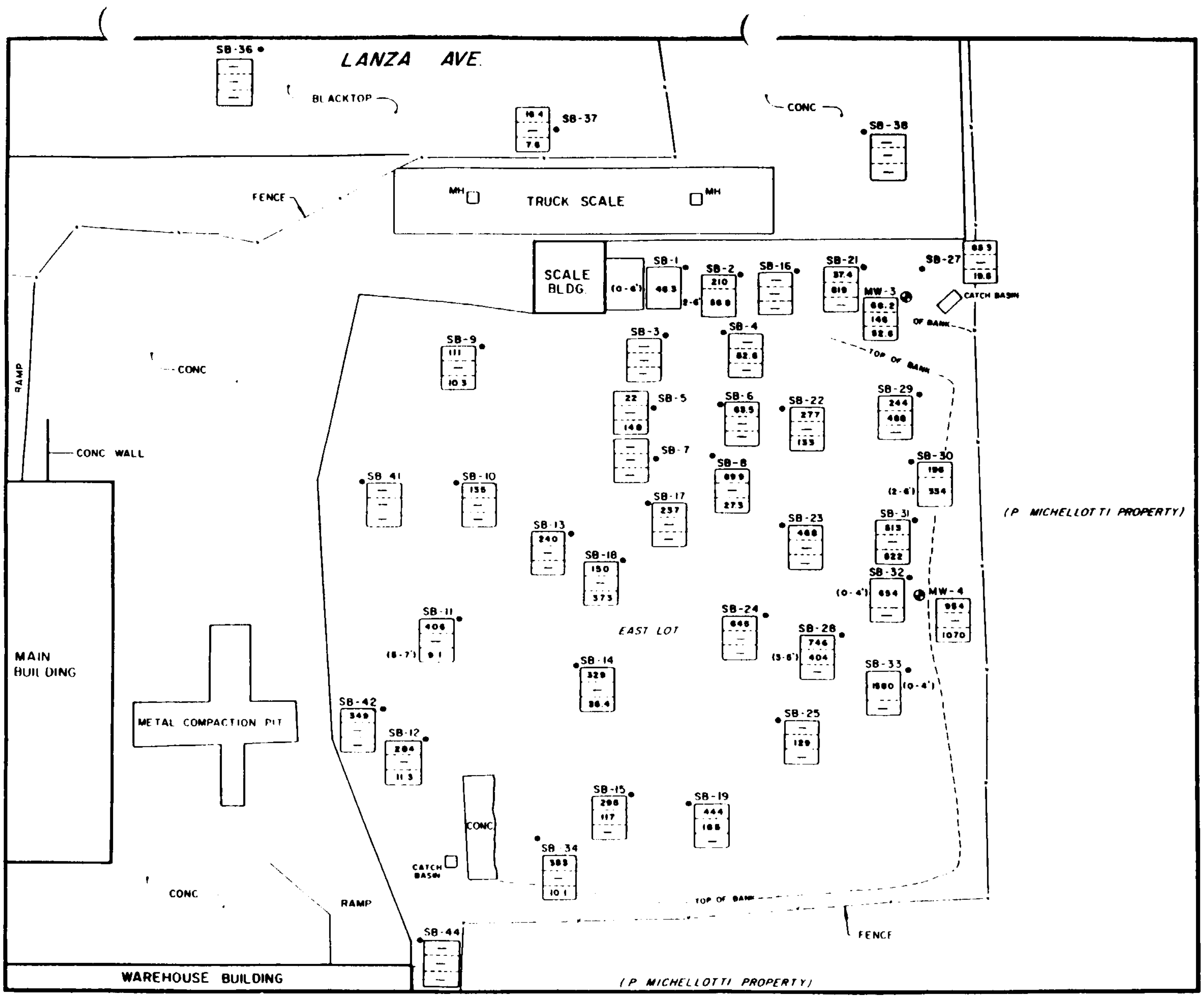


FIGURE
LANZA AVE
BLACKTOP
CONC
FENCE
TRUCK SCALE
MH
MH
SCALE BLDG
RAMP
CONC
CONC WALL
MAIN BUILDING
METAL COMPACTION PIT
CONC
CATCH BASIN
CONC
RAMP
WAREHOUSE BUILDING
EAST LOT
TOP OF BANK
TOP OF BANK
CATCH BASIN
FENCE
(P MICHELLOTTI PROPERTY)
(P MICHELLOTTI PROPERTY)
SB-36
SB-37 3738 24.00
SB-38
SB-1 (0-6') 127
SB-2 837 156
SB-16
SB-21 166 377
SB-27 211 (0-4') 66.2
MW-3 327 876 106
SB-3
SB-4 845
SB-9 300 36.66
SB-5 79.1 65.6
SB-6 292
SB-22 1420 566
SB-29 656 2430
SB-7
SB-8 581 159
SB-30 1920 1110 (2-6')
SB-41
SB-10 614
SB-17 502
SB-13 1070
SB-23 1740
SB-31 1680 1690
SB-18 387 406
SB-32 (0-4') 1400
MW-4 1060 827
SB-11 691 14.58 (5-7')
SB-24 484
SB-28 2600 (3-6') 1140
SB-14 724 113
SB-33 1040 (0-4')
SB-42 632
SB-12 793 46.2
SB-25 708
SB-15 1540 845
SB-19 686 691
SB-34 1890 47.88
SB-44
LEGEND
MONITORING WELL
SOIL BORING
BARIUM CONCENTRATION (in ppm)
166 SAMPLE DEPTH 0-2 FEET
377 SAMPLE DEPTH 2-4 FEET
— SAMPLE DEPTH 4-6 FEET
— NOT ANALYZED
47.8B DETECTED IN BLANK
ND NOT DETECTED
(6-8') 0.1 SAMPLE DEPTH OTHER THAN ABOVE
CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY
EAST LOT
CLP ANALYSIS - SOIL
BARIUM
JULY - AUGUST, 1989
SCALE
15' 0 15'
BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS


FIGU
LEGEND
MONITORING WELL
SOIL BORING
CADMIUM CONCENTRATION (in ppm)
0.48 SAMPLE DEPTH 0-2 FEET
— SAMPLE DEPTH 2-4 FEET
ND SAMPLE DEPTH 4-6 FEET
— NOT ANALYZED
0.48 DETECTED IN BLANK
ND NOT DETECTED
(4-6') 0.1 SAMPLE DEPTH OTHER THAN ABOVE
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY
EAST LOT
CLP ANALYSIS - SOIL
CADMIUM
JULY - AUGUST, 1989
SCALE
15' 0 15'
BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS
LANZA AVE.
BLACKTOP
CONC
TRUCK SCALE
MH
FENCE
SCALE BLDG
RAMP
CONC WALL
MAIN BUILDING
METAL COMPACTION PIT
WAREHOUSE BUILDING
CATCH BASIN
TOP OF BANK
EAST LOT
(P. MICHELLOTTI PROPERTY)
SB-36
SB-37 0.48 ND
SB-38
SB-1 (0-6') 3.1
SB-2 (2-6') 11.6 6.9
SB-16
SB-21 8.5 16.0
SB-27 17.8 ND (0-4')
MW-3 23.1 22.9 6.4
SB-3
SB-4 52.6
SB-9 16.9 ND
SB-5 3.0 0.678
SB-7
SB-6 7.6
SB-22 42.8 22.6
SB-29 31.6 64.7
SB-8 26.5 1.7
SB-30 38.6 17.4 (2-6')
SB-41
SB-10 87
SB-17 9.5
SB-13 54.3
SB-18 40.4 14.4
SB-23 44.1
SB-31 15.3 21.1
SB-32 (0-4') 14.9
MW-4 9.0 77.8
SB-11 54.2 ND (6-7')
SB-24 13.9
SB-28 17.1 (3-6') 86.2
SB-14 26.5 2.9
SB-33 12.1 (0-4')
SB-42 20.7
SB-12 16.7 ND
SB-25 49.9
SB-15 89.6 133
SB-19 38.1 18
SB-34 80.2 ND
SB-44

CUR 001 1067

FIGURE



LEGEND

- MONITORING WELL
- SOIL BORING

CHROMIUM CONCENTRATION (in ppm)

16.4	SAMPLE DEPTH 0-2 FEET
—	SAMPLE DEPTH 2-4 FEET
76	SAMPLE DEPTH 4-6 FEET
—	NOT ANALYZED
BDL	BELOW DETECTION LIMITS
ND	NOT DETECTED
(4-6') 0.1	SAMPLE DEPTH OTHER THAN ABOVE

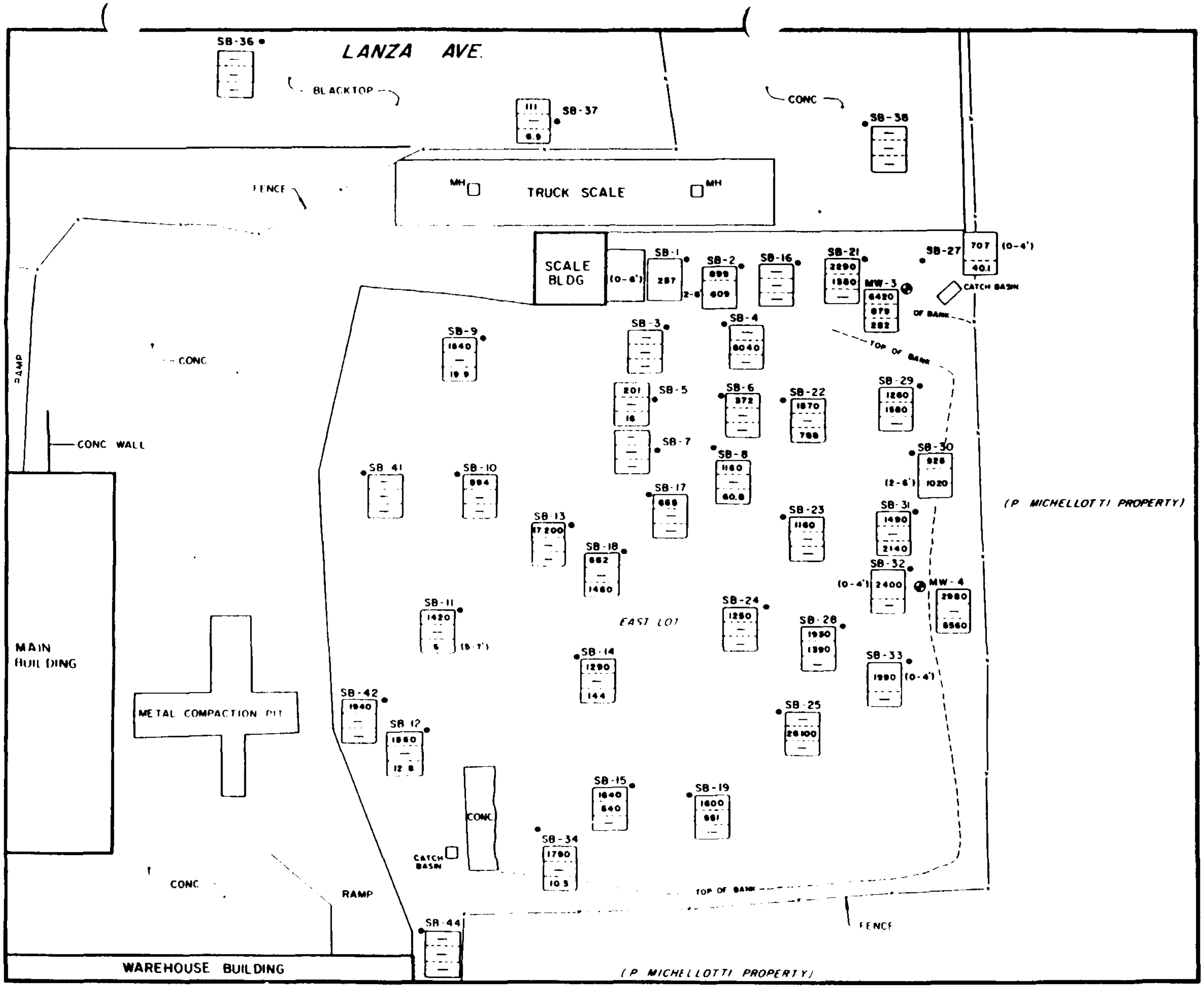
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

EAST LOT CLP ANALYSIS - SOIL CHROMIUM JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 1



LEGEND

- MONITORING WELL
- SOIL BORING

COPPER CONCENTRATION (in ppm)

- SAMPLE DEPTH 0-2 FEET
- SAMPLE DEPTH 2-4 FEET
- SAMPLE DEPTH 4-6 FEET
- — NOT ANALYZED
- BDL BELOW DETECTION LIMITS
- ND NOT DETECTED
- (4-6') SAMPLE DEPTH OTHER THAN ABOVE

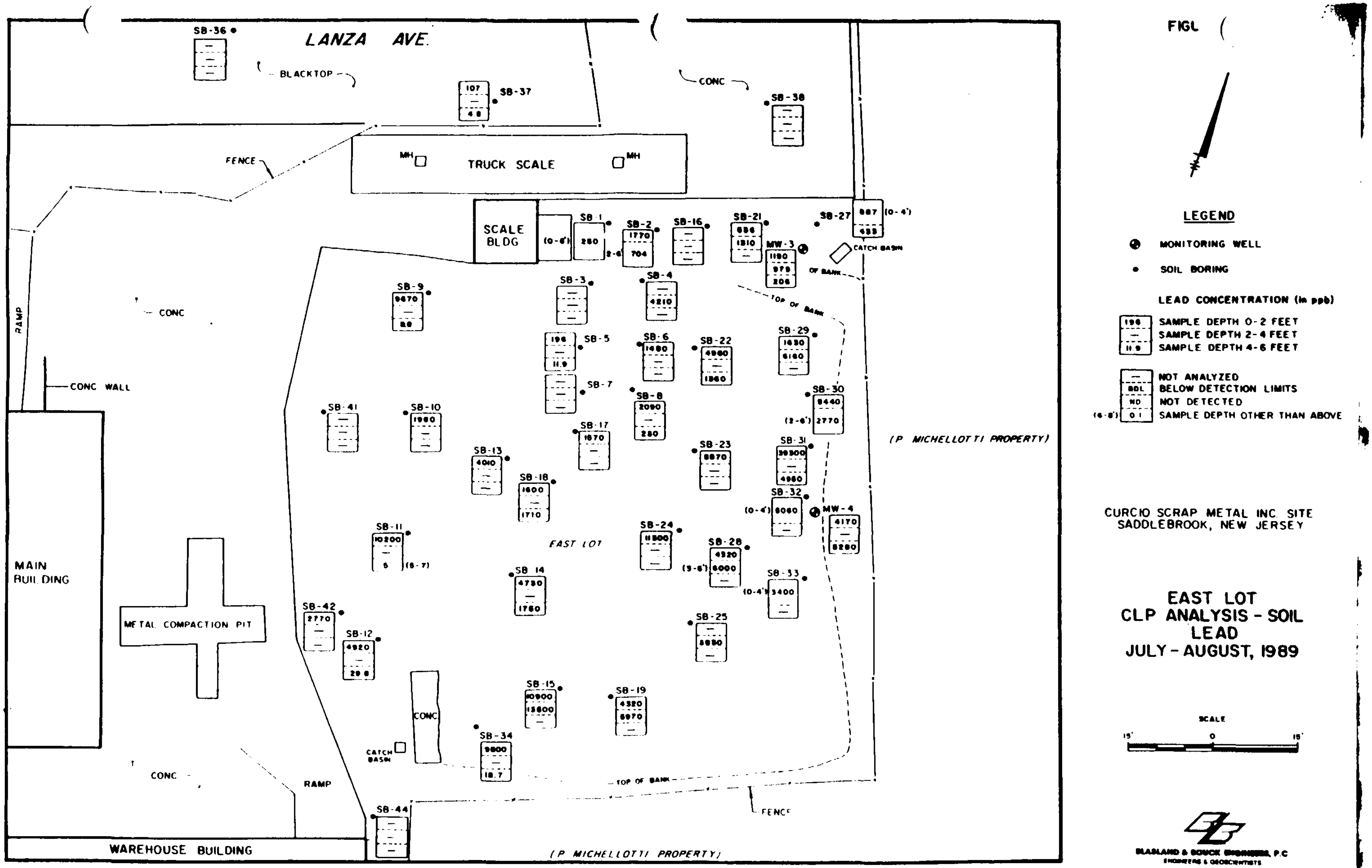
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

EAST LOT
CLP ANALYSIS - SOIL
COPPER
JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1069

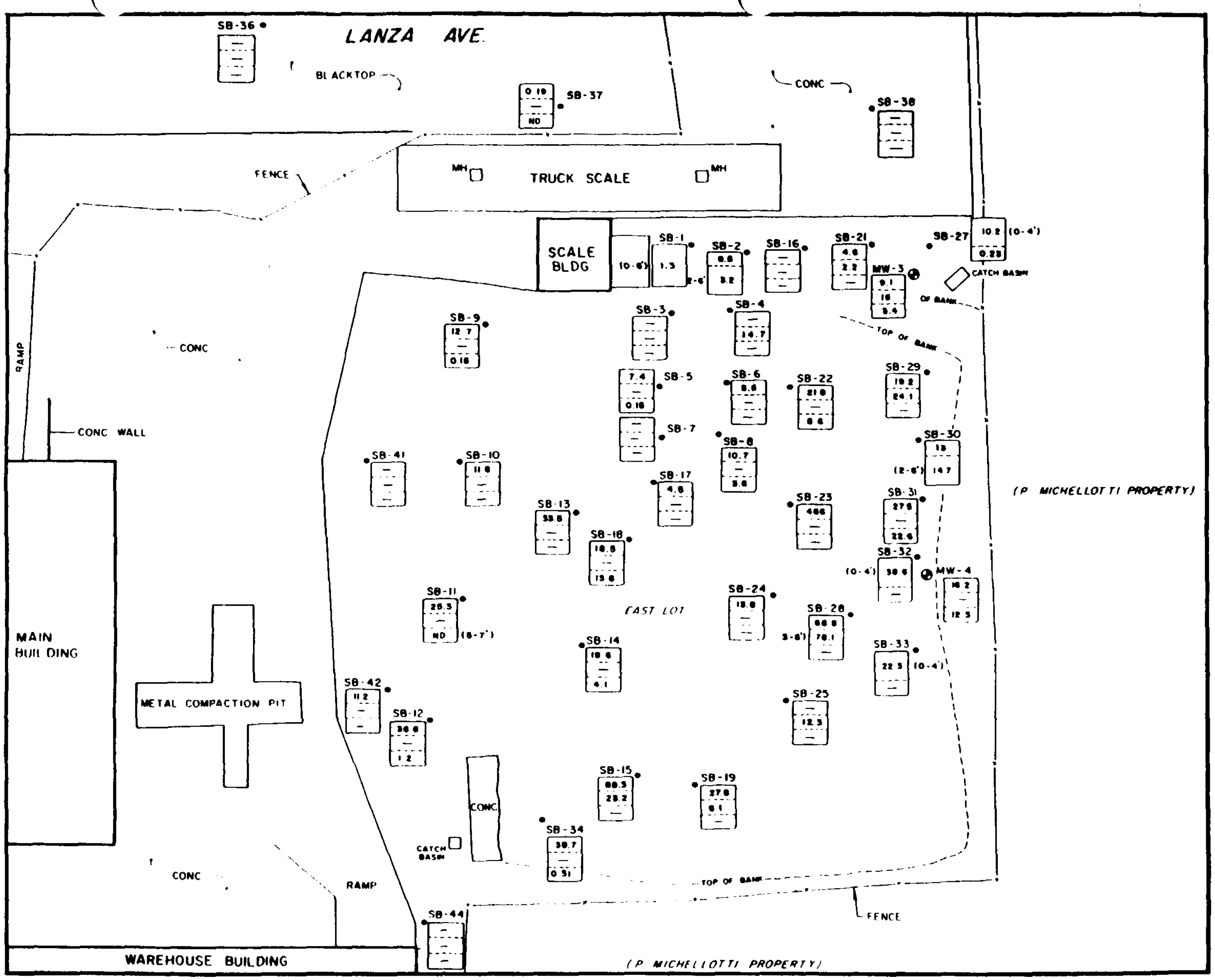


CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

EAST LOT
CLP ANALYSIS - SOIL
LEAD
JULY - AUGUST, 1989

CUR 001 1070

FIGURE 18



LEGEND

- MONITORING WELL
- SOIL BORING

MERCURY CONCENTRATION (in ppm)

0.19	SAMPLE DEPTH 0-2 FEET
—	SAMPLE DEPTH 2-4 FEET
ND	SAMPLE DEPTH 4-6 FEET

—	NOT ANALYZED
BDL	BELOW DETECTION LIMITS
ND	NOT DETECTED
(6-8') 0.1	SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

EAST LOT CLP ANALYSIS - SOIL MERCURY JULY - AUGUST, 1989

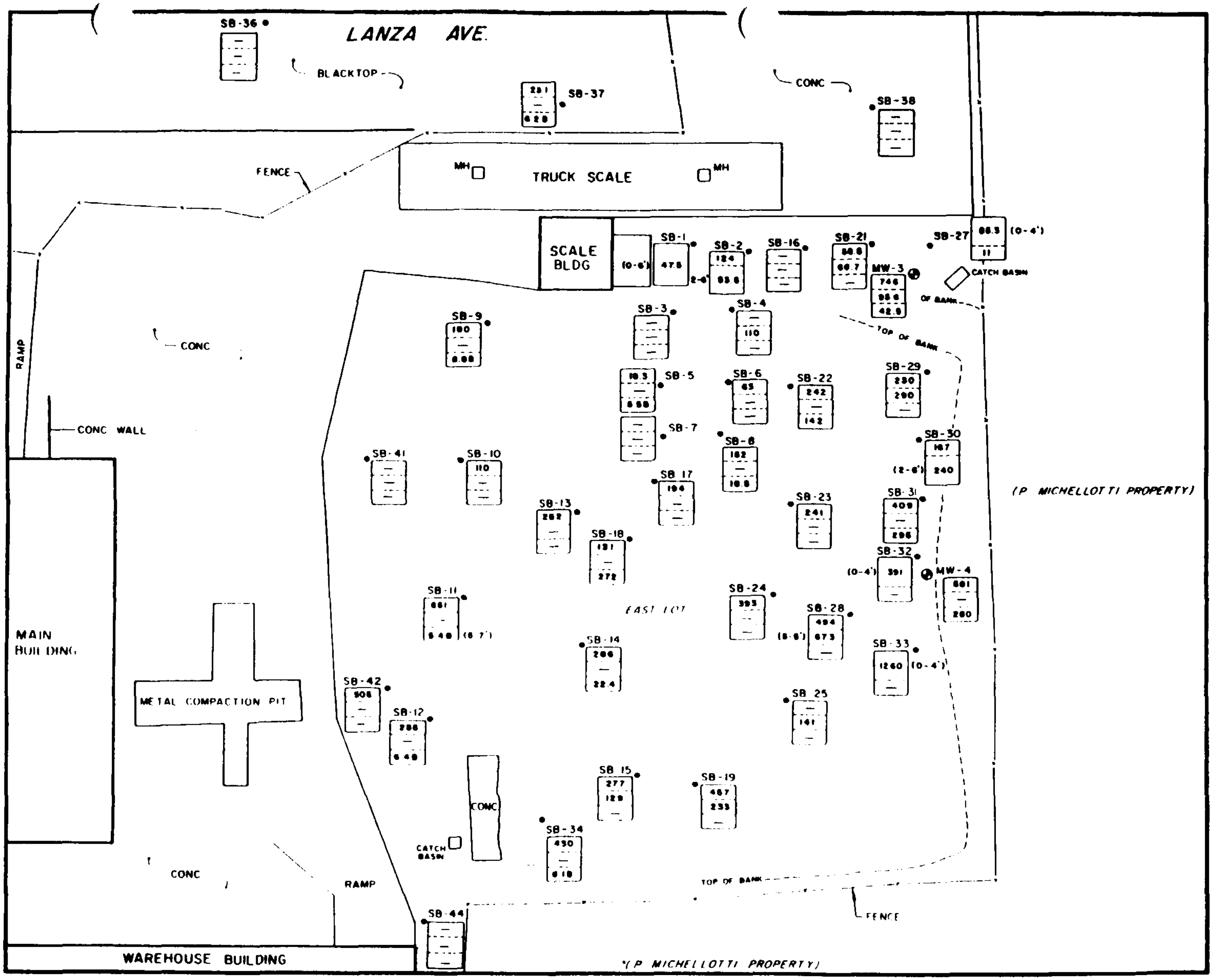
SCALE

15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1071

FIGURE



LEGEND

- MONITORING WELL
- SOIL BORING

NICKEL CONCENTRATION (in ppm)

- SAMPLE DEPTH 0-2 FEET
- SAMPLE DEPTH 2-4 FEET
- SAMPLE DEPTH 4-6 FEET

- — NOT ANALYZED
- 6.40 DETECTED IN BLANK
- ND NOT DETECTED
- (6-8') SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

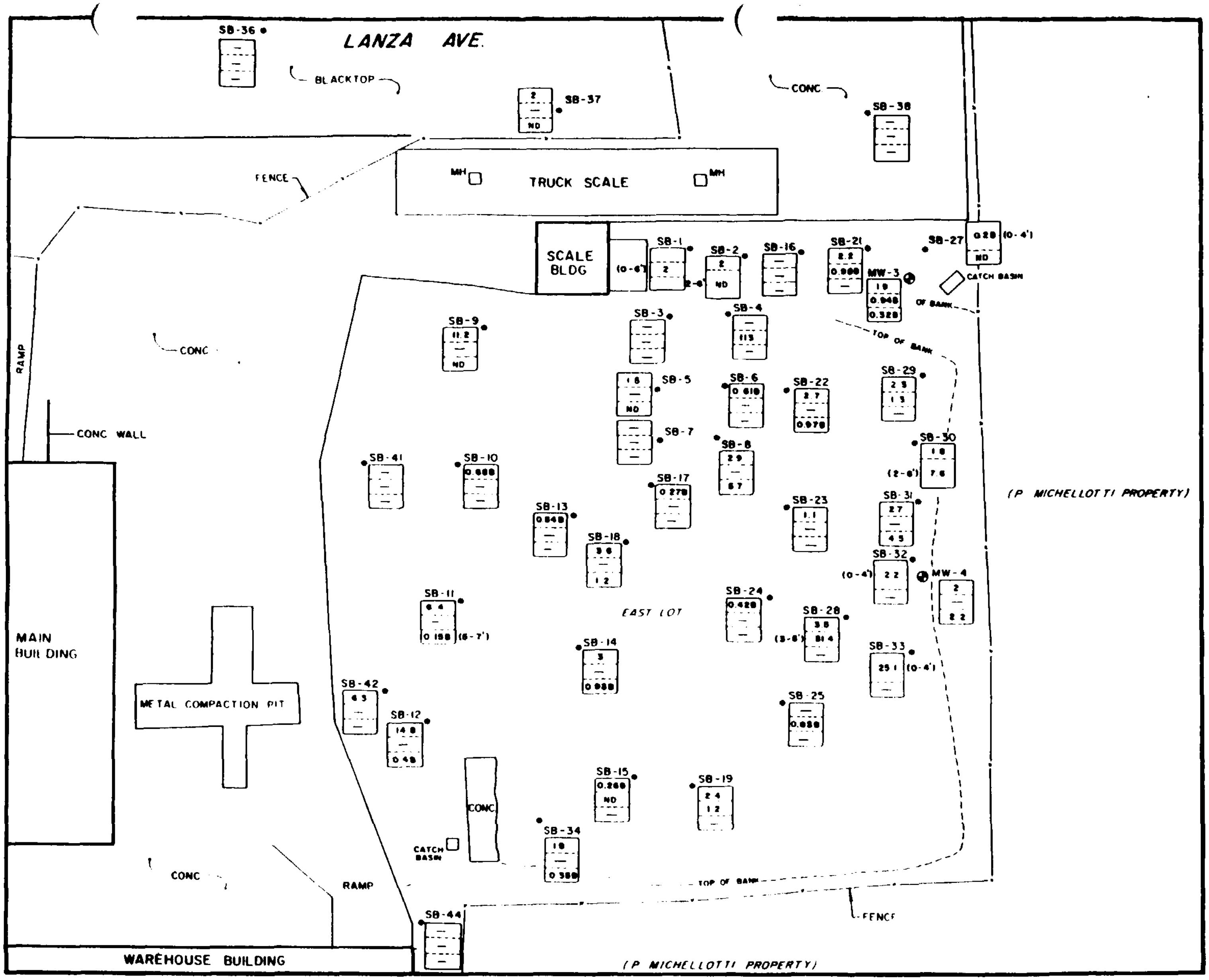
EAST LOT
CLP ANALYSIS - SOIL
NICKEL
JULY - AUGUST, 1989

SCALE 15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1072

FIGU.



