PRELIMINARY ASSESSMENT REPORT

FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

Submitted by

Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07102

Prepared by:

Langan Engineering and Environmental Services, Inc.
River Drive Center 1
Elmwood Park, New Jersey 07407

Revised June 2000
October 1998
1432502

PSE&G

The Energy People

New Jersey Department of Environmental Protection
Site Remediation Program

PRELIMINARY ASSESSMENT REPORT

This form has been created to assist in completing a Preliminary Assessment in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E. It must be completed in detail and supplemented with narratives where directed. This form takes the Preliminary Assessment requirements of the Technical Rules and puts them into a question and answer format. It is the foundation for completing an environmental investigation of a site as a means towards obtaining a no-further-action approval from the Department; as well as a means toward meeting the minimum requirements of the due diligence requirements of the innocent purchaser defense as defined by N.J.S.A. 58:10-23.11g

INFORMATION IN THE REPORT SHALL BE USED AS THE INITIAL BASIS FOR ASSESSING POTENTIAL ENVIRONMENTAL CONCERNS. THIS FORM MUST BE CERTIFIED IN ACCORDANCE WITH N.J.A.C. 7:26E-1.5. SUBMIT ONE ORIGINAL CERTIFIED COPY OF THIS FORM UNLESS IT IS ACCOMPANIED BY A SITE INVESTIGATION REPORT AND A PROPOSED REMEDIAL INVESTIGATION WORKPLAN IN WHICH CASE 3 COPIES SHALL BE SUBMITTED.

This form should be used as a foundation for completing a preliminary assessment report in accordance with N.J.A.C.7 : 26E, the Technical Requirements for Site Remediation, subchapter 3.1 and 3.2. The purpose of a preliminary assessment is to identify the presence of any potentially contaminated areas of concern. And if the information gathered to complete this form identifies and potentially contaminated areas of concern, then there is a need to complete a site investigation pursuant to N.J.A.C. 7:26E-3.3 through 3.13. If this is the case, then continue with the remedial activities and submit the preliminary assessment report with a complete site investigation report and a proposal based on the findings of the site investigation.

The Department will accept mimeograph copies or computer-generated copies of this form provided the copies are legible and all questions listed on this form are included.

The application must be notarized.

Should you encounter any problem in completing this form, we recommend that you discuss the matter with your assigned Case Manager for active cases or a representative from the Department if completing the form in anticipation of a future submittal to the NJDEP. Submitting incorrect or insufficient data may cause processing delays and possible postponement of your transaction.

Please call (609) 633-0708 or your assigned case manager between the hours of 8:30 a.m. and 4:30 p.m. to request assistance.

4/98

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
P.O. Box 435, TRENTON, NJ 08625-0435

PRELIMINARY ASSESSMENT REPORT

Answer all questions. Should you encounter any problems in completing this form, we recommend that you discuss the matter with a representative from the Site Remediation Program. Submitting incorrect or insufficient data may cause processing delays and possible postponement of your transaction

PLEASE PRINT OR TYPE Date: **8 September 1998**

Industrial Establishment/Site Name **Former Coal Street Generating Station**

Address **See Attachment A and Drawings 1 and 2**

City or Town **Newark** Zip Code **07102**

Municipality **Newark** County **Essex**

Block (s)	Lots (s)
130	1, 12
133	1
134	10

Site Remediation Program Case Number or EPA Identification Number **N/A**

1. Present a history of ownership and operations at the industrial establishment, in tabular form, from the time the site was naturally vegetated or utilized as farmland in accordance with N.J.A.C. 7:26E-3.1(c)1.i. (attach additional sheets as necessary)

Name of Property Owner	From	To
See Attachment A		

Name of Operator	From	To
See Attachment A		

2A. In accordance with N.J.A.C. 7:26E-3.1(c)1.ii, provide a clear and concise description of the past industrial/commercial operation(s) conducted on site by each owner and operator. To the extent available the site history shall include an evaluation of the following sources of information:

(1) Sanborn Fire Insurance Maps; (2) MacRae's Industrial Directory; (3) Title and Deed; (4) Site plans and facility as-built drawings; (5) federal, state, county and local government files; (6) The Department Geographic Information System. (7) and any additional sources which may be available for a specific site.

Site history is frequently an item where preliminary assessments are incomplete. The Industrial Site Recovery Act requires that a diligent inquiry be made, researching the site history back to January 1, 1932. Common answers to this question have included: "Unknown", or "We are only a tenant on the site and have no knowledge of prior site history". Neither of these answers satisfies the requirement for a due diligent inquiry.

To avoid having a PA found incomplete by the Department due to insufficient information, the site history must be researched. The following are ways of obtaining information regarding site history: title searches; contacting the local and county health officials and municipal agencies (for example, local fire and police departments, and local planning, zoning, adjustment boards); requesting any information these public agencies may have on the specific location; and interviewing long time neighbors of the industrial establishment. Tenants should always request information from the landlord. The applicant should always document any attempts to locate this information to support a claim that a diligent inquiry has been conducted. If the prior site history demonstrates that the current building was built on vacant unimproved property, it should be reported as such. If the site has been, or is now the subject of a site remediation , any prior cases should always be referenced.

Provide the page or appendix number where the site history may be found. **Attachment A**

Provide a listing of the resources utilized to compile the site history and as appropriate copies of any maps or information, which will assist the Department in evaluating your conclusions.

Name of Resource	Date of document reviewed	Appendix # if providing copies
See Attachment B		

2