LEGEND

- MONITORING WELL
- SOIL BORING

SELENIUM CONCENTRATION (in ppm)

2	SAMPLE DEPTH 0-2 FEET
—	SAMPLE DEPTH 2-4 FEET
ND	SAMPLE DEPTH 4-6 FEET

—	NOT ANALYZED
0.429	DETECTED IN BLANK
ND	NOT DETECTED
(6-8') 0.1	SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

EAST LOT
CLP ANALYSIS - SOIL
SELENIUM
JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1073

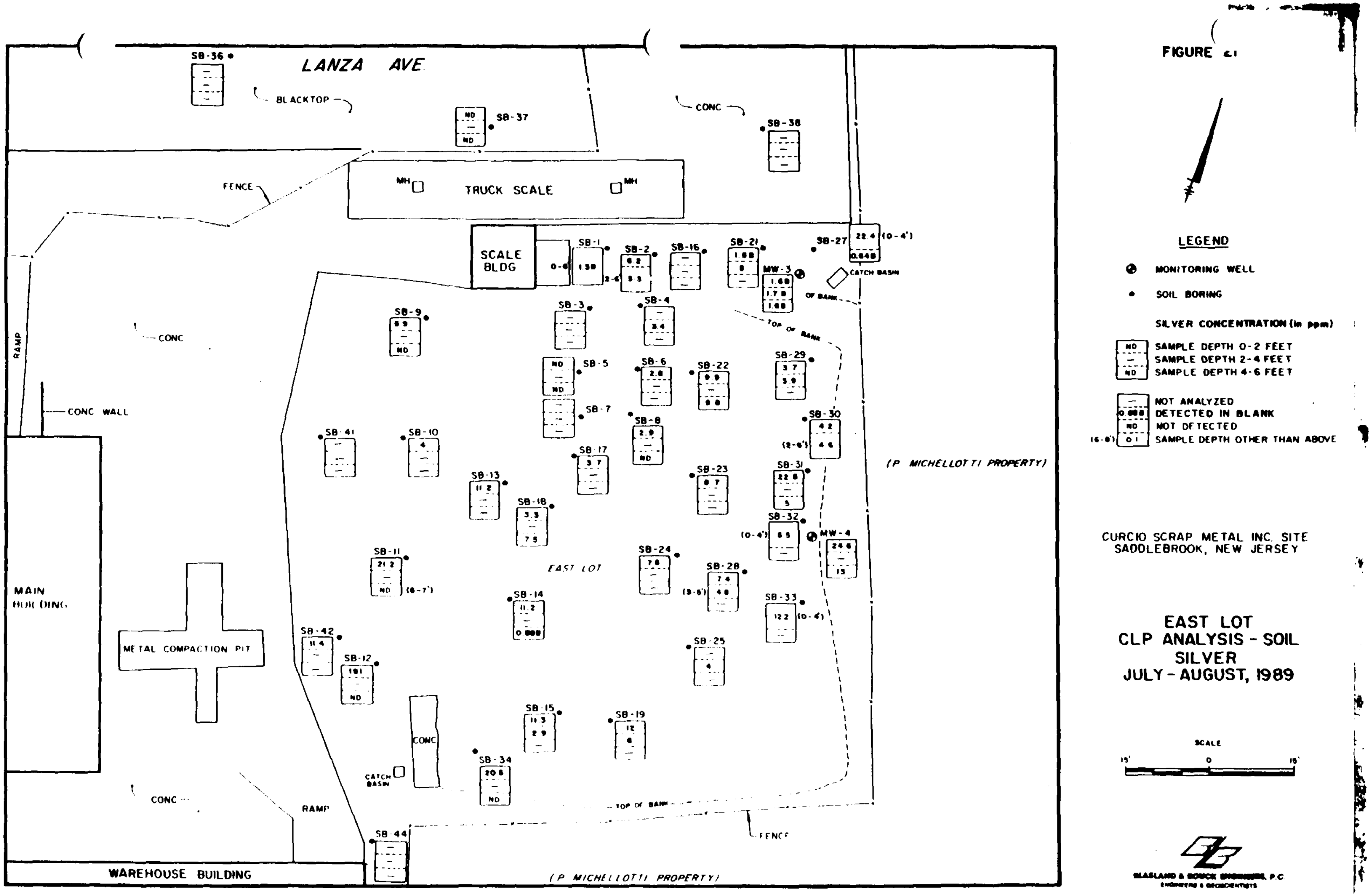


FIGURE
LANZA AVE
BLACKTOP
CONC
FENCE
TRUCK SCALE
MH
SCALE BLDG
RAMP
CONC WALL
MAIN BUILDING
METAL COMPACTION PIT
CONC
CATCH BASIN
WAREHOUSE BUILDING
EAST LOT
TOP OF BANK
(P. MICHELLOTTI PROPERTY)
SB-1
SB-2
SB-3
SB-4
SB-5
SB-6
SB-7
SB-8
SB-9
SB-10
SB-11
SB-12
SB-13
SB-14
SB-15
SB-16
SB-17
SB-18
SB-19
SB-21
SB-22
SB-23
SB-24
SB-25
SB-27
SB-28
SB-29
SB-30
SB-31
SB-32
SB-33
SB-34
SB-36
SB-37
SB-38
SB-41
SB-42
SB-44
MW-3
MW-4
LEGEND
MONITORING WELL
SOIL BORING
SILVER CONCENTRATION (in ppm)
SAMPLE DEPTH 0-2 FEET
SAMPLE DEPTH 2-4 FEET
SAMPLE DEPTH 4-6 FEET
NOT ANALYZED
DETECTED IN BLANK
NOT DETECTED
SAMPLE DEPTH OTHER THAN ABOVE
CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY
EAST LOT
CLP ANALYSIS - SOIL
SILVER
JULY - AUGUST, 1989
SCALE
BLASLAND & BOUCK ENGINEERS, P.C.

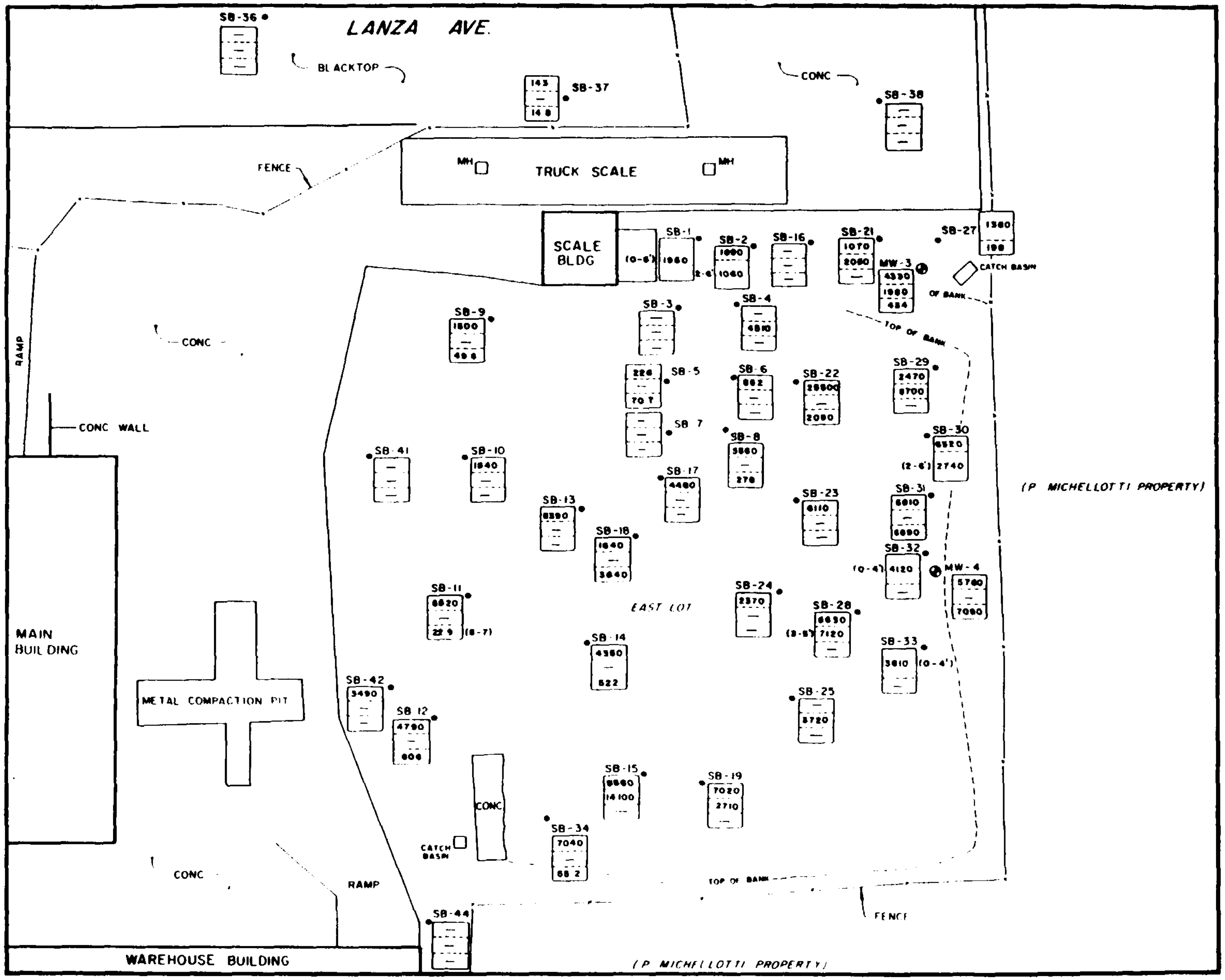


FIGURE 22

LEGEND

- MONITORING WELL
- SOIL BORING

ZINC CONCENTRATION (in ppm)

143	SAMPLE DEPTH 0-2 FEET
—	SAMPLE DEPTH 2-4 FEET
14.8	SAMPLE DEPTH 4-6 FEET
—	NOT ANALYZED
BDL	BELOW DETECTION LIMITS
ND	NOT DETECTED
(4-6') 0.1	SAMPLE DEPTH OTHER THAN ABOVE

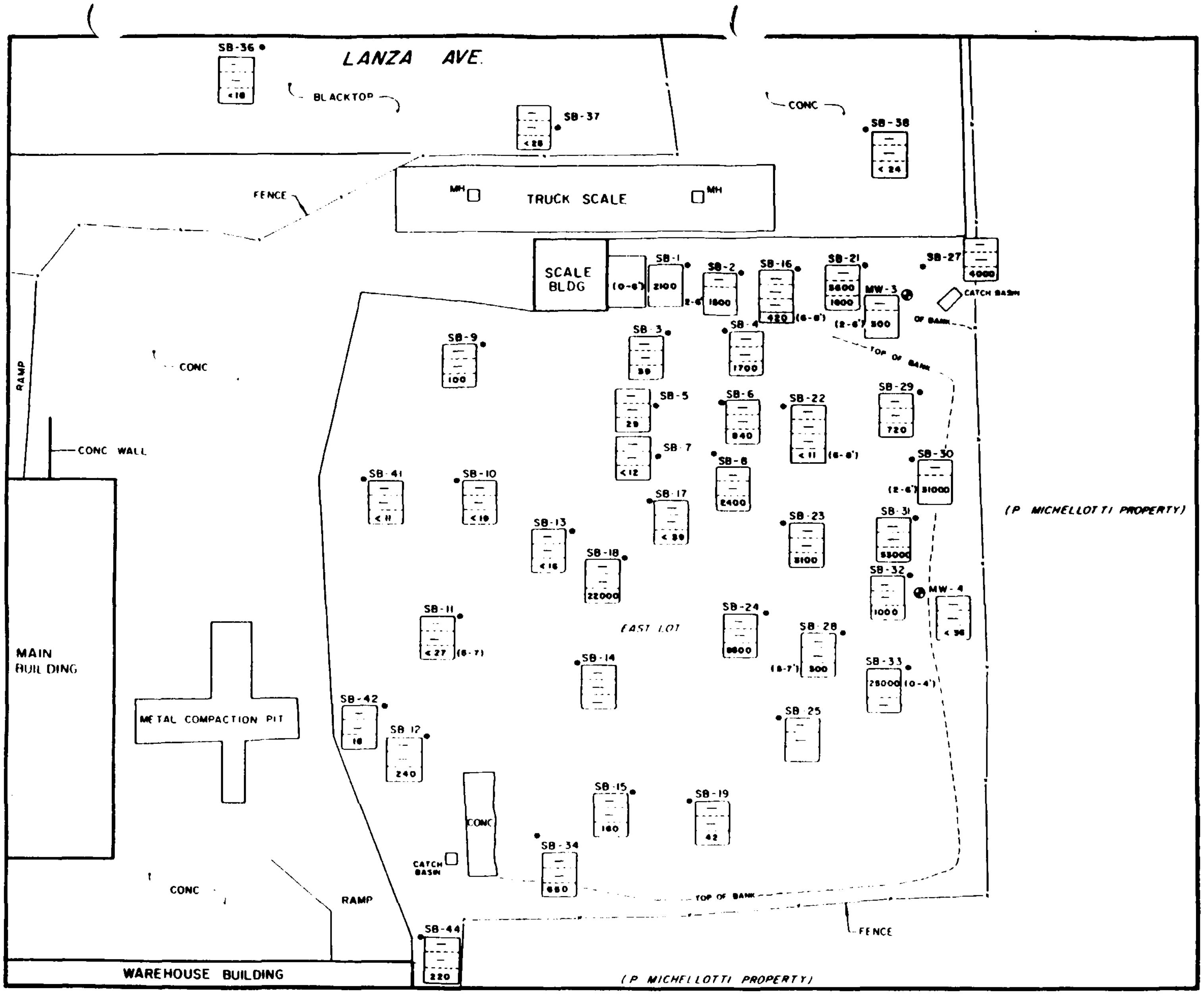
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

EAST LOT
CLP ANALYSIS - SOIL
ZINC
JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 23



LEGEND

- MONITORING WELL
- SOIL BORING

TOTAL PETROLEUM HYDROCARBONS CONCENTRATION (in ppm)

- SAMPLE DEPTH 0-2 FEET
- SAMPLE DEPTH 2-4 FEET
- SAMPLE DEPTH 4-6 FEET

- NOT ANALYZED
- BDL BELOW DETECTION LIMITS
- ND NOT DETECTED
- (6-8') SAMPLE DEPTH OTHER THAN ABOVE

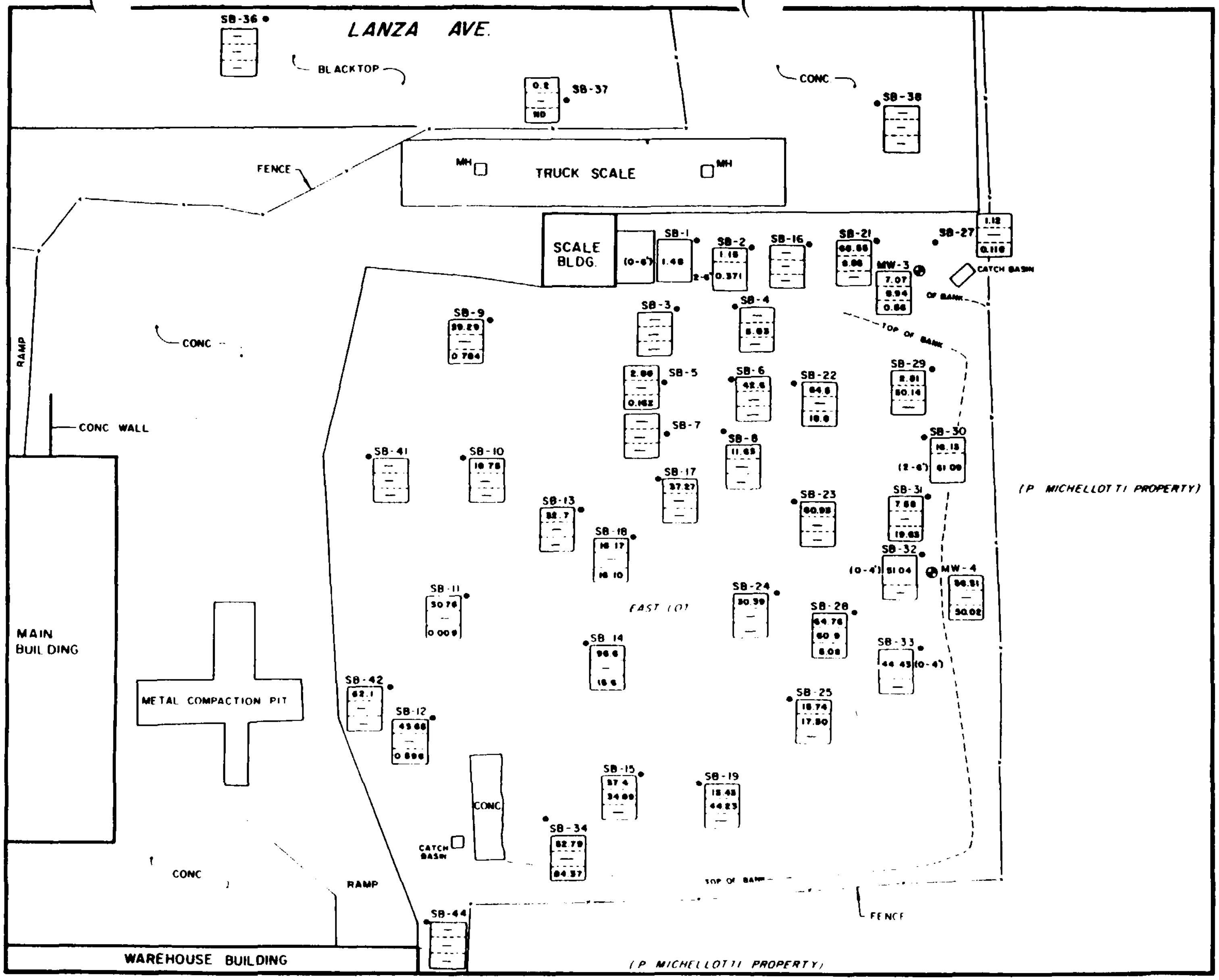
CURCIO SCRAP METAL INC SITE
SADDLEBROOK, NEW JERSEY

EAST LOT
CLP ANALYSIS - SOIL
TOTAL PETROLEUM HYDROCARBONS
JULY-AUGUST, 1989

SCALE 15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE



LEGEND

- MONITORING WELL
- SOIL BORING

TOTAL PAH's CONCENTRATION (in ppm)

0.2	SAMPLE DEPTH 0-2 FEET
–	SAMPLE DEPTH 2-4 FEET
ND	SAMPLE DEPTH 4-6 FEET

–	NOT ANALYZED
BDL	BELOW DETECTION LIMITS
ND	NOT DETECTED
(4-6') 0.1	SAMPLE DEPTH OTHER THAN ABOVE

CURCIO SCRAP METAL INC. SITE
SADDLEBROOK, NEW JERSEY

EAST LOT CLP ANALYSIS - SOIL TOTAL PAH's JULY - AUGUST, 1989

SCALE
15' 0 15'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

CUR 001 1077

APPENDICES

APPENDICES

APPENDIX A

SUBSURFACE LOGS - BORINGS AND MONITORING WELLS

SUBSURFACE LOG MW-1

Samples were obtained using a 2-inch O.D. split-barrel sampler driven by a 140-pound hammer.

Well decommissioned on 7/9/90.

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	1.6	54, 47, 21, 17	Dark brown fine SAND and SILT, some fine to medium gravel, little brick, concrete, compact, dry.
2	2-4	0.5	11, 11, 10, 8	Brown-black fine SAND and SILT, little clay, little gravel, firm, moist.
4	4-6	1.0	14, 10, 13, 12	Brown SILT, some fine sand, some clay, stiff, wet.
6	NS			
8	NS			
10	10-12	1.5	5, 5, 6, 7	Reddish-brown fine to medium SILT, some fine to medium sand, little clay, medium to soft, saturated.
12	NS			
14	14-16	1.7	4, 5, 8, 9	Weathered Brunswick SANDSTONE, damp, stiff.
16				
18				Boring terminated at 17.0'.

Summary of Well Construction

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers.
Screen and riser 2" stainless steel - 305.
Screen slot size .010" extends from 6' - 17'.
Screen pack material is Grade ØØ sand extending from 4' - 17'.
Hydrated bentonite pellet seal from 2' - 4'.
Surface seal consists of a cement/bentonite grout.
4" steel protective casing and locking cap.

SURFACE ELEVATION 54.04
DATE STARTED 8/1/89
DATE COMPLETED 8/1/89
CLASSIFIED BY VAD/RGP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. MW-1
Project. 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG MW-2

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
							Samples were obtained using a 3-inch O.D. split-barrel sampler driven by a 140-pound hammer.
0		0-2	.9	2, 3, 3, 5			Brown fine to coarse SAND and GRAVEL, some silt, little plastic material, loose, dry.
2		2-4	1.3	6, 6, 6, 6			Black-brown SAND and SILT, some fine to medium gravel, little brick, loose, damp.
4		4-6	1.2	2, 3			Grey fine to medium SAND, some clay, moist.
				4, 11			Dark red fine to medium SAND and SILT, little clay, medium stiff, wet.
6		6-8	2.0	14, 14, 14, 12			
8		NS					
10		10-12	2.0	3, 3			Grey-red-black alternating fine to medium SAND and SILT, striated, soft, wet.
				4, 6			Dark red SILT and CLAY, some fine to medium sand, little fine to medium gravel, soft, moist.
12		NS					
14		14-16	2.0	3, 6			
				45, 45			Dark red weathered Brunswick SANDSTONE, compact, dry.
16							Boring terminated at 16.5'.
18							

Boring terminated at 16.5'.

Summary of Well Construction

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers.
Screen and riser 2" stainless steel - 305.
Screen slot size .010" extends from 5.3' - 16.3'.
Screen pack material is Grade 00 sand extending from 3.5'-16.5'.
Hydrated bentonite pellet seal from 2' - 3.5'.
Surface seal consists of a cement/bentonite grout.
4" steel protective casing and locking cap.

SURFACE ELEVATION 54.1
DATE STARTED 7/31/89
DATE COMPLETED 7/31/89
CLASSIFIED BY VAD/RCP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. MW-2
Project. 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1081

SUBSURFACE LOG MW-3

Samples were obtained using a 2-inch O.D. split-barrel sampler driven by a 140-pound hammer.

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	1.0	4, 4, 7, 9	Black-stained fine to coarse SAND and GRAVEL, some silt, loose, damp.
2	2-4	1.0	10, 10, 10, 10	
4	4-6	1.6	12, 17, 19, 20	Black fine to coarse SAND and SILT, some fine to medium gravel, stiff, moist.
6	NS			
8	NS			
10	10-12	1.0	4, 6, 6, 7	Reddish-brown SILT, some fine to medium sand, some clay, soft, wet.
12				
14				
16				Boring terminated at 16.0'.

Summary of Well Construction

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers.
Screen and riser 2" stainless steel - 305.
Screen slot size .010" extends from 5.0' - 16'.
Screen pack material is Grade 00 sand extending from 3.5' - 16.0'.
Hydrated bentonite pellet seal from 2' - 3.5'.
Surface seal consists of a cement/bentonite grout.
4" steel protective casing and locking cap.

CUR 001 1082

SURFACE ELEVATION 51.8
DATE STARTED 7/25/89
DATE COMPLETED 7/25/89
CLASSIFIED BY VAD/RGP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. MW-3
Project. 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG MW-4

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
					Samples were obtained using a 3-inch O.D. split-barrel sampler driven by a 140-pound hammer. Well decommissioned on 7/9/90.
0		0-2	1.3	6, 12, 15, 19	Brown medium to coarse SAND and SILT, some fine to coarse gravel, firm, dry.
2		2-4	1.3	29, 22, 22, 23	Black fine to coarse SAND, some silt, little clay, compact, moist.
4		4-6	1.0	9, 5, 7, 7	Black fine to medium SAND and SILT, some clay, medium to stiff, wet.
6		NS			
8		NS			
10		10-12	1.7	4, 5, 5, 8	Reddish-brown SILT, some fine to medium sand, some clay, soft, wet.
12		NS			
14		14-16	1.0	5, 24, 18, 20	Dark red weathered Brunswick SANDSTONE, dry.
16					

Boring terminated at 16.5'.

Summary of Well Construction

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers.
Screen and riser 2" stainless steel - 305.
Screen slot size .010" extends from 5.5' - 16.5'.
Screen pack material is Grade 00 sand extending from 3.6' - 16.5'.
Hydrated bentonite pellet seal from 2.1' - 3.6'.
Surface seal consists of a cement/bentonite grout.
4" steel protective casing and locking cap.

SURFACE ELEVATION 54.4
DATE STARTED 8/9/89
DATE COMPLETED 8/9/89
CLASSIFIED BY VAD-RGP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. MW-4
Project. 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1083

SUBSURFACE LOG MW-5U

DEPTH (FT)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
							Boring advanced with 4¼-inch ID hollow-stem augers.
							Black fine to coarse SAND, some fine gravel, metal, wood, medium dense, moist to wet (Fill)
							Gray fine GRAVEL, some coarse sand, very dense, wet.
							Grayish-red fine to coarse SAND, little silt, dense, wet.

Bottom of boring at 9 feet.

▼ - Represents water level taken on 7/5/90.

* MW-5U was not sampled. Geologic log based on MW-5L.

Well Completion Details

2-inch dia. (0.010-inch slot) stainless steel screen extends from 4.0 to 9.0 feet below grade.

2-inch dia. stainless steel riser extends from 2.3 feet above to 4 feet below grade.

Grade Ø silica sand from 3.8 to 9 feet below grade.

Grade ØØ silica sand from 3.3 to 3.8 feet below grade.

Hydrated bentonite slurry from 2 to 3.3 feet below grade.

Cement extends from 2 feet below grade to a 2'x2'x1' surface pad.

4-inch locking steel protective casing extends from 2.5 feet above to 1.7 feet below grade.

SURFACE ELEVATION 53.35'
DATE STARTED 7/2/90
DATE COMPLETED 7/2/90
CLASSIFIED BY VAD

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. MW-5U
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1084

SUBSURFACE LOG MW-5L

DEPTH (FT)	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
				Boring advanced with 4¼-inch ID hollow-stem augers. Sampled with 2-inch or 3-inch split-spoons driven by a 140-lb. hammer.
0	0-2'	1.8'	5, 6, 11, 11	Black fine to coarse SAND, some fine gravel, metal wood, medium dense, moist to wet (Fill).
2	2-4'	0.6'	22, 34, 51, 32	Gray fine GRAVEL, some coarse sand very dense, wet.
4	4-6'	1.9'	10, 22, 25, 14	
6	6-8'	1.6'	14, 15, 18, 16	Grayish-red fine to coarse SAND, little silt, dense, wet.
8	8-10'	NR	6, 8, 8, 8	
10	10-12	2.0'	14, 16, 21, 22	Grades with trace clay.
12	12-14	1.2'	20, 22, 61, 30	Reddish-brown SILT, some fine to medium sand, trace clay, very dense, wet.
14	14-15	0.6'	26, 100/.?	Red weathered Brunswick SANDSTONE.
16				Bottom of boring at 15 feet.

▼ - Represents water level taken 7/5/90.

Well Completion Details, on page 2 of 2.

CUR 001 1085

SURFACE ELEVATION 53.05'
DATE STARTED 7/2/90
DATE COMPLETED 7/2/90
CLASSIFIED BY VAD

PROJECT Con Ed - CSMI
SHEET 1 OF 2
NO. MW-5L

BLASLAND & BOUCK ENGINEERS, P.C.

DEPTH	SAMPLES	SAMPLE NO	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN

SUBSURFACE LOG MW-5L

DESCRIPTION

Well Completion Details

2-inch dia. (0.010-inch slot) stainless steel screen extends from 10.8 to 14.8 feet below grade.

2-inch dia. stainless steel riser extends from 1.7 feet above to 10.8 feet below grade.

Grade Ø silica sand from 10.3 to 15 feet below grade.

Grade ØØ silica sand from 9.8 to 10.3 feet below grade.

Hydrated bentonite slurry from 8 to 9.8 feet below grade.

Cement extends from 2 feet below grade to a 2'x2'x1' surface pad.

4-inch locking steel protective casing extends from 1.8 feet above to 2.4 feet below grade.

CUR 001 1086

SURFACE ELEVATION 53.05'
DATE STARTED 7/2/90
DATE COMPLETED 7/2/90
CLASSIFIED BY VAD

PROJECT Con Ed - CSMI
SHEET 2 OF 2
NO. MW-5L
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG TWP-1

DEPTH (FT)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
							Boring advanced with 4¼-inch I.D. hollow-stem augers, sampled with 2-inch or 3-inch split-spoons, driven by a 140-lb. hammer.
0		0-2'	2.0'	6, 19, 34, 27			Black SILT and fine to medium SAND, some metal, brick, glass, very dense, damp (fill).
2		2-4'	2.0'	14, 8, 10, 19			Grades to fine to medium SAND, some silt, moist.
4		4-6'	1.8'	9, 12, 13, 13			Gray/red fine to medium SAND, little silt, trace gravel, medium dense, moist.
6		6-8'	1.6'	8, 8, 10, 10			Grades to fine SAND, some silt, saturated.
8		8-10'		9, 10, 14, 16			Reddish-gray SILT, some fine sand, trace clay, medium dense, wet.
							Grayish-red fine SAND.
10							Bottom of boring at 10.3 feet.

▼ - Represents the water level on 7/5/90.

Well Completion Details

2-inch dia. (0.010-inch slot) stainless steel screen extends from 5 to 10 feet below grade.

2-inch dia. stainless steel riser extends from 1.5 feet above to 5 feet below grade.

Grade Ø silica sand from 4.6 to 10.3 feet below grade.
Grade ØØ silica sand from 4.0 to 4.6 feet below grade.
Hydrated bentonite slurry from 4.0 feet below grade to surface.

Abandonment Details 7/9/90

The well was overdrilled with 6¼-inch I.D. hollow-stem augers to 10.5 feet. All well materials were removed and the bore hole was tremie-grouted to the surface with a cement/bentonite slurry.

SURFACE ELEVATION 52.92'
DATE STARTED 6/30/90
DATE COMPLETED 6/30/90
CLASSIFIED BY VAD

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. TWP-1
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1087

SUBSURFACE LOG TWP-2

DEPTH (FT.)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
							Boring advanced with 4¼-inch I.D. Hollow stem augers. Sampled with 2-inch or 3-inch split spoons driven by a 140 lb. hammer.
0		0-2'	0.8'	12, 60/.3			Black fine to coarse SAND, some silt, metal, glass, very dense, damp. (FILL)
2		2-4'	0.5'	18, 32, 70/.2			Grades to brown SAND, some fine gravel and silt
4		4-6'	1.8'	8, 7, 7, 7			
6		6-8'	1.3'	7, 8, 22, 23			Grades with little silt trace clay (Contorted striations) wet at 6.3',
8		8-10'	1.0'	11, 9, 7, 7			← Brown/red SILT, some fine sand, striated.
10							Bottom of boring at 10.3 feet

Y - Represents the water level on 7-5-90

Well completion details

2-inch d.a. (0.010-inch slot) stainless steel screen extends from 5 to 10 feet below grade.

2-inch d.a. stainless steel riser extends from 2.0 feet above to 5 feet below grade.

Grade Ø Silica sand from 4.5 to 10.3 feet below grade.

Grade ØØ silica sand from 4.0 to 4.5 feet below grade.

Hydrated bentonite slurry from 4.0 feet below grade to surface.

Abandonment Details 7-9-90

The well was overdrilled with 6¼-inch I.D. hollow stem augers to 10.5 feet. All well materials were removed and the bore hole was tremie grouted to the surface with a cement/bentonite slurry.

SURFACE ELEVATION 53.02'
DATE STARTED 7-1-90
DATE COMPLETED 7-1-90
CLASSIFIED BY YAD

PROJECT C.S.M.I.-SITE
SHEET 1 OF 1
NO. TWP-2
JOB NO. 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1088

SUBSURFACE LOG TWP-3

DEPTH (FT)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
							Boring advanced with 4¼-inch I.D. hollow-stem augers, sampled with 2-inch or 3-inch split-spoons, driven by a 140-lb. hammer.
0		0-2'	2.0'	16, 32, 45, 76			Black SILT, some fine to medium sand, glass, metal fragments, wood and brick (fill), very dense, dry.
2		2-3.5'	1.3'	64, 52, 110/.5			
4		4-6'	2.0'	5, 6, 16, 22			Gray/red fine to medium SAND, little silt and coarse sand (red and green striations) medium dense, moist.
6		6-8'		23, 25, 32, 20			Wet at 6.4'.
8		8-10'	1.8'	5, 7, 9, 7			Grades to fine SAND and SILT, saturated.
10							

Bottom of boring at 10.3 feet.

▼ - Represents the water level on 7/5/90.

Well Completion Details

2-inch dia. (0.010-inch slot) stainless steel screen extends from 5 to 10 feet below grade.

2-inch dia. stainless steel riser extends from 2.0 feet above to 5 feet below grade.

Grade 0 silica sand from 4.5 to 10.25feet below grade.
Grade 00 silica sand from 4.0 to 4.5 feet below grade.
Hydrated bentonite slurry from 4.0 feet below grade to surfac

Abandonment Details 7/9/90

The well was overdrilled with 6¼-inch I.D. hollow-stem auger: to 10.5 feet. All well materials were removed and the bore hole was tremie-grouted to the surface with a cement/bentonite slurry.

CUR 001 1089

SURFACE ELEVATION 53.76'
DATE STARTED 6/30/90
DATE COMPLETED 6/30/90
CLASSIFIED BY VAD

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. TWP-3
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG TWP-4

DEPTH (FT.)	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
				Boring advanced with 4¼-inch I.D. hollow-stem augers, sampled with 2-inch or 3-inch split-spoons, driven by a 140-lb. hammer.
0	0-2'	1.0'	23, 10/.5	Black fine to coarse SAND, some silt, metal, glass, brick and wood, very dense, damp (fill).
2	2-4'	2.0'	7, 50, 31, 49	Disintegrated concrete (2.4' - 3.6')
				Moist at 3.6'.
4	4-6'	2.0'	1, 2, 13, 21	Organic material (4.0' - 5.0') Wet at 5.0 feet.
6	6-8'	1.4'	12, 18, 49, 27	Organic material (6.0'-7.0') Red fine to coarse SAND, very dense, wet.
8	8-10'	1.5'	8, 8, 8, 10	Reddish-gray SILT, little fine sand, medium dense, wet to saturated.
10				Bottom of boring at 10.4 feet.

▼ - Represents the water level on 7/5/90.

Well Completion Details

2-inch dia. (0.010-inch slot) stainless steel screen extends from 5 to 10 feet below grade.

2-inch dia. stainless steel riser extends from 1.7 feet above to 5 feet below grade.

Grade Ø silica sand from 4.5 to 10.4 feet below grade.
Grade ØØ silica sand from 4.0 to 4.5 feet below grade.
Hydrated bentonite slurry from 4.0 feet below grade to surface.

Abandonment Details 7/9/90

The well was overdrilled with 6¼-inch I.D. hollow-stem augers to 10.5 feet. All well materials were removed and the bore hole was tremie-grouted to the surface with a cement/bentonite slurry.

SURFACE ELEVATION 53.02'
DATE STARTED 7/1/90
DATE COMPLETED 7/1/90
CLASSIFIED BY VAD

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. TWP-4
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1090

SUBSURFACE LOG TWP-5

DEPTH (FT.)	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
				Boring advanced with 4¼-inch I.D. hollow-stem augers, sampled with 2-inch or 3-inch split-spoons, driven by a 140-lb. hammer.
0	0-2'	2.0'	40, 42, 51, 100	Black fine to coarse SAND, some silt, wood, glass, metal, very dense, damp (fill).
2	2-4'	2.0'	150, 51, 60, 34	Grades to moist.
4	4-6'	1.2'	13, 17, 22, 24	Grades with little silt, trace clay.
6	6-8'	1.2'	36, 36, 42, 37	Wet at 6 feet.
8	8-10'			Reddish-gray SILT, little fine sand, wet to saturated.
10				Bottom of boring at 10.4 feet.

▼- Represents the water level on 7/5/90.

Well Completion Details

2-inch dia. (0.010-inch slot) stainless steel screen extends from 5 to 10 feet below grade.

2-inch dia. stainless steel riser extends from 1.8 feet above to 5 feet below grade.

Grade 0 silica sand from 4.5 to 10.4 feet below grade.
Grade 00 silica sand from 4.0 to 4.5 feet below grade.
Hydrated bentonite slurry from 4.0 feet below grade to surface.

Abandonment Details 7/9/90

The well was overdrilled with 6¼-inch I.D. hollow-stem augers to 10.5 feet. All well materials were removed and the bore hole was tremie-grouted to the surface with a cement/bentonite slurry.

SURFACE ELEVATION 53.88'
DATE STARTED 7/1/90
DATE COMPLETED 7/1/90
CLASSIFIED BY VAD

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. TWP-5
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1091

SUBSURFACE LOG St

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	0.9	7, 11, 17, 19			Black fine to coarse SAND and SILT, some fine gravel, compact, damp.
2		2-4	1.4	12, 12, 12, 9			Black-red fine to coarse SAND and fine GRAVEL, some ash, firm, moist.
4		4-6	1.8	5, 11, 25, 25			Reddish-grey fine to medium SAND and SILT, little clay, stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1092

SURFACE ELEVATION ______
DATE STARTED 8/8/89
DATE COMPLETED 8/8/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. St

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-1

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.3	21 30 26 21			Brown-white fine to coarse SAND, some fine to medium gravel, little silt, black-stained in sections, firm, damp.
2		2-4	0.7	20 13 12 10			Grades to moist.
4		4-6	0.4	3 6 6 5			Black fine to coarse GRAVEL and SAND, little silt, loose, wet
6							Boring terminated at 6'.

Notes:

HNU Reading 1.2 ppm in borehole, 1.0 ppm in breathing zone.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1093

SURFACE ELEVATION ______
DATE STARTED 7/26/89
DATE COMPLETED 7/26/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-1

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-2

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	.7	20, 20, 32, 21			Brown-white fine to coarse GRAVEL and CONCRETE, some medium sand, some silt, firm, dry.
2		2-4	.8	15, 18, 15, 17			Brown fine to coarse GRAVEL and SAND, some silt, firm, moist
4		4-6	.9	6, 5, 7, 6			Black-brown fine to coarse SAND and SILT, some grey disintegrated black-stained concrete, loose, wet.
6							Boring terminated at 6'.

Notes:

HNU Reading 0.2 ppm in breathing zone.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1094

SURFACE ELEVATION ______
DATE STARTED 7/26/89
DATE COMPLETED 7/26/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-2

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-3

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0	0-2	1.3				Red disintegrated BRICK.
			12			Grey medium to coarse SAND and GRAVEL, some silt, firm, dry.
1			7			Brown-black fine to coarse SAND and GRAVEL, some silt, oil-stained, firm, moist.
			24			
2			95			CONCRETE FILL.
	2.5-4.5	1.3				Augered 2' to 2.5'.
3			10			Black SILT, some sand, little fine to coarse gravel, moist
			10			
4			8			
			7			
5	4.5-6.5	1.6	9			
			10			
6			8			
						Boring terminated at 6.5'.

Notes:

HNU Readings in borehole at concrete 15 to 20 ppm. Breathing zone 1.6 ppm.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1095

SURFACE ELEVATION ________
DATE STARTED 7/27/89
DATE COMPLETED 7/27/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-3

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-4

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.2	9, 31, 45, 30			Grey-white CONCRETE and brown medium to coarse SAND, little glass, metal fragments, firm, dry.
2		2-4	1.0	22, 22, 29, 25			Black fine to coarse SAND and GRAVEL, some silt, little red brick, metal fragments, firm, moist.
4		4-6	1.2	38, 42, 8, 21			Black fine to coarse SAND and SILT, some concrete, ash, black-stained, compact to firm, wet.
6							Boring terminated at 6'.

Notes:

HNU Readings 1.4 ppm in breathing zone, 5 to 18 ppm in borehc

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION	
DATE STARTED	7/27/89
DATE COMPLETED	7/27/89
CLASSIFIED BY	VAD, RCP
PROJECT	CSMI 430.01
SHEET	1 OF 1
NO.	SB-4

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-5

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	DESCRIPTION
0	0-2	1.4			Black fine to coarse SAND and SILT, some gravel, some disintegrated concrete, compact, damp.
			24		
			40		
1					
			69		Grades to moist.
			80		
2	2-4	1.4			
			26		
3			12		
			12		
			11		
4	4-6	1.8			Brown SILT and SAND, some clay, soft,
			2		
5			3		Reddish-brown SILT and SAND, stiff, wet.
			20		
6			21		Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ____

DATE STARTED 7/27/89

DATE COMPLETED 7/27/89

CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01

SHEET 1 OF 1

NO. SB-5

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-6

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.5	21, 44, 90, 70			Black medium to coarse SAND and GRAVEL, some concrete, some silt, little brick, ash, wood chips, metal, black-stained, very compact, dry.
2		2-4	1.0	38, 38, 55, 70			Grades to moist.
4		4-6	1.0	21, 15, 8, 19			Black fine to coarse SAND and SILT, some gravel, little concrete, oil-stained, firm, wet.
6							Boring terminated at 6'.

Notes:

HNU Readings 1.2 ppm in breathing zone, 4.0 ppm in borehole.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1050

SURFACE ELEVATION ______
DATE STARTED 7/27/89
DATE COMPLETED 7/27/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-6

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-7

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.8	10, 39, 50, 67			Black-brown SAND and GRAVEL, some silt, brick, concrete, wood, compact to firm, dry to moist.
2		2-4	.9	57, 16, 12, 10			
4		4-6	1.6	3, 2, 7, 15			Grey-green fine to medium SAND and SILT, some fine to medium gravel, little clay, soft,
5							Reddish-brown fine to coarse SAND and SILT, some fine to medium gravel, soft, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1099

SURFACE ELEVATION	
DATE STARTED	7/27/89
DATE COMPLETED	7/27/89
CLASSIFIED BY	VAD, RCP
PROJECT	CSMI 430.01
SHEET	1 OF 1
NO.	SB-7

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-8

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.4	41, 50, 42, 75			Black-brown medium to coarse GRAVEL and SAND, some silt, little concrete, glass, metal fragments, compact, dry.
2		2-4	.8	75, 42, 58, 39			Brown-grey medium to coarse GRAVEL and CONCRETE, little sand, little silt, compact, damp.
4		4-6		8, 9, 10			Black fine to coarse SAND and SILT, some gravel, little concrete, glass, firm, wet.
6							Boring terminated at 6'.

Notes:

HNU Readings 1.0 ppm in breathing zone, 10 to 18 ppm in boreho

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUK 001 1100

SURFACE ELEVATION _____
DATE STARTED 7/28/89
DATE COMPLETED 7/28/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-8

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-9

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	.9	13, 13, 18, 6	Black-stained fine to coarse SAND and SILT, some fine to coarse gravel, little concrete, firm to loose, dry to damp.
2	2-4	1.0	5, 6, 7, 4	
4	4-6	1.5	3, 27, 9, 9	Black-brown fine to medium SAND and SILT, some fine to medium gravel, trace clay, stiff, wet.
6				Boring terminated at 6'.

Notes:

HNU Readings 1.2 ppm in breathing zone, 5.4 ppm in borehole.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1101

SURFACE ELEVATION _____
DATE STARTED 7/28/89
DATE COMPLETED 7/28/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-9

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-10

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0	0-2	1.3	10, 20, 25, 48			Black-brown fine to coarse SAND and GRAVEL, some silt, metal, concrete, wood, glass, compact, damp.
2	2-4	1.0	17, 10, 22, 8			
4	4-6	1.6	8, 11, 11, 11			Grey-reddish-brown fine to medium SAND, some silt, some clay.
						Red fine SAND and SILT, some clay, medium stiff, wet.
6						Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION
DATE STARTED 8/7/89
DATE COMPLETED 8/7/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-11

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.8	6, 17, 47, 54			Black-brown fine to medium SAND and GRAVEL, some silt, wood, glass, metal, very compact, moist.
2				100/.			Augered 2' to 3'.
3		3-5	1.8	12, 52, 29, 19			
5		5-7	2.0	10, 12, 24, 25			Grey-reddish-brown fine to medium SAND and SILT, some clay, hard, striated, wet.
7							Boring terminated at 7'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1103

SURFACE ELEVATION ____	PROJECT CSMI 430.01	BLASLAND & BOUCK ENGINEERS, P.C.
DATE STARTED 8/7/89	SHEET 1 OF 1	
DATE COMPLETED 8/7/89	NO. SB-11	
CLASSIFIED BY VAD, RGP		

SUBSURFACE LOG SB-12

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.4	9			Black-brown fine to medium SAND and GRAVEL, some silt, little metal, glass, wood, compact, damp.
1				19			
				35			
2				46			
		2-4	1.4	25			
3				22			Grades to moist.
				50			
4				17			
		4-6	1.3	10			Grey-reddish-brown fine to medium SAND and SILT, striated, stiff, wet.
5				10			
				10			
6				25			Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ____
DATE STARTED 8/7/89
DATE COMPLETED 8/7/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-12

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-13

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.6	24, 52, 52, 76			Black-stained fine to medium SAND, some silt, gravel, metal, glass, very compact, damp.
2		2-4	0.4	14, 10, 6, 4			
4		4-6	2.0	4, 5, 23, 29			Grey-brown fine SAND and SILT, little clay, medium stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ________
DATE STARTED 8/3/89
DATE COMPLETED 8/3/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-13

BLASLAND & BOUCK ENGINEERS, P.C.

CUT CUT CUT

SUBSURFACE LOG SB-14

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	1.2	17, 24, 26, 23	Black-brown fine to medium SAND, SILT and fine to medium GRAVEL, some metal, wood, glass, compact, damp.
2	2-4	0.3	15, 9, 9, 13	Grades to moist.
4	4-6	1.3	10, 6, 12, 24	Grey-brown fine to medium SAND and SILT, little fine to medium gravel, trace clay, medium stiff, wet.
6				Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION
DATE STARTED 8/3/89
DATE COMPLETED 8/3/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-14

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-15

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0	0-2	1.3	7, 12, 17, 24			Black-brown fine to medium SAND and SILT and fine to medium GRAVEL, some metal, glass, firm, damp.
2	2-4	1.1	27, 30, 20, 9			
4	4-6	1.3	7, 4, 3, 2			Grey fine to medium SAND and SILT, little clay, trace fine gravel, soft, wet.
6						Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION

DATE STARTED 8/3/89

DATE COMPLETED 8/3/89

CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01

SHEET 1 OF 1

NO. SB-15

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-16

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	1.5	12, 30, 46, 27	Brown fine to coarse GRAVEL, some sand, little silt, trace ashes, brick, compact, dry.
2	2-4	0.6	21, 18, 21, 19	
4	4-6	1.7	3, 5, 5, 19	Brown-black fine to coarse SAND, some grave, some silt, trace clay, loose to firm, moist
6	6-8	1.3	21, 26, 12, 13	Reddish-brown SILT and SAND, medium stiff, wet. (from 7')
8				Boring terminated at 8'.

Notes:
HNU Readings 1.0 ppm in breathing zone, 2.0 ppm in borehole.
Drilled with a CME-55 rig with 4-1/4" hollow-stem augers.
Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1108

SURFACE ELEVATION ________
DATE STARTED 7/26/89
DATE COMPLETED 7/26/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-16

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-17

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.5	16, 33, 37, 52			Black-stained fine to medium SAND and SILT, some fine to medium gravel, concrete, wood, metal, compact, damp.
2		2-4	0.6	70, 21, 10, 9			CONCRETE FILL.
4		4-6	1.2	5, 3, 13, 22			Grey-brown fine to medium SAND and SILT, little clay, soft to medium stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1109

SURFACE ELEVATION ______
DATE STARTED 8/3/89
DATE COMPLETED 8/3/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-17

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-18

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.8	23, 96, 53, 64			Black-stained fine SAND and SILT, some fine to medium gravel, wood, and metal, very compact, damp.
2		2-4	2.0	84, 21, 26, 20			Grades to moist.
4		4-6	1.6	21, 24, 29, 23			Grey fine SAND and SILT, little clay, hard, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1110

SURFACE ELEVATION ______
DATE STARTED 8/2/89
DATE COMPLETED 8/2/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-18

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-19

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	0.9	14, 17, 15, 62			Black-brown fine to medium SAND and SILT, some fine to medium gravel, metal, glass, wood, firm, damp.
2		2-4	1.1	19, 27, 20, 82			Grades to moist.
4		4-6	1.6	40, 18, 10, 11			Grey fine to medium SAND and SILT, trace clay, fine gravel, stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1111

SURFACE ELEVATION ______
DATE STARTED 8/3/89
DATE COMPLETED 8/3/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-19

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-21

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.2	12, 15, 17, 19			Black, varved fine to coarse SAND and SILT, some fine to coarse gravel, little metal, glass, firm, dry to moist.
2		2-4	1.0	18, 12, 13, 16			
4		4-6	0.6	12, 17, 21, 23			Black-grey SAND and SILT, some caly, little metal chips, stiff, moist.
6		6-8	NR	25, 26, 32, 19			Grades to saturated.
8							Boring terminated at 8'.

Notes:
~~HNU~~ Readings 1.5 ppm in breathing zone, 2.2 ppm in borehole.
Drilled with a CME-55 rig with 4-1/4" hollow-stem augers.
Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ____
DATE STARTED 7/26/89
DATE COMPLETED 7/26/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-21

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1112

SUBSURFACE LOG SB-22

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.6	13, 34, 75, 115			Black medium to coarse SAND and GRAVEL, some silt, little brick, glass, black-stained, very compact, dry.
2		2-4	1.0	45, 37, 32, 37			
4		4-6	1.4	10, 10, 10, 14			Black fine to coarse SAND and SILT, some wood chips, fine gravel, firm, moist.
6		6-8	2.0	21, 37, 32, 21			Black fine to medium SAND and SILT, dense/stiff, wet.
							Reddish-brown fine to medium SAND and SILT, striated, dense/stiff, saturated.
8							Boring terminated at 8'.

Notes:

HNU Readings 1.6 ppm in breathing zone, 5.0 ppm in borehole. Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ______

DATE STARTED 7/28/89

DATE COMPLETED 7/28/89

CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01

SHEET 1 OF 1

NO. SB-22

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1113

SUBSURFACE LOG SB-23

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.1	19 30 23 14			Black-stained fine to medium SAND and SILT, some fine to medium gravel, compact, damp.
2		2-4	1.2	34 20 17 31			
4		4-6	1.6	33 25 27 17			Grey fine to medium SAND and SILT, compact, wet.
6							Boring terminated at 6'.

Notes:

HNU Readings 0.5 ppm in breathing zone, 6.0 ppm in borehole.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1114

SURFACE ELEVATION ______
DATE STARTED 8/2/89
DATE COMPLETED 8/2/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-23

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-24

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.0	13, 22, 31, 29			Black-stained fine to medium SAND and SILT, some fine to medium gravel, compact, moist.
2		2-4	.1	62, 47, 28, 27			
4		4-6	.6	31, 29, 48, 33			Grades to wet.
6							Boring terminated at 6'.

Notes:

HNU Readings 0.4 ppm in breathing zone, 100 ppm in borehole.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1115

SURFACE ELEVATION ______
DATE STARTED 8/2/89
DATE COMPLETED 8/2/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-24

BLASLAND & B
ENGINEERS, P.C.

SUBSURFACE LOG SB-25

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	0.4	5, 9, 45, 38	Black-brown fine SAND and SILT, some wood chips, metal, compact, damp.
2	2-4	0.9	42, 45, 30, 32	Black-brown fine to medium SAND and SILT, some fine gravel, metal, wood, trace clay, compact, moist.
4	4-6	1.2	12, 13, 25, 34	Grey fine SAND and SILT, little clay, firm, wet. (from approx. 4.6')
6				Boring terminated at 6'.

Notes:

HNU Readings 1.8 ppm in breathing zone, 10.4 ppm in borehole.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 0116

SURFACE ELEVATION

DATE STARTED 8/2/89

DATE COMPLETED 8/2/89

CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01

SHEET 1 OF 1

NO. SB-25

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-27

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	.3	2, 3, 5, 4			Black fine to coarse SAND and GRAVEL, some silt, oil-stained, loose, moist.
2		2-4	0.3	3, 3, 3, 5			
4		4-6	1.7	6, 7, 10, 11			Grey-brown fine to coarse SAND and medium to coarse GRAVEL, some silt, loose, wet.
6							Boring terminated at 6'.

Notes:

0-2' and 2-4' were combined due to lack of recovery.
HNU Reading in breathing zone 0.8 ppm.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ____
DATE STARTED 7/26/89
DATE COMPLETED 7/26/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-27

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 . 0117

SUBSURFACE LOG SB-28

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.3	12, 83, 35, 37			Black-stained fine to medium SAND and SILT, some metal fragments, wood chips, glass, very compact, damp.
2							Augered 2' to 3'.
3		3-5	.5	13, 15, 19, 12			Black-stained medium SAND and fine to medium GRAVEL, some silt, metal, wood chips, stiff, moist.
5		5-7	1.5	13, 12, 12, 13			Grey fine to medium SAND and SILT, trace clay, loose, wet. (from 6')
7							Boring terminated at 7'.

<u>Notes:</u>

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ______
DATE STARTED 8/2/89
DATE COMPLETED 8/2/89
CLASSIFIED BY VAD,RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-28

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-29

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	2.0	9, 15, 10, 18	Black fine to medium SAND and SILT, some gravel, wood, brick fragments, firm, damp.
2	2-4	1.2	23, 34, 64, 51	Grades to moist.
4	4-6	2.0	14, 10, 12, 13	
5				Grey fine to medium SAND and SILT, some clay, medium stiff, wet.
6				Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1119

SURFACE ELEVATION ____
DATE STARTED 8/1/89
DATE COMPLETED 8/1/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-29

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-30

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	0.6	11 15 10 18			Brown fine to coarse SAND, some silt, some medium to coarse gravel, firm, dry.
2		2-4	0.5	27 38 50 22			Black medium to coarse SAND and SILT, some large wood chips, compact, moist.
4		4-6	0.6	11 13 17 18			Grades to wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1120

SURFACE ELEVATION ______
DATE STARTED 8/1/89
DATE COMPLETED 8/1/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-30

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-31

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.2	4, 13, 72, 26			Brown medium to coarse SAND and SILT, some clay, little gravel, wood chips, compact, moist.
2		2-4	1.3	6, 8, 20, 14			Black-stained medium to coarse SAND and SILT, little wood chips, firm, moist.
4		4-6	1.0	12, 11, 8, 10			Black-stained fine to coarse SAND and SILT, some medium gravel, firm, wet.
6							Boring terminated at 6'.

Boring terminated at 6'.

Notes:

HNU Readings 1.0 ppm in breathing zone, 2.6 ppm in borehole.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ____
DATE STARTED ____
DATE COMPLETED ____
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-31

BLASLAND & BOUCK ENGINEERS, P.C.

CUR 001 1121

SUBSURFACE LOG SB-32

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0.2	1.1	7, 12, 28, 26	Black-stained fine to coarse SAND and SILT, some fine to medium gravel, compact, damp to moist.
2	2-4	0.8	24, 28, 35, 19	
4	4-6	0.2	10, 8, 5, 4	Brown-black fine to coarse SAND and SILT, firm, wet.
6				Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1122

SURFACE ELEVATION
DATE STARTED 8/1/89
DATE COMPLETED 8/1/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-32

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-33

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.0	4, 8, 12, 11			Black-stained fine to coarse SAND and SILT, some gravel, firm, moist.
2		2-4	0.7	12, 16, 12, 15			
4		4-6	NR	13, 13, 11, 10			
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1123

SURFACE ELEVATION ______
DATE STARTED 8/1/89
DATE COMPLETED 8/1/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-33

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-34

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.0	7, 6, 9, 14			Black-brown fine to medium SAND and SILT, some fine to medium gravel, concrete, brick, firm, damp.
2		2-4	1.2	36, 23, 8, 6			
4		4-6	1.3	4, 6, 14, 3			Grey-brown fine SAND and SILT, little clay, trace fine gravel, medium stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1124

SURFACE ELEVATION ______
DATE STARTED 8/3/89
DATE COMPLETED 8/3/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-34

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-35

DEPTH	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	DESCRIPTION
0	0-2	1.2	10, 50, 50, 24	Brown-red fine to medium SAND and SILT, little brick, compact, moist.
2	2-4	0.9	16, 24, 21, 8	Brown fine to coarse SAND and SILT, trace clay, hard, moist.
4	4-6	1.5	6, 4, 3, 3	Black fine to medium SAND and SILT, some clay, soft, moist.
6				Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1125

SURFACE ELEVATION ____
DATE STARTED 8/10/89
DATE COMPLETED 8/10/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-35

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-36

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.1	20, 60, 50, 39			Brown fine to medium SAND and SILT, some clay, trace brick, compact, moist.
2		2-4	1.5	11, 19, 13, 17			Grey-reddish-brown fine to medium SAND and SILT, little clay, stiff,
4		4-6	2.0	7, 16, 23, 27			
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1126

SURFACE ELEVATION ______
DATE STARTED 8/8/89
DATE COMPLETED 8/8/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-36

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-37

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0							Augered through 0.5' concrete slab.
0.5		.5-2	1.2	23, 30, 30			Black-reddish-brown fine to medium SAND, some silt, some fine to medium gravel, compact, damp.
2		2-4	0.8	7, 7, 6, 4			
4		4-6	1.4	3, 4, 10, 13			Reddish-grey fine to medium SAND and SILT, little clay, soft, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

SURFACE ELEVATION ____
DATE STARTED 8/8/89
DATE COMPLETED 8/8/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-37

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-38

DEPTH	SAMPLES	SAMPLE NO	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0							Augered through 0.5' concrete slab.
		.5-2	1.4	6			Brown-black fine to medium SAND, some silt, some fine to medium gravel, firm, damp.
1				23			
				44			
2		2-4	1.2	35			Reddish-grey fine to medium SAND and SILT, little fine gravel, compact, moist.
3				25			
				25			
				46			
4		4-6	1.0	20			Reddish-grey fine to medium SAND and SILT, trace clay, stiff, wet.
5				19			
				12			
				20			
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1128

SURFACE ELEVATION ______
DATE STARTED 8/8/89
DATE COMPLETED 8/8/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-38

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-39

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.2	8, 11, 9, 8			Brown fine to coarse SAND and SILT, little red brick, firm, moist.
2		2-4	1.2	5, 7, 10, 10			Brownish-red fine to medium SAND and SILT, stiff, wet.
4		4-6	1.4	7, 8, 10, 9			Reddish-brown fine to coarse SAND and SILT, stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1129

SURFACE ELEVATION
DATE STARTED 8/10/89
DATE COMPLETED 8/10/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-39

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-40

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.0	9, 11, 11, 14			Brown-black fine to medium SAND and SILT, trace fine gravel, firm, damp.
2		2-4	1.3	17, 20, 14, 9			Black-brown fine to medium SAND and SILT, some ash, stiff, moist.
4		4-6	1.6	5, 4, 4, 3			Black-stained fine to medium SAND and SILT, soft, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1130

SURFACE ELEVATION ______
DATE STARTED 8/10/89
DATE COMPLETED 8/10/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-40

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-41

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.5	9, 11, 17, 12			Black-brown fine to coarse SAND and fine to medium GRAVEL, some silt, metal fragments, firm, moist.
2		2-4	1.6	4, 4, 4, 12			Black-brownish-red fine to coarse SAND and SILT, some fine gravel, trace clay, soft, moist.
4		4-6	2.0	17, 20, 16, 17			Black-brownish-red fine to coarse SAND and SILT, little clay, medium stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1131

SURFACE ELEVATION ____

DATE STARTED 8/9/89

DATE COMPLETED 8/9/89

CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01

SHEET 1 OF 1

NO. SB-41

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-42

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.7	18, 20, 16, 16			Brown fine to coarse SAND, some silt, some clay, little brick, glass, compact, moist.
2		2-4	1.5	10, 5			Black fine to coarse SAND and GRAVEL, firm, moist.
3				6, 6			Brown fine to medium SAND and SILT, trace clay, soft to medium stiff, moist.
4		4-6	1.8	6, 14			Black fine to coarse SAND and GRAVEL, firm, wet.
5				25, 17			Brownish-red fine to coarse SAND and SILT, trace clay, hard, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1132

SURFACE ELEVATION ______
DATE STARTED 8/9/89
DATE COMPLETED 8/9/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-42

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-43

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2		8, 16, 30, 21			Brown-black fine to medium SAND and SILT, little metal, glass, wood, compact, moist.
2		2-4	0.8	16, 13, 13, 10			
4		4-6	1.0	6, 16, 16, 18			Grey-brown fine to medium SAND, some silt, little clay, stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1133

SURFACE ELEVATION ______
DATE STARTED 8/8/89
DATE COMPLETED 8/8/89
CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-43

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-44

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	0.4	6, 5, 3, 2			Brown-black fine to medium SAND and SILT, some fine to medium gravel, loose, damp.
2		2-4	0.1	4, 3, 2, 2			
4		4-6	1.3	6, 13, 25, 25			Brown fine to medium SAND and SILT, stiff, moist. Grades to wet.
6							Boring terminated at 6'.

<u>Notes</u>:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1134

SURFACE ELEVATION ____
DATE STARTED 8/7/89
DATE COMPLETED 8/7/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-44

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-45

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	.8	2, 2, 4, 6			Black-brown fine to coarse SAND and SILT, some fine to medium gravel, little ash, loose, moist.
2		2-4	1.0	7, 8, 12, 10			
4		4-6	1.1	8, 5, 4, 4			Reddish-grey fine to medium SAND and SILT, some clay, soft, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUP 001 1135

SURFACE ELEVATION ______

DATE STARTED 7/31/89

DATE COMPLETED 7/31/89

CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01

SHEET 1 OF 1

NO. SB-45

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-46

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	1.1	16, 18, 19, 15			Brown fine to medium GRAVEL, some sand, little ash, firm, damp.
2		2-4	1.1	14, 13, 9, 7			Brown-black fine to medium SAND and GRAVEL, some ash, some silt, firm, damp.
4		4-6	1.6	12, 8, 13, 17			Reddish-grey fine to medium SAND and SILT, some clay, stiff, wet.
6							Boring terminated at 6'.

Notes:

HNU Readings in breathing zone 0.6 ppm, 1.4 ppm in borehole.

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1136

SURFACE ELEVATION ______
DATE STARTED 7/31/89
DATE COMPLETED 7/31/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-46

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-47

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0–2		0-2	1.2	15, 21, 23, 16			Brown-green medium to coarse SAND and GRAVEL, some silt, firm, damp.
2–4		2-4	1.4	13, 12, 8, 6			Reddish-brown fine to coarse SAND, some gravel, some silt, little ash, little clay, firm, moist.
4–6		4-6		5, 7, 8, 12			Reddish-grey fine to medium SAND and SILT, little fine to medium gravel, trace clay, medium stiff, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1137

SURFACE ELEVATION ____
DATE STARTED 7/31/89
DATE COMPLETED 7/31/89
CLASSIFIED BY VAD, RCP

PROJECT CSMI 430.01
SHEET 1 OF 1
NO. SB-47

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-48

DEPTH	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2	0.8	18, 17, 12, 17			Brown-grey fine to coarse SAND and GRAVEL, some silt, firm, dry.
2		2-4	1.0	8, 9, 5, 5			Reddish-black fine to medium SAND, some silt, some fine to medium gravel, trace clay, medium to soft, moist.
4		4-6	1.2	4, 3			Grey fine SAND and SILT, some clay, some fine gravel, soft,
5				8, 12			Reddish-grey fine to medium SAND and SILT, little gravel, medium soft, wet.
6							Boring terminated at 6'.

Notes:

Drilled with a CME-55 rig with 4-1/4" hollow-stem augers. Samples were obtained using a 2" or 3" O.D. split-barrel sampler driven by a 140-pound hammer.

CUR 001 1138

SURFACE ELEVATION ______

DATE STARTED 7/31/89

DATE COMPLETED 7/31/89

CLASSIFIED BY VAD, RGP

PROJECT CSMI 430.01

SHEET 1 OF 1

NO. SB-48

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-50

DEPTH (FT)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2'	1.2'	4, 5, 4, 3			Brown fine to coarse SAND and SILT, loose, damp.
2		2-4'	1.2'	3, 6, 8, 5			
4		4-6'	1.0'	3, 2, 2, 3			Moist at 4.0'. Wet at 5.0'.
6							Bottom of boring at 6.0 feet.

Boring advanced with 2-inch dia. split-spoons driven by a 140 lb. hammer.

Boring was grouted from 6.0 feet to surface with cement/bentonite grout.

CUR 001 1139

SURFACE ELEVATION 51.61
DATE STARTED 7/11/90
DATE COMPLETED 7/11/90
CLASSIFIED BY RCP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. SB-50
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-51

DEPTH (FT)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0							Concrete slab. (Augered 0 to 1.0 feet)
1		1-3'	1.2'	3, 3, 3, 2			Brown fine to coarse SAND and SILT, loose, damp. Grades to red. Grades to gray.
3		3-5'	1.8'	4, 7, 11, 15			Gray fine to medium SAND, some silt, trace clay medium dense, moist. Wet at 4.0'.
5							Bottom of boring at 5.0 feet.
6							

Boring advanced with 2-inch dia. split-spoons driven by a 140-lb hammer.

Boring was grouted from 6.0 feet to surface with cement/bentonite grout.

CUR 001 1140

SURFACE ELEVATION 51.69
DATE STARTED 7/11/90
DATE COMPLETED 7/11/90
CLASSIFIED BY RCP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. SB-51
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-52

DEPTH (FT.)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0							Concrete slab. (Augered 0 to 1.0 feet)
1		1-3'	2.0'	4, 5, 3, 2			Brown fine to coarse SAND, some silt, loose, moist.
3		3-5'	1.5'	2, 1, 2, 2			Grades with trace clay.
5		5-7'	1.6'	3, 8, 13, 11			Wet at 5.0'.
7							Bottom of boring at 7.0 feet.

Boring advanced with 2-inch dia. split-spoons driven by a 140-lb hammer.

Boring was grouted from 6.0 feet to surface with cement/bentonite grout.

CUR 001 1141

SURFACE ELEVATION 51.77'
DATE STARTED 7/10/90
DATE COMPLETED 7/10/90
CLASSIFIED BY RCP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. SB-52
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-53

DEPTH (FT.)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2'	2.0'	30, 80, 120, 62			Brownish-gray fine GRAVEL and fine to coarse SAND, very dense, dry.
2		2-4'	2.0'	37, 28, 30, 23			Brown fine to medium SAND and SILT, dense, damp.
4		4-6'	1.3'	14, 11, 20, 22			Grades with some SILT, trace clay. Wet at 5.5'.
6							Bottom of boring at 6.0 feet.

Boring advanced with 2-inch dia. split-spoons driven by a 140-lb hammer.

Boring was grouted from 6.0 feet to surface with cement/bentonite grout.

CUR 001 1142

SURFACE ELEVATION 52.59'
DATE STARTED 7/10/90
DATE COMPLETED 7/10/90
CLASSIFIED BY RGP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. SB-53
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-54

DEPTH (FT)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2'	2.0'	26, 43, 37, 52			Brownish-gray, fine GRAVEL and fine to coarse SAND, very dense, dry.
2		2-4'	1.5'	24, 21, 33, 13			Brown fine to medium SAND and SILT, dense, damp.
4		4-6'	1.1'	10, 17, 8, 14			Grades with some SILT, little clay, moist. Wet at 5.0'.
6							Bottom of boring at 6.0 feet.

Boring advanced with 2-inch dia. split-spoons driven by a 140-lb hammer.

Boring was grouted from 6.0 feet to surface with cement/bentonite grout.

CUR 001 1143

SURFACE ELEVATION 52.43'
DATE STARTED 7/10/90
DATE COMPLETED 7/10/90
CLASSIFIED BY RCP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. SB-54
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-55

DEPTH (FT)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2'	1.6'	18, 34, 49, 55			Brownish-gray fine GRAVEL and fine to coarse SAND, very dense, dry.
2		2-4'	1.0'	31, 14, 10, 10			Reddish-brown fine to medium SAND and SILT, dense, damp.
4		4-6'	1.5'	11, 8, 9, 9			Moist at 4.0'. Wet at 5.0'.
6							Bottom of boring at 6.0 feet.

Boring advanced with 2-inch dia. split-spoons driven by a 140-lb hammer.

Boring was grouted from 6.0 feet to surface with cement/bentonite grout.

CUP 001 1144

SURFACE ELEVATION 52.43'
DATE STARTED 7/10/90
DATE COMPLETED 7/10/90
CLASSIFIED BY RGP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. SB-55
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG SB-56

DEPTH (FT.)	SAMPLES	SAMPLE NO.	RECOVERY (FEET)	BLOW COUNTS (per 6 inches)	WELL COLUMN	GEOLOGIC COLUMN	DESCRIPTION
0		0-2'	2.0'	27, 50, 75, 57			Brownish-gray fine GRAVEL and fine to course SAND, very dense, dry.
2		2-4'	1.0'	30, 21, 20, 14			Reddish-brown fine to coarse SAND and fine GRAVEL, very dense, damp.
4		4-6'	2.0'	8, 15, 12, 14			Reddish-brown fine to medium SAND and SILT, dense, moist. Wet at 5.0'.
6							Bottom of boring at 6.0 feet.

Boring advanced with 2-inch dia. split-spoons driven by a 140-lb hammer.

Boring was grouted from 6.0 feet to surface with cement/bentonite grout.

CUR 001 1145

SURFACE ELEVATION 52.79'
DATE STARTED 7/10/90
DATE COMPLETED 7/10/90
CLASSIFIED BY RCP

PROJECT Con Ed - CSMI
SHEET 1 OF 1
NO. SB-56
Project 430.01

BLASLAND & BOUCK ENGINEERS, P.C.

APPENDIX B

GEOTECHNICAL ANALYSIS

parratt wolff inc
FISHER RD., EAST SYRACUSE, N.Y. 13057
TELEPHONE AREA CODE 315/437-1429

Project No. L-89004
Project Title Laboratory Testing - CSMI Site File #430.01

Sieve Analysis ASTM D422

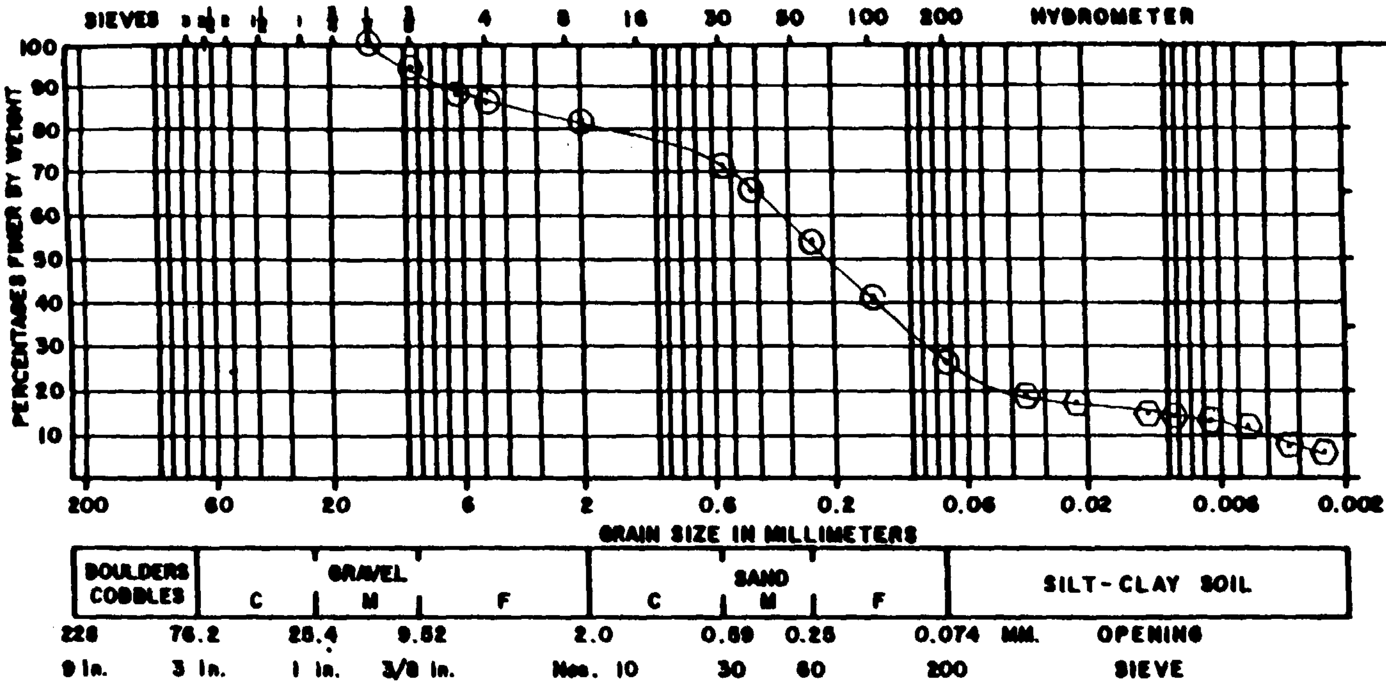
			Sieve Size - Percent Passing Sieve													
Sample #	Depth (in feet)		2"	1"	3/4"	1/2"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200	
MW - 1	2-4		-	-	-	100	95.0	88.4	86.6	81.9	71.2	66.2	53.9	41.2	26.9	
MW - 1	4-6		-	-	-	-	-	-	100	99.9	99.7	99.5	98.8	95.3	73.3	
MW - 4	10-12		-	-	-	-	-	100	99.8	99.7	99.4	99.3	99.1	98.7	92.7	
MW - 4	14-16		100	87.4	84.0	76.3	74.3	70.4	67.4	62.3	56.5	54.4	48.7	41.9	31.2	
SB - 28	2-4		-	100	90.5	86.1	85.0	78.2	73.7	63.0	44.4	39.6	32.3	26.7	21.3	

Remarks:

CUP 001 1147

Prewashed ASTM C-117
Yes X No
Performed By JG

GRAIN SIZE ANALYSIS



L-89004
Laboratory Testing
CSMI Site
File # 430.01

Sample # : MW-1
Depth : 2'-4'

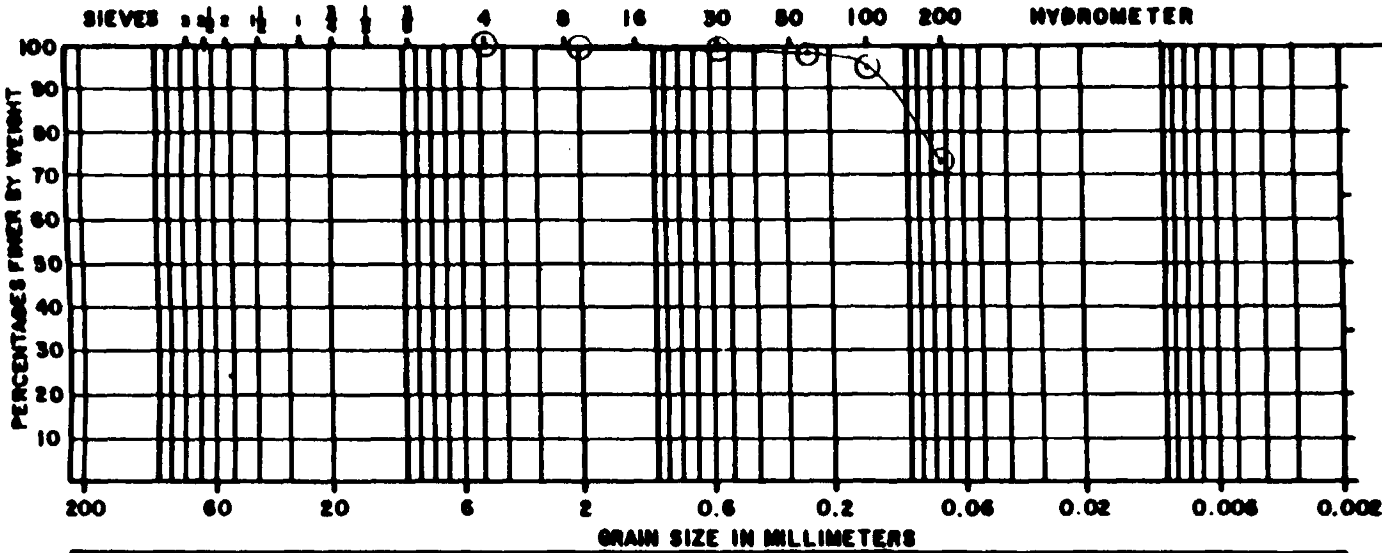
⊙ Sieve Analysis
⊙ Hydrometer Analysis

CUR 001 1148

pratt wolff inc
FISHER RD. EAST SYRACUSE, N.Y. 13057
TELEPHONE AREA CODE 315/437 1429

JOB NO. L-89004
REPORT NO. 1

GRAIN SIZE ANALYSIS



BOULDERS COBBLES	GRAVEL C	GRAVEL M	GRAVEL F	SAND C	SAND M	SAND F	SILT-CLAY SOIL

228	76.2	25.4	9.52	2.0	0.59	0.25	0.074 MM.	OPENING
9 In.	3 In.	1 In.	3/8 In.	Nos. 10	30	60	200	SIEVE

L-89004
Laboratory Testing
CSMI Site
File # 430.01

Sample # : MW-1
Depth : 4'-6'

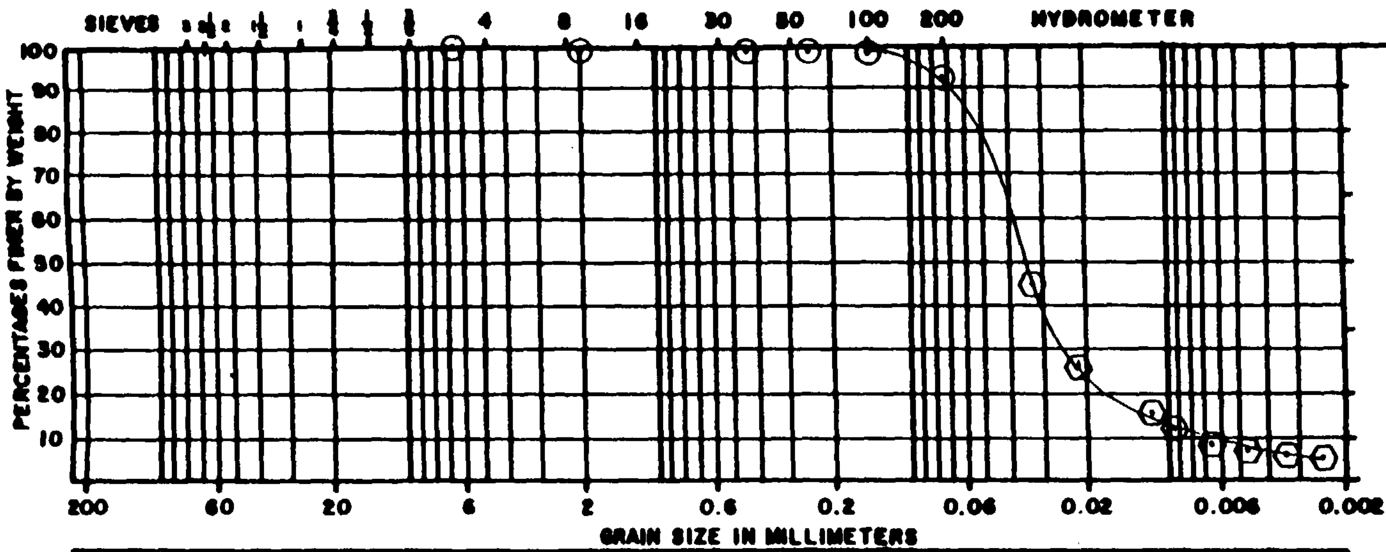
⊙ Sieve Analysis
⊙ Hydrometer Analysis

CUR 001 1149

Parratt Wolff inc
FISHER RD. EAST SYRACUSE N.Y. 13057
TELEPHONE AREA CODE 315/437 1429

JOB NO L-89004
REPORT NO. 2

GRAIN SIZE ANALYSIS



BOULDERS COBBLES	GRAVEL C	GRAVEL M	GRAVEL F	SAND C	SAND M	SAND F	SILT-CLAY SOIL

228 76.2 25.4 9.52 2.0 0.59 0.25 0.074 MM. OPENING
9 in. 3 in. 1 in. 3/8 in. Nos. 10 30 60 200 SIEVE

L-89004
Laboratory Testing
CSMI Site
File # 430.01

Sample # : MW-4
Depth : 10'-12'

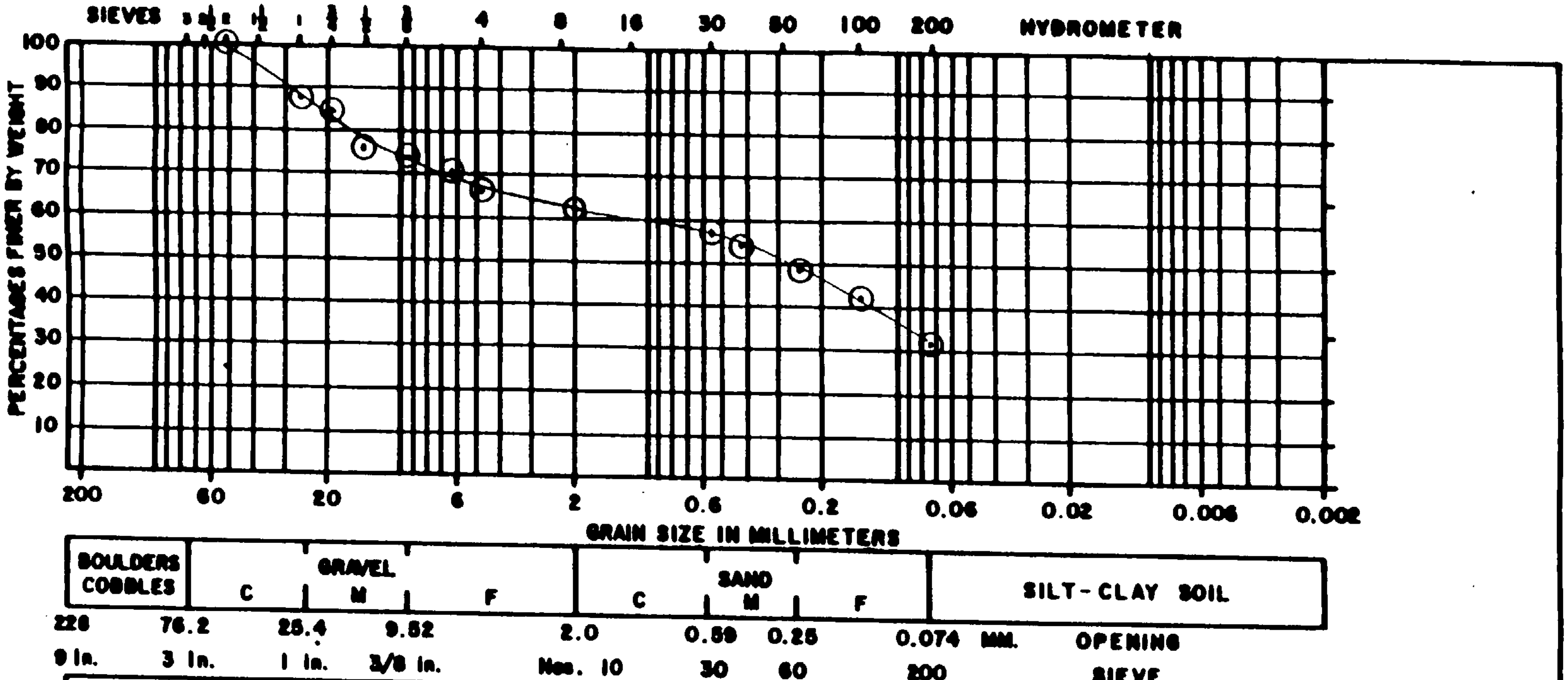
⊙ Sieve Analysis
⊙ Hydrometer Analysis

CUR 001 1150

parratt wolff inc
FISHER RD. EAST SYRACUSE N.Y. 13057
TELEPHONE AREA CODE 315/437-1429

JOB NO. L-89004
REPORT NO. 3

GRAIN SIZE ANALYSIS



L-89004
Laboratory Testing
CSMI Site
File # 430.01

Sample #: MW-4
Depth: 14'-16'

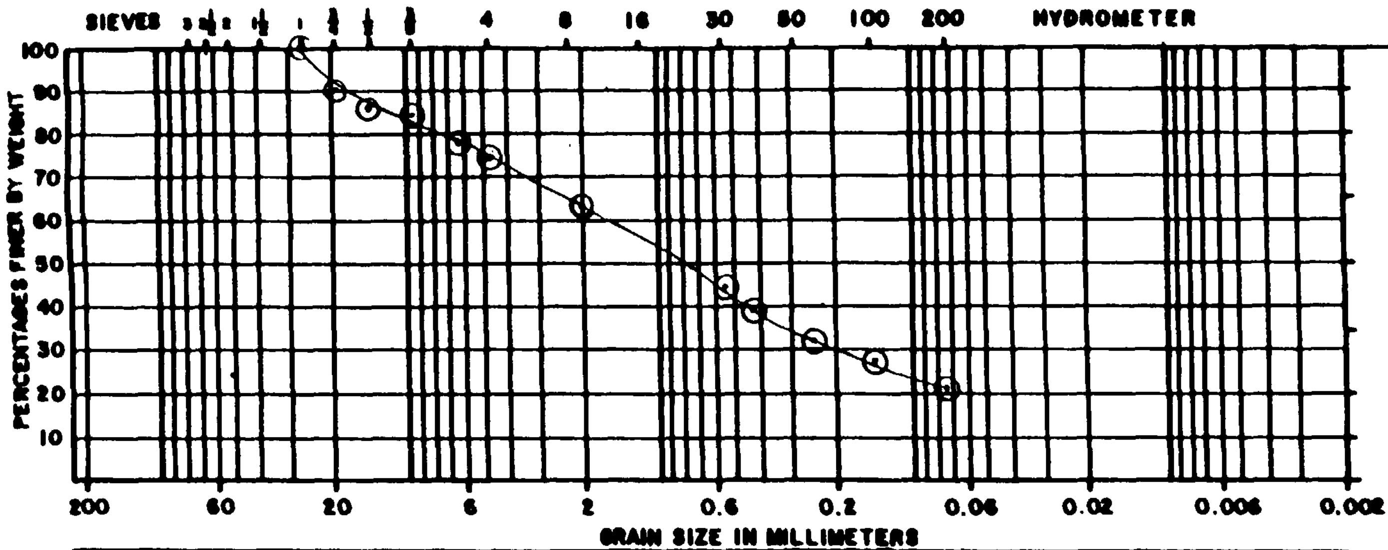
⊙ Sieve Analysis
⊙ Hydrometer Analysis

CUR 001 1151

parratt wolff inc
FISHER RD. EAST SYRACUSE N.Y. 13057
TELEPHONE AREA CODE 315/437 1429

JOB NO. L-89004
REPORT NO. 4

GRAIN SIZE ANALYSIS



BOULDERS COBBLES	GRAVEL C	GRAVEL M	GRAVEL F	SAND C	SAND M	SAND F	SILT-CLAY SOIL

228 76.2 25.4 9.52 2.0 0.59 0.25 0.074 MM. OPENING

9 In. 3 In. 1 In. 3/8 In. Nos. 10 30 60 200 SIEVE

L-89004
Laboratory Testing
CSMI Site
File # 430.01

Sample #: SB-28
Depth: 2'-4'

⊙ Sieve Analysis
⊙ Hydrometer Analysis

CUR 001 1152

parratt wolff inc
Fisher Rd East Syracuse N.Y. 13057
TELEPHONE AREA CODE 315/437-1429

JOB NO. L-89004
REPORT NO. 5

APPENDIX C

HYDRAULIC CONDUCTIVITY RESULTS

SLUGCOMP.WKS c. S.J. Rossello, March 1988

Project: ConEdison-CSMI site
Project No.: 430.01
Well No.: MW-1
Test Date: August 1989
Formation Tested: Overburden-Sand, Silt, Fill
Rising (R) or Falling (F) Head Test: RISING

		(cm)
Datum height (ft from gl)	0.00	0.00
Static Water Level (ft)	4.52	137.77
Depth to bottom of screen (ft from ground level)	17.00	518.16
Boring Diameter (in)	4.25	10.80
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	10.00	304.80
Depth to Boundary	20.00	609.60
Delta H at time 0 (ft)	5.50	167.64
Delta H at Time t (ft)	0.05	1.52
Time t (seconds)	294	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	1.0E-3	21.8
K (Hvorslev Time Lag)	6.9E-4	14.6
K (Hvorslev Variable Head)	6.8E-4	14.5

CUP 001 1154

File: MW1RREDU.WKS SITE: CONEDISON
Created: August 1989 CSMI SITE

RISING HEAD TEST 3' SLUG WELL ID: MW-1

Initial Height of water above Transducer: 10.35 (ft)
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Height of Water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		####	10.35		0.00	0.00	0.00
		####	10.35		30.30	0.00	0.00
		####	9.01		109.60	1.34	40.71
		####	9.45		111.10	0.90	27.37
		####	9.47		112.50	0.88	26.67
		####	9.49		114.00	0.86	25.97
		####	9.52		115.50	0.83	25.28
		####	9.54		117.00	0.81	24.58
		####	9.56		118.40	0.79	23.88
		####	9.59		119.90	0.76	23.18
		####	9.61		121.40	0.74	22.45
		####	9.61		122.80	0.74	22.45
		####	9.70		129.30	0.65	19.66
		####	9.75		134.40	0.60	18.26
		####	9.82		139.30	0.53	16.16
		####	9.84		144.30	0.51	15.43
		####	9.89		149.30	0.46	14.04
		####	9.91		154.30	0.44	13.34
		####	9.96		159.30	0.39	11.94
		####	10.00		164.30	0.35	10.54
		####	10.03		169.30	0.32	9.84
		####	10.05		174.30	0.30	9.14
		####	10.10		184.30	0.25	7.72
		####	10.12		194.30	0.23	7.02
		####	10.16		204.30	0.19	5.62
		####	10.19		214.30	0.16	4.92
		####	10.21		224.30	0.14	4.22
		####	10.21		234.30	0.14	4.22
		####	10.26		244.30	0.09	2.83
		####	10.26		254.30	0.09	2.83
		####	10.28		264.30	0.07	2.13
		####	10.30		294.30	0.05	1.40
		####	10.30		324.30	0.05	1.40
		####	10.33		354.30	0.02	0.70
		####	10.35		384.30	0.00	0.00
		####	10.37		414.30	-0.02	-0.70
		####	10.37		444.30	-0.02	-0.70
		####	10.35		474.30	0.00	0.00
		####	10.35		504.30	0.00	0.00

File: MW1FREDU.WKS SITE: CONEDISON
Created: August 1989 CSMI SITE

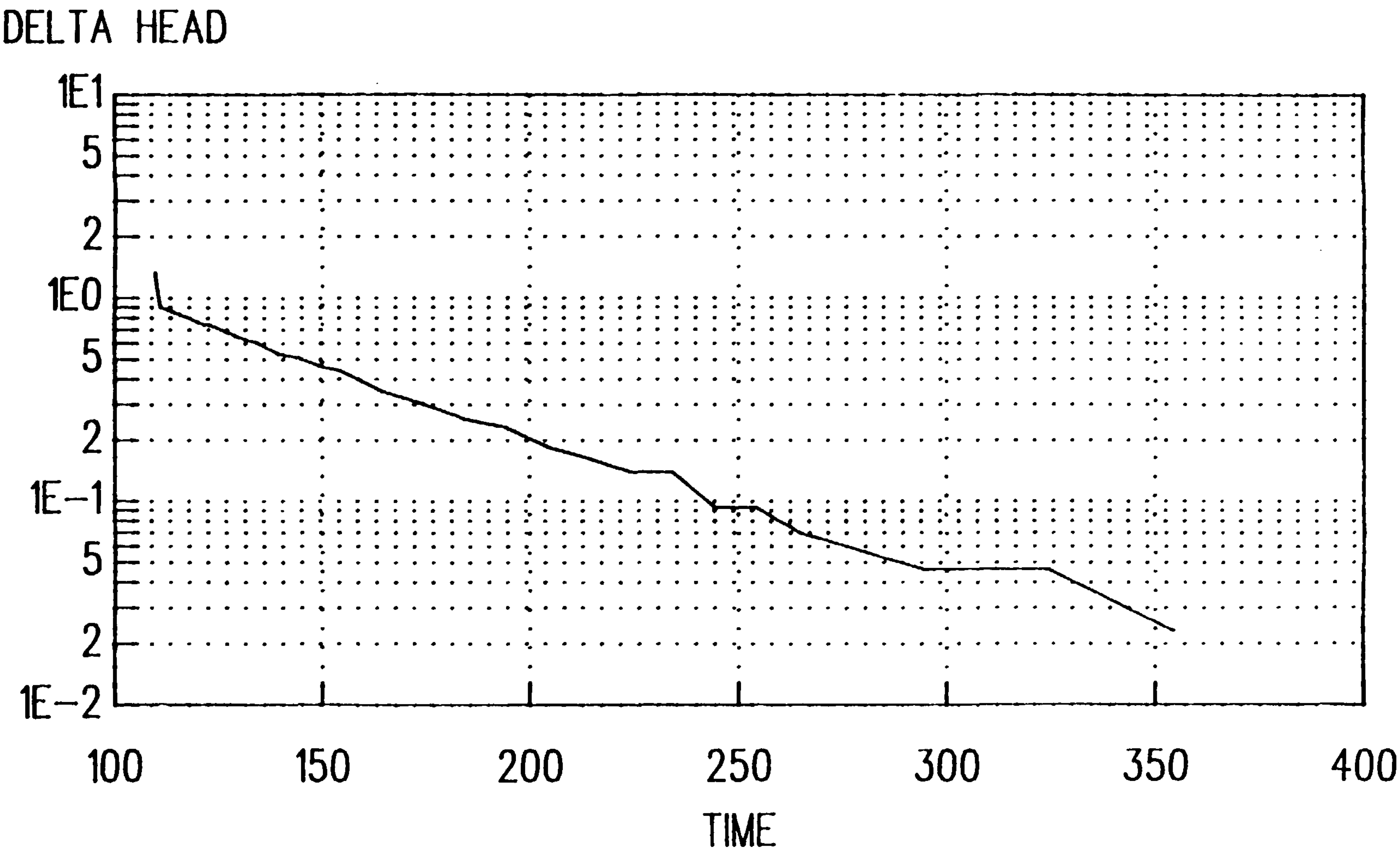
FALLING HEAD TEST 3' SLUG WELL ID: MW-1

Initial Height of water above Transducer: 10.33 (ft)
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth of water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0.0	10.326		0.00	0.00	0.00
		####	10.349		217.00	-0.02	-0.70
		####	10.349		247.10	-0.02	-0.70
		####	10.326		371.20	0.00	0.00
		####	11.273		372.70	-0.95	-28.77
		####	11.273		374.10	-0.95	-28.77
		####	11.227		375.60	-0.90	-27.37
		####	11.157		377.10	-0.83	-25.25
		####	11.227		378.60	-0.90	-27.37
		####	11.203		380.00	-0.88	-26.64
		####	11.180		381.50	-0.85	-25.94
		####	11.111		383.00	-0.79	-23.85
		####	11.065		384.40	-0.74	-22.45
		####	11.019		391.20	-0.69	-21.05
		####	10.949		396.10	-0.62	-18.93
		####	10.903		401.10	-0.58	-17.53
		####	10.857		406.10	-0.53	-16.13
		####	10.834		411.10	-0.51	-15.43
		####	10.788		416.10	-0.46	-14.04
		####	10.765		421.10	-0.44	-13.34
		####	10.741		426.10	-0.42	-12.61
		####	10.695		431.10	-0.37	-11.21
		####	10.672		436.10	-0.35	-10.51
		####	10.626		446.10	-0.30	-9.11
		####	10.580		456.10	-0.25	-7.72
		####	10.557		466.10	-0.23	-7.02
		####	10.510		476.10	-0.18	-5.59
		####	10.510		486.10	-0.18	-5.59
		####	10.487		496.10	-0.16	-4.89
		####	10.464		506.10	-0.14	-4.19
		####	10.441		516.10	-0.12	-3.49
		####	10.441		526.10	-0.12	-3.49
		####	10.395		556.10	-0.07	-2.10
		####	10.395		586.10	-0.07	-2.10
		####	10.372		616.10	-0.05	-1.40
		####	10.349		646.10	-0.02	-0.70
		####	10.349		676.10	-0.02	-0.70
		####	10.349		706.10	-0.02	-0.70
		####	10.372		736.10	-0.05	-1.40
		####	10.349		766.10	-0.02	-0.70
		####	10.349		796.10	-0.02	-0.70
		####	10.349		856.10	-0.02	-0.70
		####	10.372		916.10	-0.05	-1.40
		####	10.372		976.10	-0.05	-1.40
		####	10.372		1036.10	-0.05	-1.40
		####	10.372		1096.10	-0.05	-1.40
		####	10.349		1156.10	-0.02	-0.70

CUR 001 1156

MW-1
CSMI Site, Saddle Brook, N.J.
Rising Head Slug Test



CUR 001 1157

SLUGCOMP.WKS c. S.J. Rossello, March 1983

Project: ConEdison-CSMI site
Project No.: 430.01
Well No.: MW-2
Test Date: August 1989
Formation Tested: Overburden-Sand, Silt, Fill
Rising (R) or Falling (F) Head Test: RISING

		(cm)
Datum height (ft)	2.32	70.71
Static Water Level (ft)	6.50	198.12
Depth to bottom of screen (ft from ground level)	16.20	493.78
Boring Diameter (in)	4.25	10.80
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	10.00	304.80
Depth to Boundary	20.00	609.60
Delta H at time 0 (ft)	6.00	182.88
Delta H at Time t (ft)	0.14	4.27
Time t (seconds)	450	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	5.3E-4	11.3
K (Hvorslev Time Lag)	3.6E-4	7.6
K (Hvorslev Variable Head)	3.6E-4	7.6

File: MW2FREDU.WKS SITE: CONEDISON
Created: August 1989 CSMI SITE

FALLING HEAD TEST 3' SLUG WELL ID: MW-2

Initial Height of water above Transducer: 9.36 (ft)
Initial Time (seconds): 0.00

Clock Time HR MN Sec	Height of Water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
0.0	9.356		0.00	0.00	0.00
####	9.945		19.90	0.59	17.89
####	9.356		50.40	0.00	0.00
####	9.945		55.00	-0.59	-17.89
####	9.945		90.80	-0.59	-17.89
####	9.945		128.30	-0.59	-17.89
####	9.910		158.70	-0.55	-16.83
####	9.945		188.70	-0.59	-17.89
####	9.945		218.70	-0.59	-17.89
####	9.945		248.70	-0.59	-17.89
####	9.945		278.70	-0.59	-17.89
####	10.222		524.30	-0.87	-26.31
####	10.880		525.70	-1.52	-46.30
####	10.845		527.20	-1.49	-45.24
####	10.776		528.70	-1.42	-43.14
####	10.638		530.10	-1.28	-38.95
####	10.568		531.60	-1.21	-36.82
####	10.534		533.10	-1.18	-35.79
####	10.499		534.50	-1.14	-34.72
####	10.464		536.00	-1.11	-33.66
####	10.464		537.50	-1.11	-33.66
####	10.395		543.70	-1.04	-31.56
####	10.326		548.70	-0.97	-29.47
####	10.326		553.70	-0.97	-29.47
####	10.291		558.70	-0.94	-28.41
####	10.291		563.70	-0.94	-28.41
####	10.291		568.70	-0.94	-28.41
####	10.291		573.70	-0.94	-28.41
####	10.291		578.70	-0.94	-28.41
####	10.291		583.70	-0.94	-28.41
####	10.291		588.70	-0.94	-28.41
####	10.256		598.70	-0.90	-27.34
####	10.256		608.70	-0.90	-27.34
####	9.633		618.70	-0.28	-8.42
####	10.256		628.70	-0.90	-27.34
####	10.256		638.70	-0.90	-27.34
####	10.256		648.70	-0.90	-27.34
####	10.256		658.70	-0.90	-27.34
####	10.256		668.70	-0.90	-27.34
####	10.222		678.70	-0.87	-26.31
####	10.222		708.70	-0.87	-26.31
####	10.222		738.70	-0.87	-26.31
####	10.222		768.70	-0.87	-26.31
####	10.187		798.70	-0.83	-25.25
####	10.187		828.70	-0.83	-25.25
####	10.187		858.70	-0.83	-25.25

####	10.152	888.70	-0.80	-24.18
####	10.152	918.70	-0.80	-24.18
####	10.152	948.70	-0.80	-24.18
####	10.118	1008.70	-0.76	-23.15
####	10.118	1068.70	-0.76	-23.15
####	10.118	1128.70	-0.76	-23.15
####	10.152	1188.70	-0.80	-24.18
####	10.152	1248.70	-0.80	-24.18
####	10.152	1308.70	-0.80	-24.18
####	10.118	1368.70	-0.76	-23.15
####	9.494	1428.70	-0.14	-4.19
####	10.118	1488.70	-0.76	-23.15
####	10.118	1608.70	-0.76	-23.15
####	10.118	1728.70	-0.76	-23.15
####	10.083	1848.70	-0.73	-22.09
####	10.083	1968.70	-0.73	-22.09
####	10.083	2088.70	-0.73	-22.09
####	10.083	2208.70	-0.73	-22.09
####	10.083	2328.70	-0.73	-22.09
####	10.083	2448.70	-0.73	-22.09
####	10.049	2568.70	-0.69	-21.05
####	10.083	2868.70	-0.73	-22.09
####	10.049	3168.70	-0.69	-21.05
####	10.049	3468.70	-0.69	-21.05

File: MW2RREDU.WKS SITE: CONEDISON
Created: August 1989 CSMI SITE

RISING HEAD TEST 3' SLUG WELL ID: MW-2

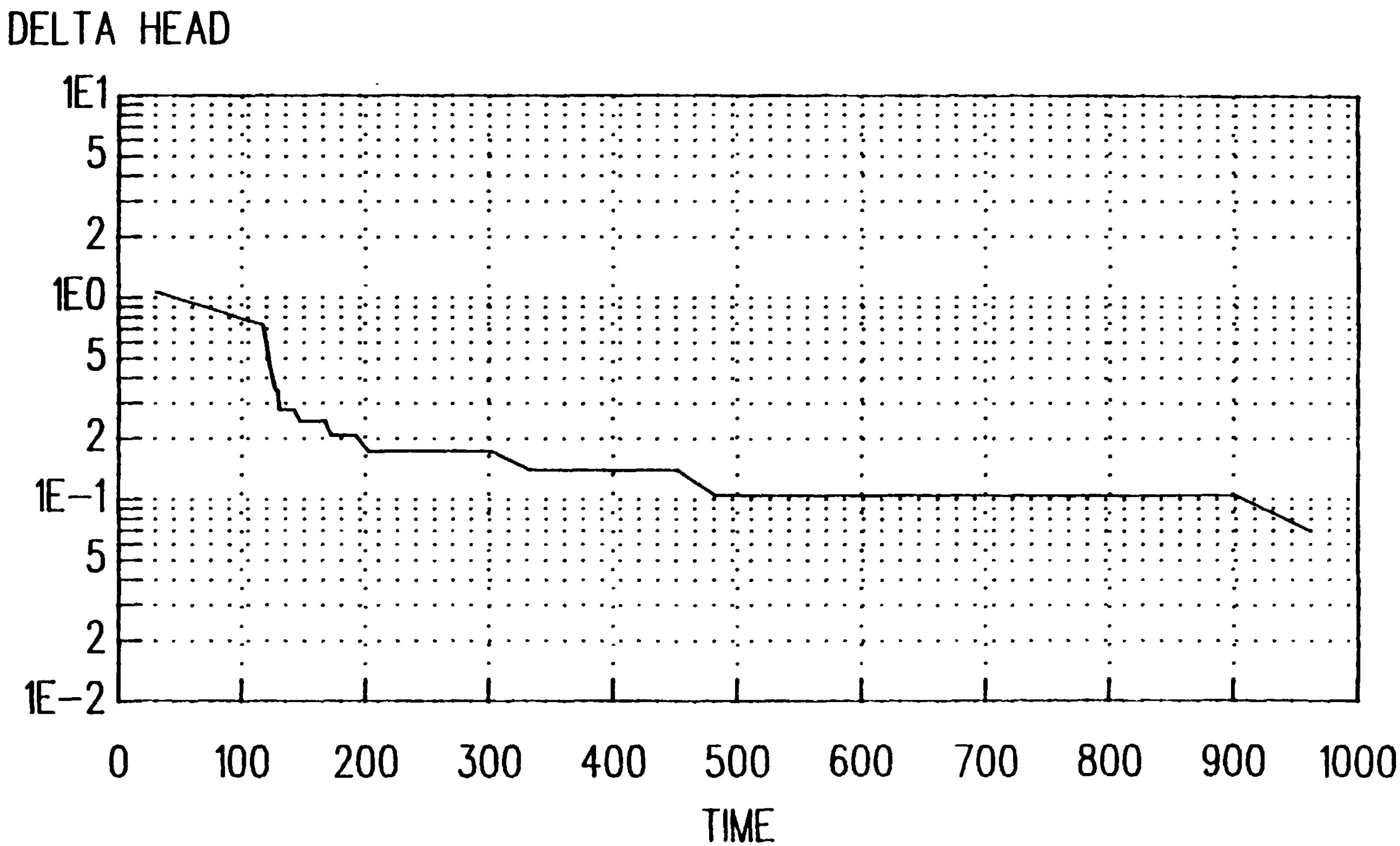
Initial Height of water above Transducer: 10.01 (ft)
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Height of Water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0.0	10.014		0.00	0.00	0.00
		####	9.979		30.20	0.04	1.06
		####	8.940		117.00	1.07	32.63
		####	9.286		118.40	0.73	22.12
		####	9.356		119.90	0.66	19.99
		####	9.425		121.40	0.59	17.89
		####	9.494		122.90	0.52	15.80
		####	9.563		124.40	0.45	13.70
		####	9.598		125.90	0.42	12.64
		####	9.633		127.40	0.38	11.57
		####	9.667		128.80	0.35	10.54
		####	9.667		130.40	0.35	10.54
		####	9.737		137.20	0.28	8.42
		####	9.737		142.20	0.28	8.42
		####	9.737		147.20	0.28	8.42
		####	9.771		152.20	0.24	7.38
		####	9.771		157.20	0.24	7.38
		####	9.771		162.20	0.24	7.38
		####	9.771		167.20	0.24	7.38
		####	9.771		172.20	0.24	7.38
		####	9.806		177.20	0.21	6.32
		####	9.806		182.20	0.21	6.32
		####	9.806		192.20	0.21	6.32
		####	9.806		202.20	0.21	6.32
		####	9.841		212.20	0.17	5.26
		####	9.841		222.20	0.17	5.26
		####	9.841		232.20	0.17	5.26
		####	9.841		242.20	0.17	5.26
		####	9.841		252.20	0.17	5.26
		####	9.841		262.20	0.17	5.26
		####	9.841		272.20	0.17	5.26
		####	9.841		302.20	0.17	5.26
		####	9.841		332.20	0.17	5.26
		####	9.875		362.20	0.14	4.22
		####	9.875		392.20	0.14	4.22
		####	9.875		422.20	0.14	4.22
		####	9.875		452.20	0.14	4.22
		####	9.875		482.20	0.14	4.22
		####	9.910		512.20	0.10	3.16
		####	9.910		542.20	0.10	3.16
		####	9.910		602.20	0.10	3.16
		####	9.910		662.20	0.10	3.16
		####	9.910		722.20	0.10	3.16
		####	9.910		782.20	0.10	3.16
		####	9.910		842.20	0.10	3.16
		####	9.321		902.20	0.69	21.05

####	9.910	962.20	0.10	3.16
####	9.945	1022.20	0.07	2.10
####	9.910	1082.20	0.10	3.16

CUR 001 1162

MW-2
CSMI Site, Saddle Brook, N.J.
Rising Head Slug Test



SLUGCOMP.WKS c. S.J. Rossello, March 1988

Project: ConEdison-CSMI site
Project No.: 430.01
Well No.: MW-3
Test Date: August 1989
Formation Tested: Overburden-Sand, Silt, Fill
Rising (R) or Falling (F) Head Test: RISING

		(cm)
Datum height (ft)	1.86	56.69
Static Water Level (ft)	4.68	142.65
Depth to bottom of screen (ft from ground level)	16.00	487.68
Boring Diameter (in)	4.25	10.80
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	10.00	304.80
Depth to Boundary	20.00	609.60
Delta H at time 0 (ft)	1.50	45.72
Delta H at Time t (ft)	0.07	2.13
Time t (seconds)	250	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	3.9E-4	8.2
K (Hvorslev Time Lag)	5.3E-4	11.2
K (Hvorslev Variable Head)	5.2E-4	11.1

File: MW3FREDU.WKS SITE: CONEDISON
Created: August 1989 CSMI SITE

FALLING HEAD TEST 3' SLUG WELL ID: MW-3

Initial Height of water above Transducer: 10.30 (ft)
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Height of Water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0.0	10.303		0.00	0.00	0.00
		####	10.279		11.10	0.02	0.73
		####	10.279		41.20	0.02	0.73
		####	10.256		71.20	0.05	1.43
		####	11.735		169.80	-1.43	-43.50
		####	11.250		171.20	-0.95	-28.77
		####	11.227		172.70	-0.92	-28.07
		####	11.042		174.20	-0.74	-22.45
		####	11.111		175.60	-0.81	-24.55
		####	11.088		177.10	-0.79	-23.85
		####	11.088		178.50	-0.79	-23.85
		####	11.065		180.00	-0.76	-23.15
		####	11.042		181.40	-0.74	-22.45
		####	11.019		182.90	-0.72	-21.75
		####	10.972		189.20	-0.67	-20.32
		####	10.903		194.20	-0.60	-18.23
		####	10.880		199.20	-0.58	-17.53
		####	10.834		204.20	-0.53	-16.13
		####	10.788		209.20	-0.49	-14.73
		####	10.765		214.20	-0.46	-14.04
		####	10.741		219.20	-0.44	-13.31
		####	10.695		224.20	-0.39	-11.91
		####	10.672		229.20	-0.37	-11.21
		####	10.649		234.20	-0.35	-10.51
		####	10.603		244.20	-0.30	-9.11
		####	10.580		254.20	-0.28	-8.42
		####	10.534		264.20	-0.23	-7.02
		####	10.510		274.20	-0.21	-6.29
		####	10.464		284.20	-0.16	-4.89
		####	10.464		294.20	-0.16	-4.89
		####	10.441		304.20	-0.14	-4.19
		####	10.418		314.20	-0.12	-3.49
		####	10.395		324.20	-0.09	-2.79
		####	10.372		354.20	-0.07	-2.10
		####	10.326		384.20	-0.02	-0.70
		####	10.303		414.20	0.00	0.00
		####	10.303		444.20	0.00	0.00
		####	10.279		474.20	0.02	0.73
		####	10.279		504.20	0.02	0.73

CUR 001 1165

File: MW3RREDU.WKS
Created: August 1989

SITE: CONEDISON
CSMI SITE

RISING HEAD TEST 3' SLUG

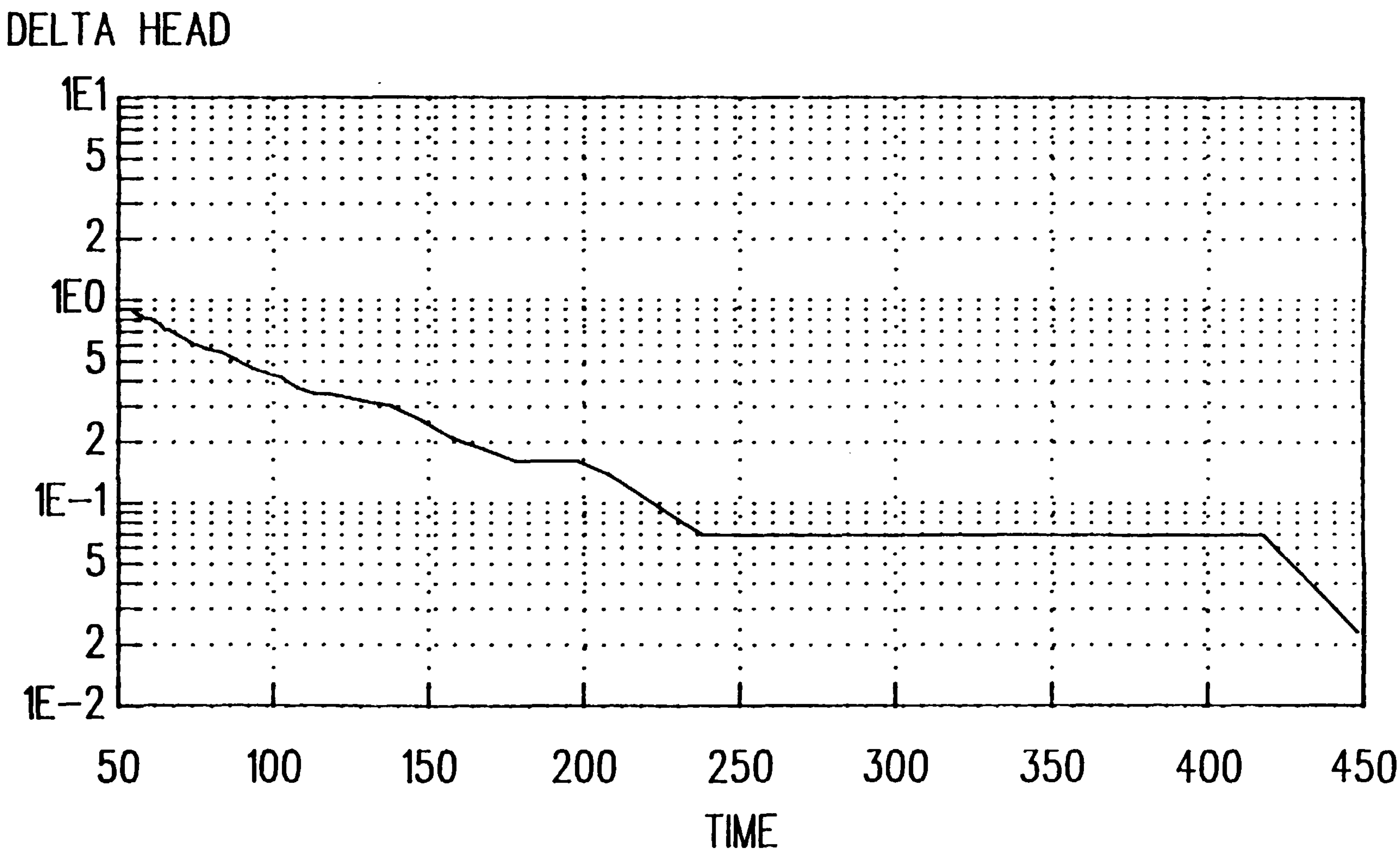
WELL ID: MW-3

Initial Height of water above Transducer: 10.28 (ft)
Initial Time (seconds): 0.00

Clock Time HR MN Sec	Height of Water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
0.0	10.279		0.00	0.00	0.00
####	10.025		53.10	0.25	7.72
####	9.379		54.60	0.90	27.34
####	9.425		56.10	0.85	25.94
####	9.448		57.60	0.83	25.25
####	9.471		59.10	0.81	24.55
####	9.471		60.50	0.81	24.55
####	9.494		62.00	0.79	23.85
####	9.517		63.50	0.76	23.15
####	9.563		65.00	0.72	21.75
####	9.563		66.40	0.72	21.75
####	9.656		73.00	0.62	18.93
####	9.702		78.00	0.58	17.53
####	9.725		83.00	0.55	16.83
####	9.771		88.00	0.51	15.43
####	9.817		93.00	0.46	14.04
####	9.841		98.00	0.44	13.31
####	9.864		103.00	0.42	12.61
####	9.910		108.00	0.37	11.21
####	9.933		113.00	0.35	10.51
####	9.933		118.00	0.35	10.51
####	9.956		128.00	0.32	9.81
####	9.979		138.00	0.30	9.11
####	10.025		148.00	0.25	7.72
####	10.072		158.00	0.21	6.29
####	10.095		168.00	0.18	5.59
####	10.118		178.00	0.16	4.89
####	10.118		188.00	0.16	4.89
####	10.118		198.00	0.16	4.89
####	10.141		208.00	0.14	4.19
####	10.210		238.00	0.07	2.10
####	10.233		268.00	0.05	1.40
####	10.187		298.00	0.09	2.79
####	10.210		328.00	0.07	2.10
####	10.210		358.00	0.07	2.10
####	10.210		388.00	0.07	2.10
####	10.210		418.00	0.07	2.10
####	10.256		448.00	0.02	0.70

CUP 001 1166

MW-3
CSMI Site, Saddle Brook, N.J.
Rising Head Slug Test



SLUGCOMP.WKS c. S.J. Rossello, March 1988

Project: ConEdison-CSMI site
Project No.: 430.01
Well No.: MW-4
Test Date: August 1989
Formation Tested: Overburden-Sand, Silt, Fill
Rising (R) or Falling (F) Head Test: RISING

		(cm)
Datum height (ft)	1.05	32.00
Static Water Level (ft)	6.81	207.57
Depth to bottom of screen (ft from ground level)	16.50	502.92
Boring Diameter (in)	4.25	10.80
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	10.00	304.80
Depth to Boundary	20.00	609.60
Delta H at time 0 (ft)	1.50	45.72
Delta H at Time t (ft)	0.07	2.13
Time t (seconds)	235	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

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	cm/sec	gpd/ft2
K (Bouwer-Rice)	8.1E-4	17.3
K (Hvorslev Time Lag)	5.6E-4	11.9
K (Hvorslev Variable Head)	5.6E-4	11.8

File: MW4FREDU.WKS SITE: CONEDISON
Created: August 1989 CSMI SITE

FALLING HEAD TEST 3' SLUG WELL ID: MW-4

Initial Height of water above Transducer: 8.34 (ft)
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Height of Water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0.0	8.339		0.00	0.00	0.00
		####	8.339		30.40	0.00	0.00
		####	8.339		80.20	0.00	0.00
		####	9.355		81.70	-1.02	-30.87
		####	8.917		83.20	-0.58	-17.56
		####	8.755		84.60	-0.42	-12.64
		####	8.986		86.10	-0.65	-19.66
		####	8.940		87.60	-0.60	-18.26
		####	8.940		89.10	-0.60	-18.26
		####	8.917		90.50	-0.58	-17.56
		####	8.917		92.00	-0.58	-17.56
		####	8.893		93.50	-0.55	-16.83
		####	8.847		99.40	-0.51	-15.43
		####	8.801		104.40	-0.46	-14.04
		####	8.778		109.40	-0.44	-13.34
		####	8.755		114.40	-0.42	-12.64
		####	8.732		119.40	-0.39	-11.94
		####	8.709		124.40	-0.37	-11.24
		####	8.686		129.40	-0.35	-10.54
		####	8.662		134.40	-0.32	-9.81
		####	8.639		139.40	-0.30	-9.11
		####	8.639		144.40	-0.30	-9.11
		####	8.593		154.40	-0.25	-7.72
		####	8.570		164.40	-0.23	-7.02
		####	8.570		174.40	-0.23	-7.02
		####	8.547		184.40	-0.21	-6.32
		####	8.524		194.40	-0.19	-5.62
		####	8.501		204.40	-0.16	-4.92
		####	8.524		214.40	-0.19	-5.62
		####	8.501		224.40	-0.16	-4.92
		####	8.478		234.40	-0.14	-4.22
		####	8.478		264.40	-0.14	-4.22
		####	8.455		294.40	-0.12	-3.52
		####	8.431		324.40	-0.09	-2.79
		####	8.408		354.40	-0.07	-2.10
		####	8.385		384.40	-0.05	-1.40
		####	8.408		414.40	-0.07	-2.10
		####	8.385		444.40	-0.05	-1.40
		####	8.385		474.40	-0.05	-1.40
		####	8.362		504.40	-0.02	-0.70
		####	8.362		564.40	-0.02	-0.70
		####	8.339		624.40	0.00	0.00

File: MW4RREDU.WKS
Created: August 1989

SITE: CONEDISON
CSMI SITE

RISING HEAD TEST 3' SLUG

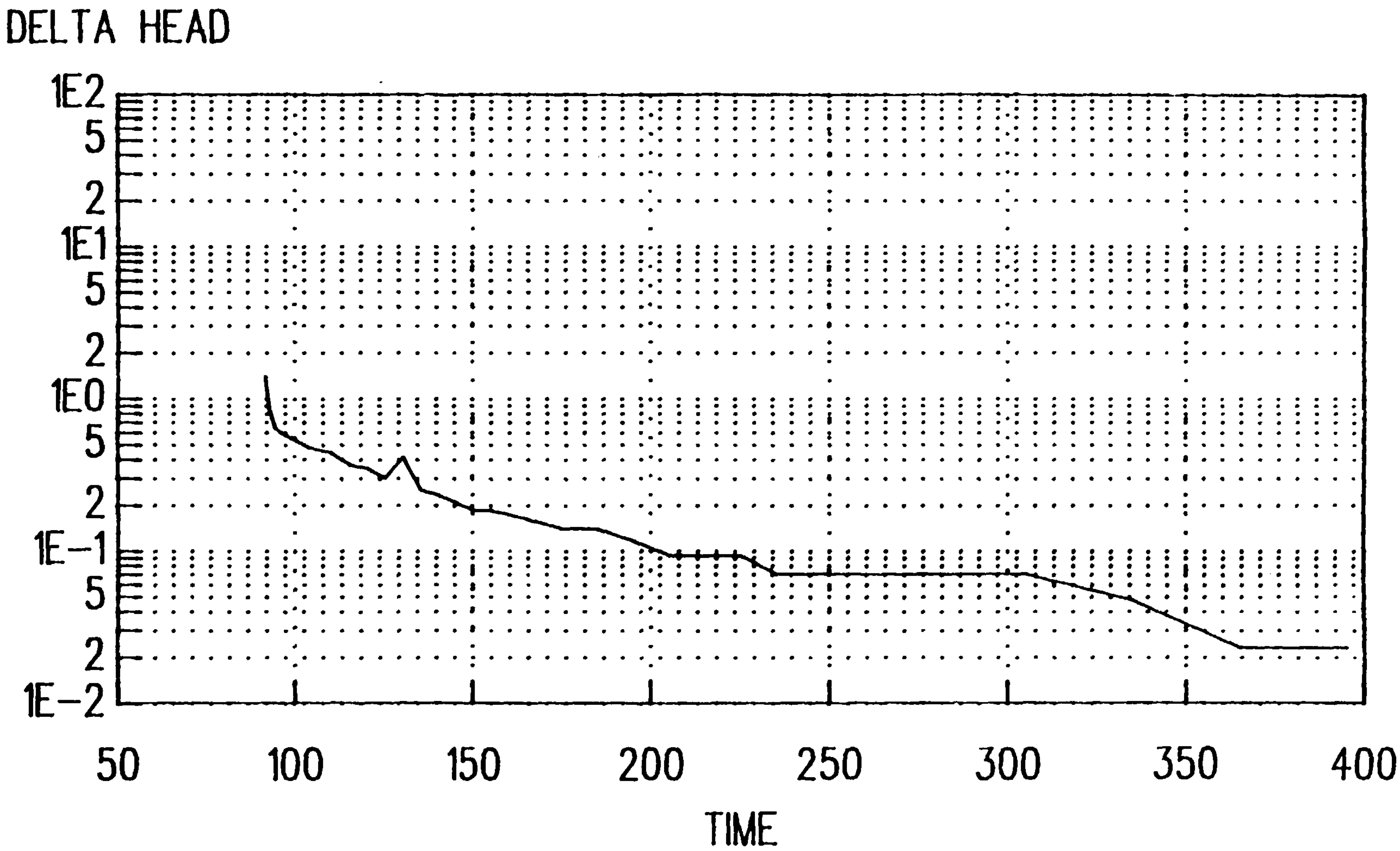
WELL ID: MW-4

Initial Height of water above Transducer: 8.25 (ft)
Initial Time (seconds): 0.00

Clock Time HR MN Sec	Height of Water above Transducer FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
0.0	8.247		0.00	0.00	0.00
####	8.339		30.10	-0.09	-2.79
####	8.316		60.10	-0.07	-2.10
####	7.900		90.10	0.35	10.54
####	6.838		91.50	1.41	42.81
####	7.438		93.00	0.81	24.58
####	7.600		94.40	0.65	19.66
####	7.646		95.90	0.60	18.26
####	7.669		97.40	0.58	17.56
####	7.692		98.80	0.56	16.86
####	7.715		100.30	0.53	16.16
####	7.738		101.70	0.51	15.46
####	7.762		103.20	0.49	14.73
####	7.808		110.10	0.44	13.34
####	7.877		115.10	0.37	11.24
####	7.900		120.10	0.35	10.54
####	7.946		125.10	0.30	9.14
####	7.831		130.10	0.42	12.64
####	7.993		135.10	0.25	7.72
####	8.016		140.10	0.23	7.02
####	8.039		145.10	0.21	6.32
####	8.062		150.10	0.19	5.62
####	8.062		155.10	0.19	5.62
####	8.085		165.10	0.16	4.92
####	8.108		175.10	0.14	4.22
####	8.108		185.10	0.14	4.22
####	8.131		195.10	0.12	3.52
####	8.154		205.10	0.09	2.83
####	8.154		215.10	0.09	2.83
####	8.154		225.10	0.09	2.83
####	8.177		235.10	0.07	2.13
####	8.177		245.10	0.07	2.13
####	8.177		275.10	0.07	2.13
####	8.177		305.10	0.07	2.13
####	8.200		335.10	0.05	1.43
####	8.224		365.10	0.02	0.70
####	8.224		395.10	0.02	0.70
####	8.247		425.10	0.00	0.00
####	8.177		455.10	0.07	2.13
####	8.224		485.10	0.02	0.70
####	8.224		515.10	0.02	0.70
####	8.224		575.10	0.02	0.70
####	8.247		635.10	0.00	0.00
####	8.224		695.10	0.02	0.70
####	8.247		755.10	0.00	0.00
####	8.247		815.10	0.00	0.00

CUR 001 1170

MW–4
CSMI Site, Saddle Brook, N.J.
Rising Head Slug Test



Project: C.S.M.I. SITE
Project No.: 430.01
Well No.: MW-5U
Test Date: 07/05/90
Formation Tested: OVERBURDEN
Rising (R) or Falling (F) Head Test:(R)

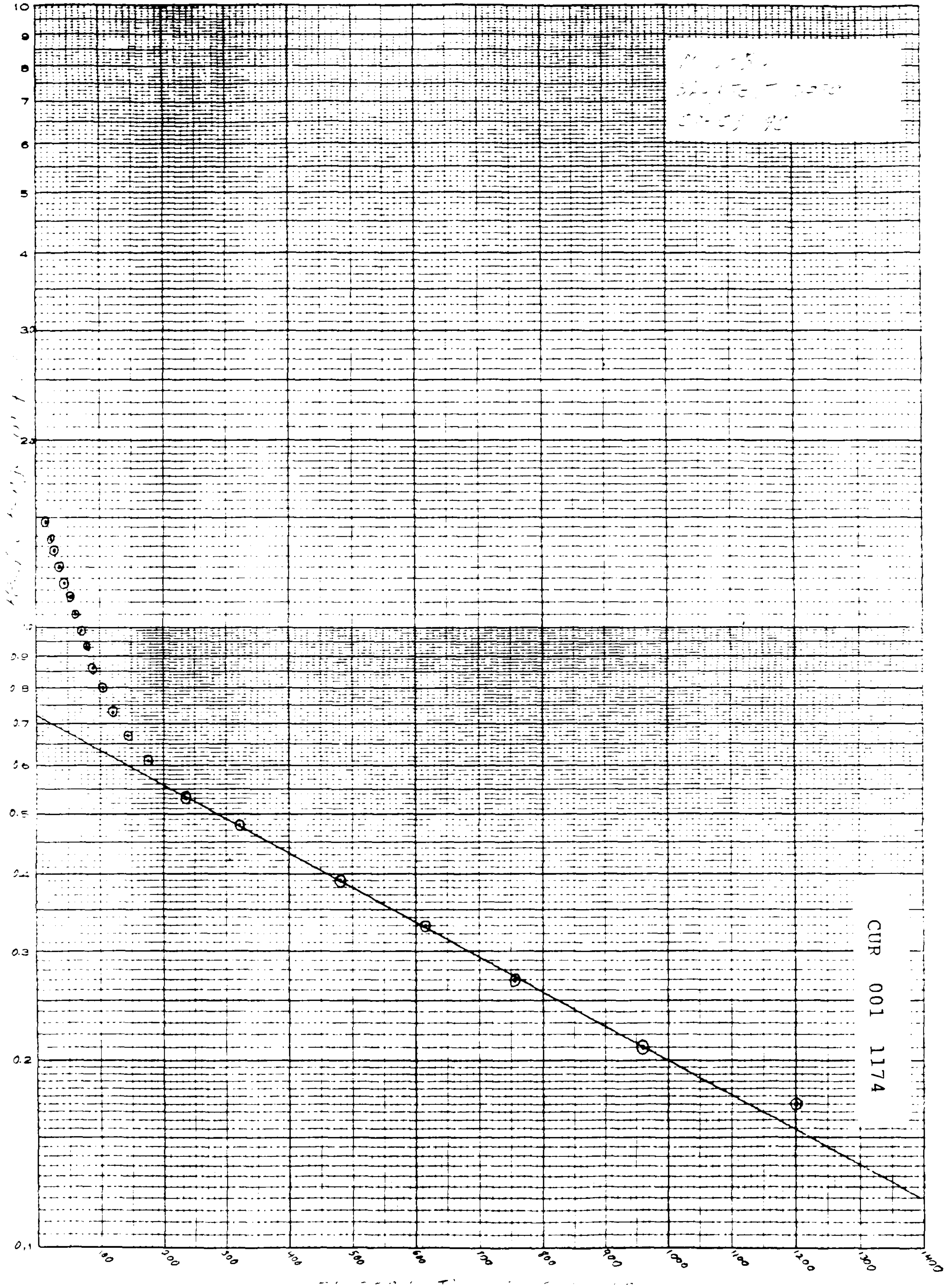
		(cm)
Stickup (ft)	2.35	71.63
Static Water Level (ft)	7.23	220.37
Depth to bottom of screen (ft from ground level)	9.00	274.32
Boring Diameter (in)	8.25	20.96
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	5.00	152.40
Depth to Boundary	16.00	487.68
Delta H at time 0 (ft)	0.72	21.95
Delta H at Time t (ft)	0.21	6.40
Time t (seconds)	960	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	2.9E-04	6.2
K (Hvorslev Time Lag)	8.2E-05	1.7
K (Hvorslev Variable Head)	8.2E-05	1.7

SLUG TEST DATA REDUCTION

Well No MW-5U Initial Depth to water (ft): 7.23
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth to water FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0	7.23		0.00	0.00	0.00
		17	8.70		17.00	1.47	44.66
		25	8.62		25.00	1.39	42.23
		30	8.56		30.00	1.33	40.41
		39	8.48		39.00	1.25	37.98
		46	8.41		46.00	1.18	35.85
		53	8.35		53.00	1.12	34.03
	1	2	8.28		62.00	1.05	31.90
	1	11	8.22		71.00	0.99	30.08
	1	20	8.16		80.00	0.93	28.25
	1	30	8.09		90.00	0.86	26.13
	1	45	8.03		105.00	0.80	24.30
	2	1	7.96		121.00	0.73	22.18
	2	25	7.90		145.00	0.67	20.35
	2	58	7.84		178.00	0.61	18.53
	3	56	7.76		236.00	0.53	16.10
	5	22	7.71		322.00	0.48	14.58
	8	0	7.62		480.00	0.39	11.85
	10	15	7.56		615.00	0.33	10.03
	12	35	7.50		755.00	0.27	8.20
	16	0	7.44		960.00	0.21	6.38
	20	0	7.40		1200.00	0.17	5.16
	25	0	7.35		1500.00	0.12	3.65
	30	0	7.33		1800.00	0.10	3.04
	33	35	7.31		2015.00	0.08	2.43
	40	0	7.29		2400.00	0.06	1.82


CUR 001 1174

Project: C.S.M.I. SITE
Project No.: 430.01
Well No.: MW-5L
Test Date: 07/05/90
Formation Tested: OVERBURDEN
Rising (R) or Falling (F) Head Test: (R)

		(cm)
Stickup (ft)	1.57	47.85
Static Water Level (ft)	6.00	182.88
Depth to bottom of screen (ft from ground level)	15.00	457.20
Boring Diameter (in)	8.25	20.96
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	5.00	152.40
Depth to Boundary	16.00	487.68
Delta H at time 0 (ft)	1.49	45.42
Delta H at Time t (ft)	0.14	4.27
Time t (seconds)	515	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	2.4E-04	5.0
K (Hvorslev Time Lag)	2.6E-04	5.5
K (Hvorslev Variable Head)	2.6E-04	5.5

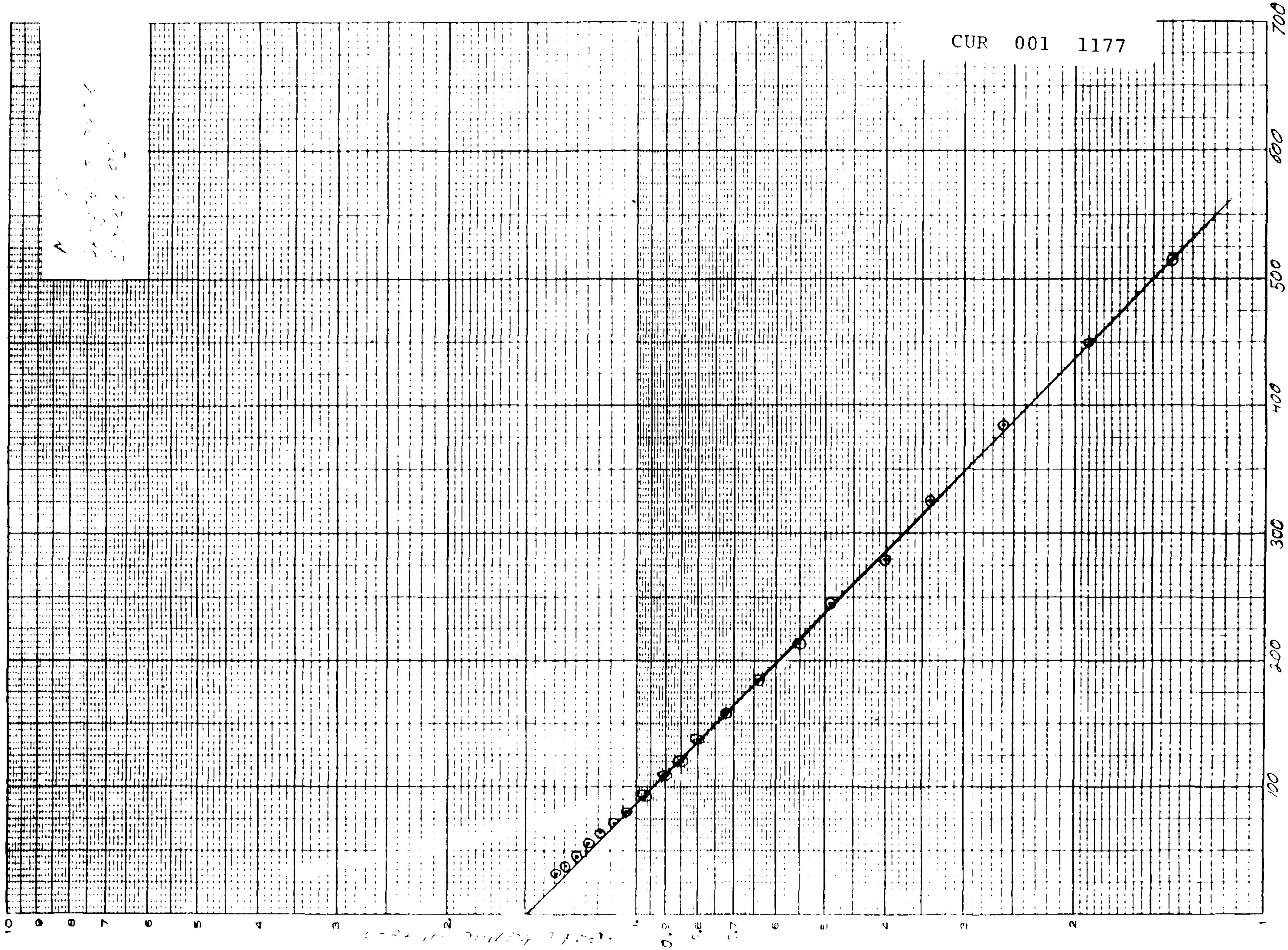
SLUG TEST DATA REDUCTION

Well No MW-5L   Initial Depth to water (ft): 6.00
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth to water FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0	6.00		0.00	0.00	0.00
		32	7.33		32.00	1.33	40.41
		38	7.29		38.00	1.29	39.19
		45	7.24		45.00	1.24	37.67
		55	7.19		55.00	1.19	36.15
	1	4	7.14		64.00	1.14	34.63
	1	12	7.09		72.00	1.09	33.11
	1	20	7.04		80.00	1.04	31.60
	1	33	6.97		93.00	0.97	29.47
	1	50	6.90		110.00	0.90	27.34
	2	0	6.85		120.00	0.85	25.82
	2	17	6.80		137.00	0.80	24.30
	2	39	6.72		159.00	0.72	21.87
	3	5	6.64		185.00	0.64	19.44
	3	34	6.55		214.00	0.55	16.71
	4	5	6.49		245.00	0.49	14.89
	4	40	6.40		280.00	0.40	12.15
	5	25	6.34		325.00	0.34	10.33
	6	25	6.26		385.00	0.26	7.90
	7	30	6.19		450.00	0.19	5.77
	8	35	6.14		515.00	0.14	4.25
	10	10	6.09		610.00	0.09	2.73
	11	45	6.05		705.00	0.05	1.52

CUR 001 1176

CUR 001 1177



Project: C.S.M.I. SITE
Project No.: 430.01
Well No.: TWP-1
Test Date: 7/05/90
Formation Tested: OVERBURDEN
Rising (R) or Falling (F) Head Test:(R)

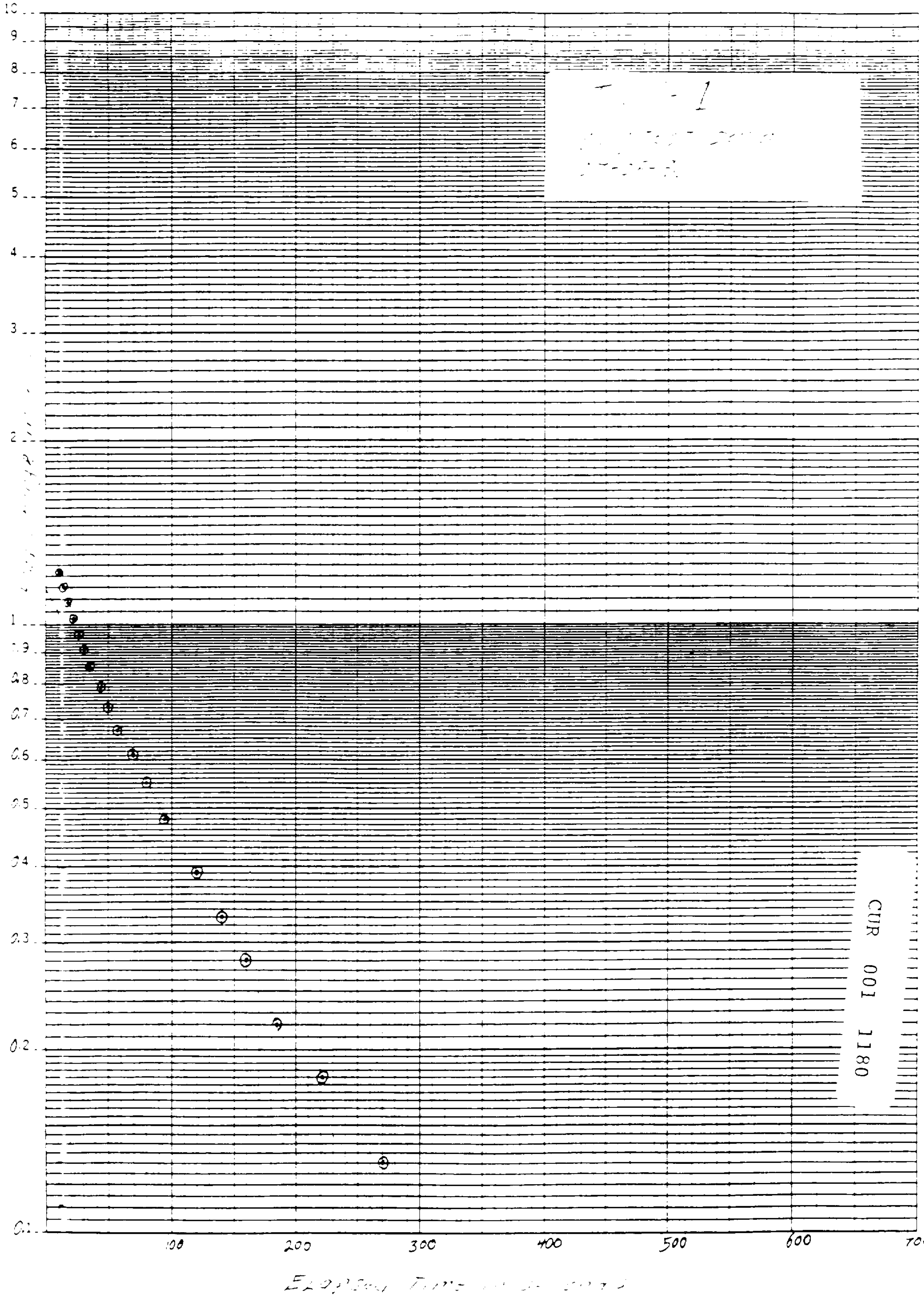
		(cm)
Datum height (ft)	1.50	45.72
Static Water Level (ft)	5.32	162.15
Depth to bottom of screen (ft from ground level)	10.30	313.94
Boring Diameter (in)	8.25	20.96
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	5.00	152.40
Depth to Boundary	16.00	487.68
Delta H at time 0 (ft)	1.14	34.75
Delta H at Time t (ft)	0.22	6.71
Time t (seconds)	185	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	3.4E-04	7.2
K (Hvorslev Time Lag)	5.1E-04	10.7
K (Hvorslev Variable Head)	5.0E-04	10.7

SLUG TEST DATA REDUCTION

Well No TWP-1 Initial Depth to water (ft): 5.26
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth to water FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0	5.26		0.00	0.00	0.00
		11	6.48		11.00	1.22	37.06
		15	6.41		15.00	1.15	34.94
		18	6.35		18.00	1.09	33.11
		23	6.28		23.00	1.02	30.99
		27	6.22		27.00	0.96	29.16
		31	6.17		31.00	0.91	27.65
		36	6.11		36.00	0.85	25.82
		43	6.05		43.00	0.79	24.00
		50	5.99		50.00	0.73	22.18
		58	5.93		58.00	0.67	20.35
	1	10	5.87		70.00	0.61	18.53
	1	20	5.81		80.00	0.55	16.71
	1	35	5.74		95.00	0.48	14.58
	2	0	5.65		120.00	0.39	11.85
	2	20	5.59		140.00	0.33	10.03
	2	40	5.54		160.00	0.28	8.51
	3	5	5.48		185.00	0.22	6.68
	3	42	5.44		222.00	0.18	5.47
	4	30	5.39		270.00	0.13	3.95
	5	20	5.35		320.00	0.09	2.73
	7	0	5.31		420.00	0.05	1.52
	10	0	5.29		600.00	0.03	0.91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CUR 001 1180

Project: C.S.M.I. SITE
Project No.: 430.01
Well No.: TWP-2
Test Date: 07/05/90
Formation Tested: OVERBURDEN
Rising (R) or Falling (F) Head Test: (R)

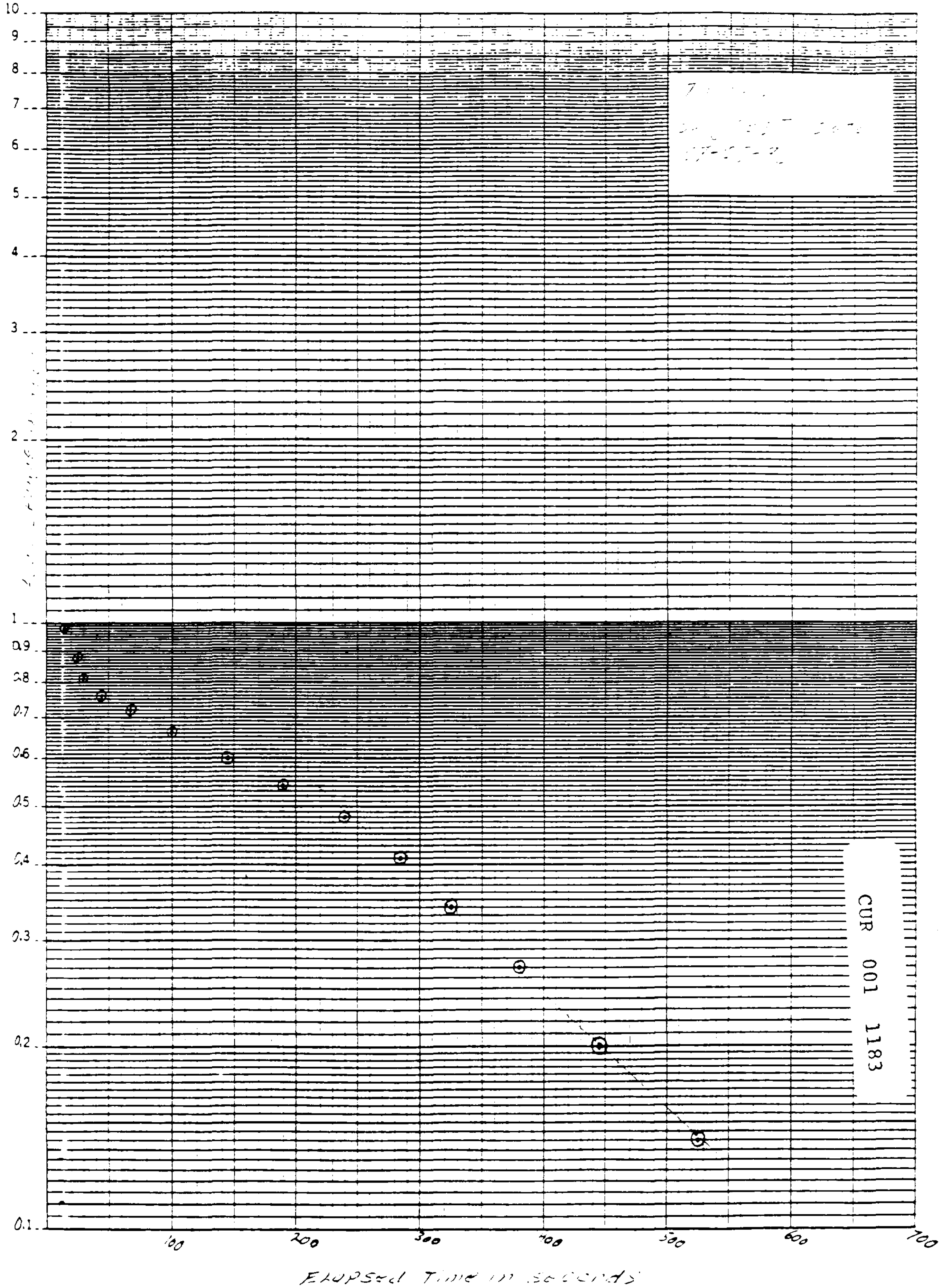
		(cm)
Stickup (ft)	2.00	60.96
Static Water Level (ft)	6.44	196.29
Depth to bottom of screen (ft from ground level)	10.00	304.80
Boring Diameter (in)	8.25	20.96
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	5.00	152.40
Depth to Boundary	16.00	487.68
Delta H at time 0 (ft)	1.40	42.67
Delta H at Time t (ft)	0.20	6.10
Time t (seconds)	445	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	1.6E-04	3.4
K (Hvorslev Time Lag)	2.5E-04	5.3
K (Hvorslev Variable Head)	2.5E-04	5.3

SLUG TEST DATA REDUCTION

Well No TWP-2 Initial Depth to water (ft): 6.44
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth to water FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0	6.44		0.00	0.00	0.00
		13	7.42		13.00	0.98	29.77
		26	7.32		26.00	0.88	26.73
		30	7.25		30.00	0.81	24.61
		45	7.20		45.00	0.76	23.09
	1	8	7.16		68.00	0.72	21.87
	1	40	7.10		100.00	0.66	20.05
	2	25	7.04		145.00	0.60	18.23
	3	10	6.98		190.00	0.54	16.41
	4	0	6.92		240.00	0.48	14.58
	4	45	6.85		285.00	0.41	12.46
	5	26	6.78		326.00	0.34	10.33
	6	20	6.71		380.00	0.27	8.20
	7	25	6.64		445.00	0.20	6.08
	8	45	6.58		525.00	0.14	4.25
	10	25	6.52		625.00	0.08	2.43
	12	0	6.48		720.00	0.04	1.22
	14	30	6.44		870.00	0.00	0.00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Elapsed Time in seconds

Project: C.S.M.I. SITE
Project No.: 430.01
Well No.: TWP-3
Test Date: 07/05/90
Formation Tested: OVERBURDEN
Rising (R) or Falling (F) Head Test: (R)

		(cm)
Stickup (ft)	2.00	60.96
Static Water Level (ft)	6.18	188.37
Depth to bottom of screen (ft from ground level)	10.00	304.80
Boring Diameter (in)	8.25	20.96
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	5.00	152.40
Depth to Boundary	16.00	487.68
Delta H at time 0 (ft)	1.05	32.00
Delta H at Time t (ft)	0.20	6.10
Time t (seconds)	1165	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	5.3E-05	1.1
K (Hvorslev Time Lag)	8.1E-05	1.7
K (Hvorslev Variable Head)	8.1E-05	1.7

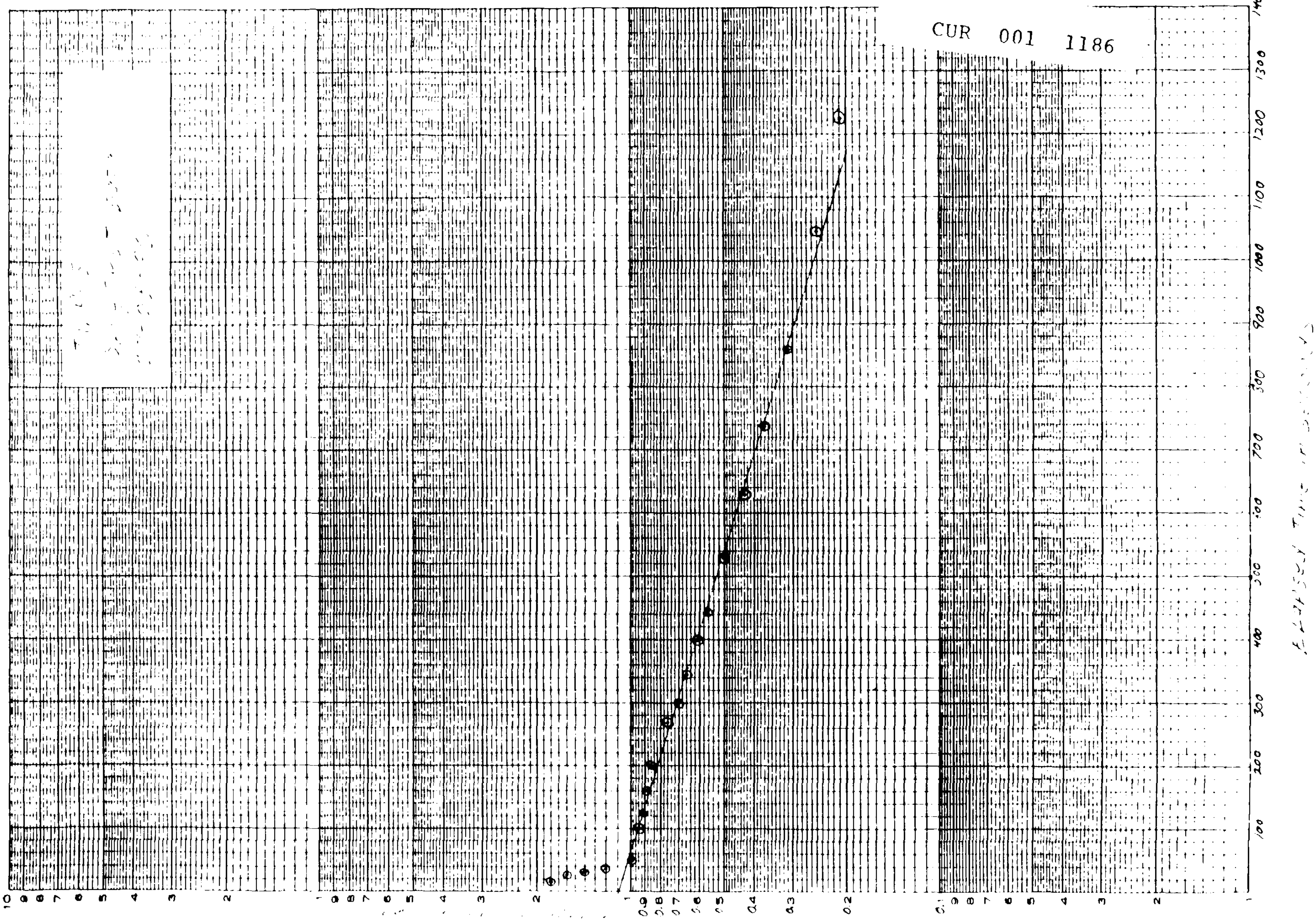
SLUG TEST DATA REDUCTION

Well No TWP-3 Initial Depth to water (ft): 6.18
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth to water FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0	6.18		0.00	0.00	0.00
		17	7.26		17.00	1.08	32.81
		24	7.24		24.00	1.06	32.20
		30	7.22		30.00	1.04	31.60
		35	7.20		35.00	1.02	30.99
		50	7.17		50.00	0.99	30.08
		56	7.15		56.00	0.97	29.47
	1	42	7.12		102.00	0.94	28.56
	2	5	7.09		125.00	0.91	27.65
	2	38	7.06		158.00	0.88	26.73
	3	15	7.04		195.00	0.86	26.13
	4	30	6.94		270.00	0.76	23.09
	5	8	6.88		308.00	0.70	21.27
	5	45	6.84		345.00	0.66	20.05
	6	30	6.79		390.00	0.61	18.53
	7	22	6.74		442.00	0.56	17.01
	8	35	6.68		515.00	0.50	15.19
	10	15	6.61		615.00	0.43	13.06
	12	18	6.55		738.00	0.37	11.24
	14	23	6.49		863.00	0.31	9.42
	17	25	6.43		1045.00	0.25	7.60
	20	25	6.39		1225.00	0.21	6.38
	24	0	6.35		1440.00	0.17	5.16
	28	30	6.31		1710.00	0.13	3.95
	34	0	6.27		2040.00	0.09	2.73
	38	30	6.25		2310.00	0.07	2.13

CUR 001 1185

CUR 001 1186



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Project: C.S.M.I. SITE
Project No.: 430.01
Well No.: TWP-4
Test Date: 07/05/90
Formation Tested: OVERBURDEN
Rising (R) or Falling (F) Head Test:(R)

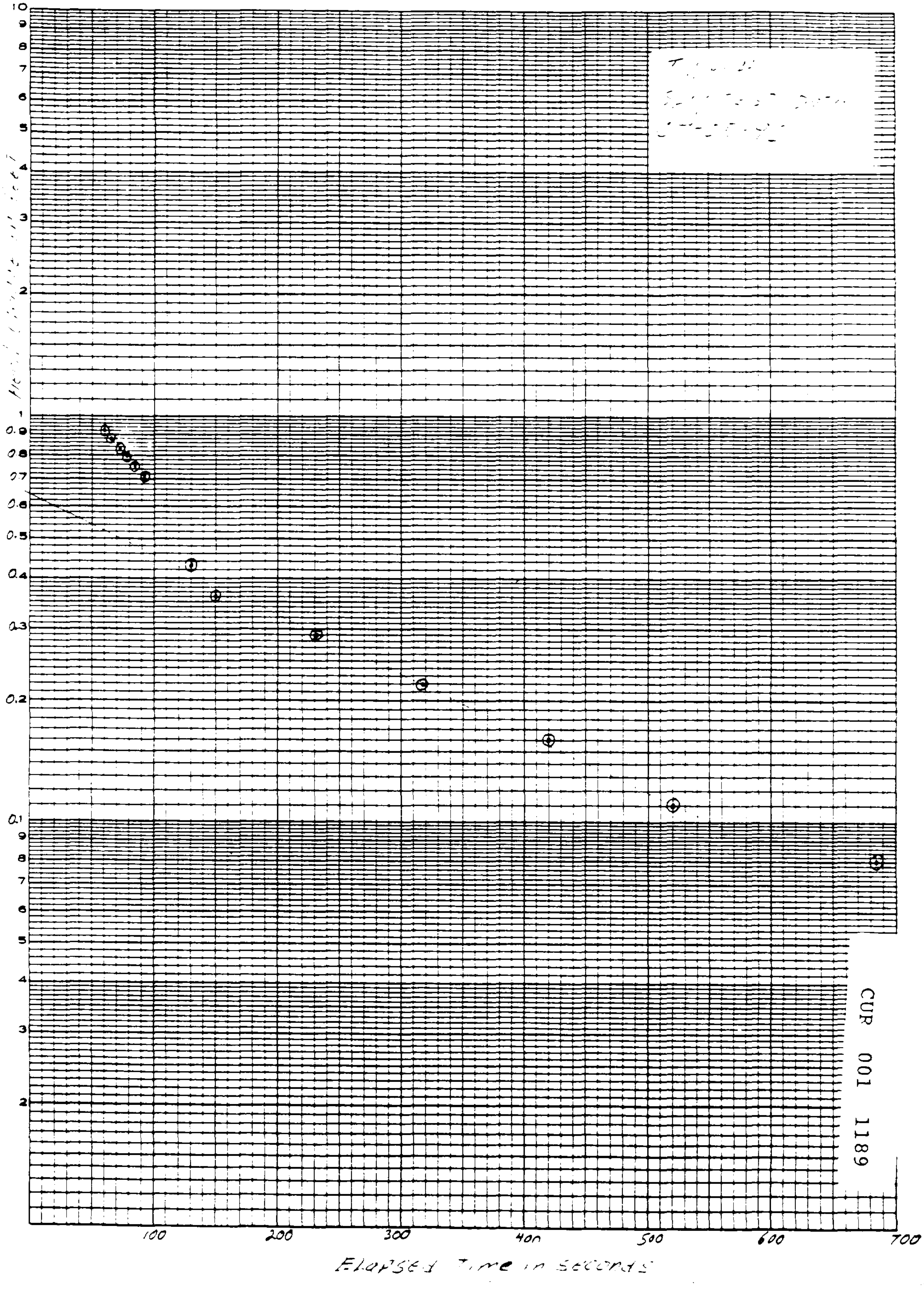
		(cm)
Stickup (ft)	1.70	51.82
Static Water Level (ft)	5.84	178.00
Depth to bottom of screen (ft from ground level)	10.00	304.80
Boring Diameter (in)	8.25	20.96
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	5.00	152.40
Depth to Boundary	16.00	487.68
Delta H at time 0 (ft)	0.64	19.51
Delta H at Time t (ft)	0.11	3.35
Time t (seconds)	520	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	1.3E-04	2.7
K (Hvorslev Time Lag)	1.9E-04	4.1
K (Hvorslev Variable Head)	1.9E-04	4.1

SLUG TEST DATA REDUCTION

Well No TWP-4   Initial Depth to water (ft): 5.84
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth to water FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0	5.84		0.00	0.00	0.00
		59	6.76		59.00	0.92	27.95
	1	6	6.72		66.00	0.88	26.73
	1	12	6.67		72.00	0.83	25.22
	1	18	6.63		78.00	0.79	24.00
	1	25	6.59		85.00	0.75	22.79
	1	32	6.55		92.00	0.71	21.57
	2	10	6.27		130.00	0.43	13.06
	2	30	6.20		150.00	0.36	10.94
	3	52	6.13		232.00	0.29	8.81
	5	18	6.06		318.00	0.22	6.68
	7	0	6.00		420.00	0.16	4.86
	8	40	5.95		520.00	0.11	3.34
	11	26	5.92		686.00	0.08	2.43
	15	0	5.90		900.00	0.06	1.82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Elapsed Time in Seconds

Project: C.S.M.I. SITE
Project No.: 430.01
Well No.: TWP-5
Test Date: 07/05/90
Formation Tested: OVERBURDEN
Rising (R) or Falling (F) Head Test: (R)

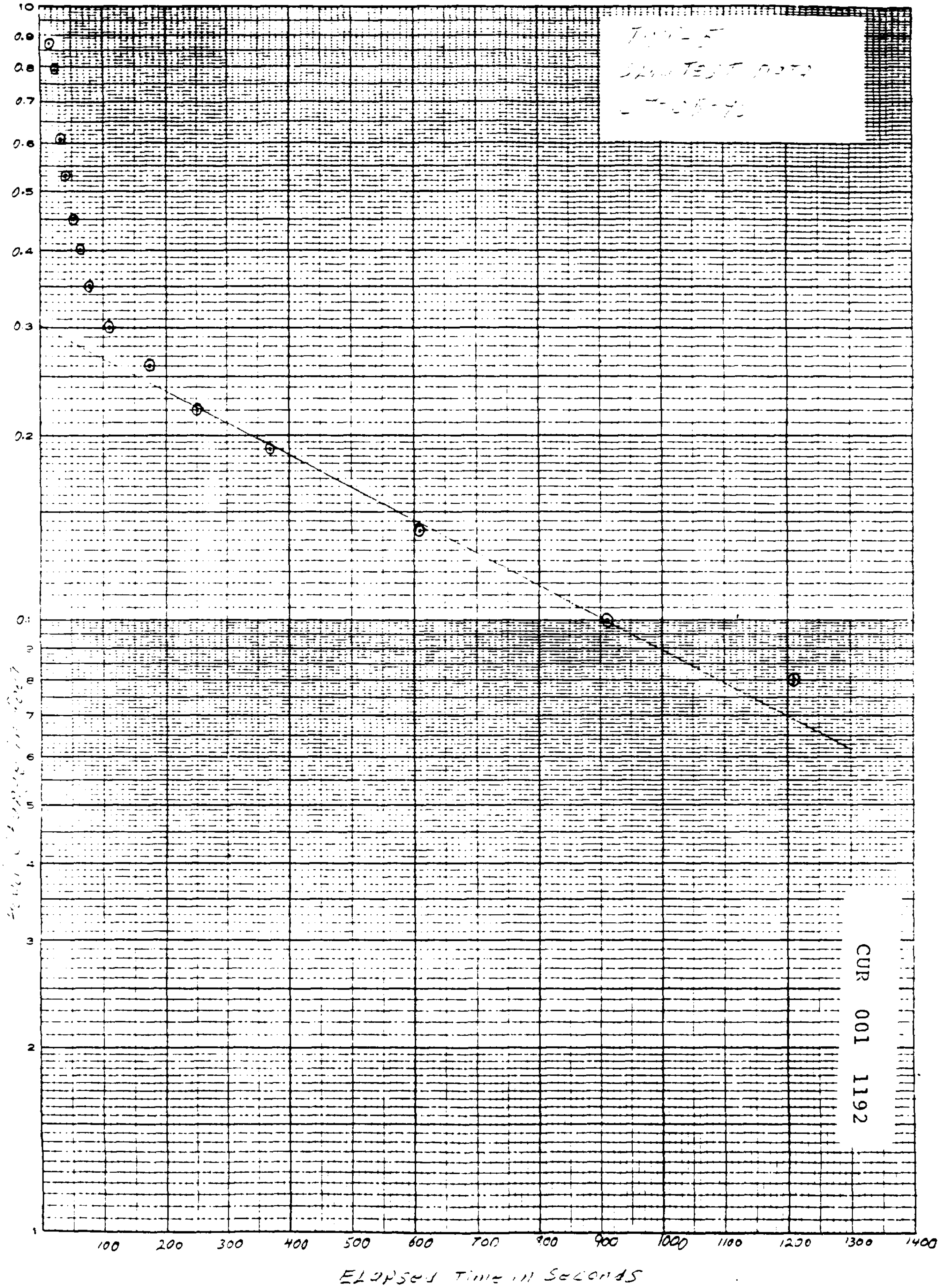
		(cm)
Stickup (ft)	1.75	53.34
Static Water Level (ft)	6.92	210.92
Depth to bottom of screen (ft from ground level)	10.00	304.80
Boring Diameter (in)	8.25	20.96
Casing Diameter (in)	2.00	5.08
Screen Diameter (in)	2.00	5.08
Screen Length (ft)	5.00	152.40
Depth to Boundary	16.00	487.68
Delta H at time 0 (ft)	0.31	9.45
Delta H at Time t (ft)	0.10	3.05
Time t (seconds)	910	
Ratio Kh/Kv	1	
Porosity of Filter Pack	0.3	

	cm/sec	gpd/ft2
K (Bouwer-Rice)	2.6E-04	5.5
K (Hvorslev Time Lag)	7.2E-05	1.5
K (Hvorslev Variable Head)	7.2E-05	1.5

SLUG TEST DATA REDUCTION

Well No TWP-5 Initial Depth to water (ft): 6.92
Initial Time (seconds): 0.00

Clock Time HR	MN	Sec	Depth to water FT	IN	Elapsed Time in Seconds	Head Change in feet	Head Change in cm.
		0	6.92		0.00	0.00	0.00
		15	7.79		15.00	0.87	26.43
		22	7.71		22.00	0.79	24.00
		31	7.53		31.00	0.61	18.53
		40	7.45		40.00	0.53	16.10
		53	7.37		53.00	0.45	13.67
	1	4	7.32		64.00	0.40	12.15
	1	20	7.27		80.00	0.35	10.63
	1	50	7.22		110.00	0.30	9.11
	2	55	7.18		175.00	0.26	7.90
	4	10	7.14		250.00	0.22	6.68
	6	10	7.11		370.00	0.19	5.77
	10	10	7.06		610.00	0.14	4.25
	15	10	7.02		910.00	0.10	3.04
	20	10	7.00		1210.00	0.08	2.43



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ELAPSED TIME IN SECONDS

APPENDIX D

FIELD LABORATORY ANALYTICAL RESULTS

MOBILE LABORATORY FIELD ANALYSIS

Volatile Organics:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with flame ionization and photoionization detection. The sample preparation method was EPA Method 3810; Headspace Screening Method. The results were calculated using the internal standard method. Compounds analyzed for included:

- Methylene Chloride
- Trichlorofluoromethane
- 1,1-Dichloroethene
- 1,1-Dichloroethane
- trans-1,2-Dichloroethene
- Chloroform
- 1,2-Dichloroethane
- 1,1,1-Trichloroethane
- Carbon Tetrachloride
- Bromodichloromethane
- 1,2-Dichloropropane
- cis-1,3-Dichloropropene
- Benzene
- Dibromochloromethane
- 1,1,2-Trichloroethane
- trans-1,3-Dichloropropene
- 2-Chloroethylvinyl ether
- Bromoform
- 1,1,2,2-Tetrachloroethane
- Tetrachloroethene
- Toluene
- Chlorobenzene
- Ethylbenzene
- Xylenes
- Trichloroethene

PCBs:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with an electron capture detector. The sample preparation method was adapted from: "Field Measurement of PCB's in Soil and Sediment Using a Portable Gas Chromatograph" (Thomas M. Spittler, USEPA Regional I Lexington, MA). The packed column GC method consists of a hexane/methanol extraction of the soil with a direct injection of 1-5 ul of the extract. The results were calculated using the external standard method.

The following Aroclors were analyzed for:

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

REMEDIAL INVESTIGATION

CURCIO SCRAP METAL, INC. SITE

FIELD LABORATORY RESULTS

SUMMARY TABLE

Sample	VOC (ppm)	PCB (ppm)
SB-1, 2-4	ND	11.1 1248 Aroclor
4-6	1.12 Xylene	3.3 1248
	0.4 1,2-DCE	
SB-2, 0-2	1.1 PCE	10.0 1254
		39.0 1248
2-4	0.72 PCE	2.5 1254
		12.0 1248
4-6	ND	1.3 1254
		3.7 1248
SB-3, 0-2	<0.4 1,2-DCE	4.3 1248
	<0.4 TCE	1.0 1254
2.5-4.5	ND	<1.0 1260
4.5-6.5	ND	ND
SB-4, 0-2	6.0 Ethylbenzene	3.6 1248
2-4	0.8 Toluene	7.6 1254
	1.8 Ethylbenzene	
	9.2 Xylene	
4-6	<0.4 Ethylbenzene	0.7 1254
SB-5, 0-2	<0.4 Toluene	0.5 1248
2-4	<0.4 Toluene	2.8 1248
4-6	<0.4 Toluene	ND
SB-6, 0-2	0.44 1,2-DCE	
	<0.4 Toluene	0.8 1260
	0.48 Ethylbenzene	
2-4	ND	1.3 1254
4-6	<0.4 Toluene	0.9 1248
SB-7, 0-2	<0.4 1,2-DCE	12.9 1242
2-4	<0.4 PCE	4.1 1242
4-6	ND	ND
SB-8, 2-4	<0.4 1,2-DCE	0.9 1260
	<0.4 Ethylbenzene	4.3 1242
	0.42 Xylene	

CUR 001 1196

SUMMARY TABLE (Cont'd.)

Sample	VOC (ppm)		PCB (ppm)	
SB-9, 2-4	<0.4	TCE	1.1	1260 Aroclor
	<0.4	PCE		
SB-10, 0-2	<0.4	1,2-DCE	0.8	1254
	<0.4	Toluene		
	1.2	Ethylbenzene		
	2.2	Xylene		
2-4	<0.4	1,2-DCE	ND	
	<0.4	TCE		
	0.5	PCE		
4-6	ND		ND	
SB-11, 0-2	1.6	1,1-DCA	118.0	1242
	<0.4	1,2-DCE		
	0.5	TCE		
	3.3	PCE		
	<0.4	Toluene		
	<0.4	Ethylbenzene		
	2.8	Xylene		
3-5	<0.4	1,2-DCE	20.0	1242
	<0.4	TCE		
	1.0	PCE		
	0.4	Toluene		
	2.7	Ethylbenzene		
	17.6	Xylene		
5-7	ND		ND	
SB-12, 0-2	0.48	1,2-DCE	1.7	1254
	<0.4	TCE	11.4	1242
	1.9	PCE		
	<0.4	Toluene		
2-4	ND		0.6	1254
4-6	ND		ND	
SB-13, 0-2	<0.4	1,2-DCE	11.0	1248
	0.72	PCE		
	<0.4	Toluene		
	0.5	Ethylbenzene		
2-4	<0.4	1,2-DCE	6.7	1248
	1.0	PCE		
	0.5	Ethylbenzene		
4-6	ND		ND	

CUR 001 1197

SUMMARY TABLE (Cont'd.)

Sample	VOC (ppm)		PCB (ppm)		
SB-14, 0-2	1.8	1,2-DCE	29.0	1248	Aroclor
	0.6	TCE			
	4.8	PCE			
	<0.4	Toluene			
	0.7	Ethylbenzene			
	0.9	Xylene			
2-4	<0.4	1,2-DCE	18.0	1248	
	1.2	TCE			
	2.0	PCE			
	<0.4	Toluene			
	0.4	Ethylbenzene			
	1.3	Xylene			
4-6	<0.4	1,2-DCE	1.2	1248	
	<0.4	TCE			
	0.5	PCE			
	<0.4	Ethylbenzene			
SB-15, 0-2	1.2	1,2-DCE	20.0	1242	
	2.0	TCE	3.0	1260	
	8.6	PCE			
	<0.4	Toluene			
	0.44	Ethylbenzene			
2-4	<0.4	1,2-DCE	13.0	1248	
	<0.4	TCE			
	1.4	PCE			
	<0.4	Toluene			
	<0.4	Ethylbenzene			
4-6	ND		ND		
SB-16, 0-2	<0.4	PCE	3.3	1254	
4-6	ND		0.7	1254	
SB-17, 0-2	1.6	1,2-DCE	20.0	1248	
	2.0	TCE			
	5.1	PCE			
	5.4	Toluene			
	4.1	Ethylbenzene			
	20.4	Xylene			
2-4	ND		<0.5	1248	
4-6	ND		ND		
SB-18, 2-4	ND		ND		

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SUMMARY TABLE (Cont'd.)

Sample		VOC (ppm)		PCB (ppm)		
SB-19	0-2	<0.4	1,2-DCE	10.0	1254	Aroclor
		0.53	TCE	29.0	1242	
		2.6	PCE			
		<0.4	Toluene			
	2-4	<0.4	PCE	17.0	1254	
				42.0	1242	
	4-6	ND		ND		
SB-21,	0-2	ND		1.5	1254	
	2-4	1.1	PCE	8.5	1248	
				3.8	1254	
	4-6	ND		0.7	1254	
SB-22,	0-2	2.9	1,2-DCE			
		1.9	TCE	40.0	1260	
		5.2	PCE			
	2-4	<0.4	PCE	0.8	1260	
	4-6	2.9	1,2-DCE			
		1.6	TCE	23.0	1260	
		5.6	PCE			
	6-8	ND		ND		
SB-23,	0-2	<0.4	1,2-DCE	2.7	1260	
		<0.4	TCE			
		1.5	PCE			
		<0.4	Toluene			
		0.76	Ethylbenzene			
		3.3	Xylene			
	2-4	<0.4	PCE	<0.5	1262	
	4-6	<0.4	1,2-DCE	<0.5	1260	
		<0.4	TCE			
		0.88	PCE			
		<0.4	Toluene			
SB-24,	0-2	>82.0	1,2-DCE	3.8	1248	
		1.2	TCE			
		7.0	PCE			
		Present	Benzene			
		4.1	Toluene			
		18.0	Ethylbenzene			
		>95.0	Xylene			
	2-4	2.6	1,2-DCE	2.5	1248	
		<0.4	TCE			
		2.1	PCE			
		0.4	Toluene			
		3.9	Ethylbenzene			

SUMMARY TABLE (Cont'd.)

Sample	VOC (ppm)		PCB (ppm)	
SB-24 (Cont'd.)				
4-6	2.4	1,2-DCE	2.6	1248 Aroclor
	<0.4	TCE		
	1.3	PCE		
	0.6	Ethylbenzene		
	10.7	Xylene		
SB-25, 0.2		1,2-DCE	53.0	1242
		TCE	48.0	1254
		PCE		
		Toluene		
		Ethylbenzene		
		Xylene		
2-4	8.7	1,2-DCE		
	1.8	TCE		
	24.8	PCE	7.7	1254
	0.8	Toluene		
	0.6	Ethylbenzene	9.5	1242
	2.2	Xylene		
4-6	3.6	1,2-DCE	ND	
	1.2	TCE		
	11.0	PCE		
	0.5	Toluene		
	2.4	Xylene		
SB-27, 0-4	<0.4	PCE	600	1248
4-6	0.44	PCE		
	0.47	Xylene	10.0	1248
SB-28, 3-5	0.42	1,2-DCE	2.8	1260
	<0.4	TCE		
	0.88	PCE		
	1.1	Toluene		
	0.4	Ethylbenzene		
	1.04	Xylene		
5-7	0.96	Toluene	<4.0	1248
SB-29, 0-2	1.6	PCE	3.8	1260
	<0.4	TCE	24.0	1242
	<0.4	Toluene		
	<0.4	1,2-DCE		
2-4	1.3	PCE	6.1	1242
	0.6	TCE	5.9	1260
	<0.4	1,2-DCE		
4-6	ND		0.8	1254

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SUMMARY TABLE (Cont'd.)

Sample	VOC (ppm)		PCB (ppm)		
SB-30, 0-2	4.3	PCE	2.6	1260	Aroclor
	<0.4	TCE	21.0	1242	
	<0.4	1,2-DCE			
2-4	1.2	PCE			
	<0.4	TCE	3.8	1260	
	<0.4	1,2-DCE			
	0.9	Toluene			
	<0.4	Ethylbenzene			
	0.8	Xylene			
4-6	0.94	PCE			
	<0.4	Toluene	20.0	1242	
	0.44	Xylene			
SB-31, 0-2	2.7	PCE	1.9	1260	
	0.7	TCE	21.0	1242	
	2.3	1,2-DCE			
	<0.4	Toluene			
2-4			1.3	1260	
	1.0	PCE	3.8	1242	
	0.7	Toluene			
	<0.4	TCE			
	<0.4	1,2-DCE			
	<0.4	Benzene			
4-6	2.8	PCE	12.0	1242	
	0.7	TCE	3.3	1260	
	0.4	1,2-DCE			
	1.2	Xylene			
	<0.4	Toluene			
SB-32, 0-2	2.1	1,2-DCE			
	0.71	TCE	3.0	1260	
	6.2	PCE			
	<0.4	Toluene			
2-4	1.9	PCE	0.6	1260	
	<0.4	TCE			
	<0.4	1,2-DCE			
	<0.4	Toluene			
	<0.4	Ethylbenzene			
	<0.4	Xylene			
4-6	ND		<0.5	1260	

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SUMMARY TABLE (Cont'd.)

Sample	VOC (ppm)		PCB (ppm)		
SB-33, 0-2	2.0	1,2-DCE			
	1.0	PCE	3.5	1248	Aroclor
	<0.4	TCE	<0.5	1260	
	0.4	Toluene			
	<0.4	Ethylbenzene			
	0.6	Xylene			
2-4	8.3	PCE	7.5	1260	
	1.44	TCE	38.0	1248	
	0.88	1,2-DCE			
	<0.5	Toluene			
	<0.5	Xylene			
4-6	No Sample				
SB-35, 0-2	ND		ND		
2-4	ND		ND		
4-6	ND		ND		
SB-36, 0-2	ND		ND		
2-4	ND		ND		
4-6	ND		ND		
SB-37, 0-2	ND		ND		
2-4	ND		ND		
4-6	ND		ND		
SB-38, 0-2	<0.4	Toluene	1.3	1242	
	1.2	Xylene			
2-4	ND		0.6	1254	
4-6	ND		ND		
SB-39, 0-2	ND		ND		
2-4	ND		ND		
4-6	ND		ND		
SB-40, 0-2			ND		
2-4	ND		ND		
4-6			ND		
SB-41, 0-2	<0.4	1,2-DCE	1.6	1254	
	<0.4	TCE			
	0.6	PCE			
	<0.4	Toluene			
2-4	ND		ND		
4-6	ND		ND		

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SUMMARY TABLE (Cont'd.)

Sample	VOC (ppm)		PCB (ppm)		
SB-42, 0-2	0.9	1,2-DCE	21.0	1242	Aroclor
	0.5	TCE	11.0	1254	
	3.8	PCE			
	0.6	Toluene			
	<0.4	Ethylbenzene			
	1.1	Xylene			
2-4	1.3	TCE	12.0	1242	
	0.4	1,2-DCE	<0.5	1254	
	<0.4	Toluene			
4-6	ND		ND		
SB-43, 0-2	ND		ND		
2-4	ND		ND		
4-6	ND		ND		
SB-44, 0-2	0.40	Xylene	3.9	1242	
	0.44	PCE	2.0	1254	
	<0.40	Toluene			
	<0.4	Ethylbenzene			
2-4	No Sample				
4-6	ND		ND		
SB-45, 0-2	ND		2.0	1242	
2-4	ND		1.3	1254	
4-6	ND		1.6	1242	
SB-46, 0-2	ND		ND		
2-4	ND		ND		
4-6	ND		ND		
SB-47, 0-2	ND		ND		
2-4	ND		ND		
4-6	ND		ND		
SB-48, 0-2	ND		<0.5	1242	
2-4	ND		ND		
4-6	ND		ND		

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SUMMARY TABLE (Cont'd.)

Sample		VOC (ppm)		PCB (ppm)	Aroclor
MW-1,	0-2	ND		ND	
	2-4	ND		ND	
	4-6	ND		ND	
MW-2,	0-2	ND		<0.5	1248
	2-4	ND		1.1	1248
	4-6	ND		ND	
MW-3,	4-6	ND		ND	
MW-4,	0-2	1.0	1,2-DCE	2.3	1242
		0.5	TCE		
		3.4	PCE		
		0.4	Toluene		
		<0.4	Ethylbenzene		
		0.86	Xylene		
	2-4	<0.4	1,2-DCE	7.5	1242
		0.6	PCE		
		0.4	Toluene		
		<0.4	Ethylbenzene		
	4-6	<0.4	1,2-DCE	5.4	1260
		1.1	PCE	10.8	1242
		<0.4	Toluene		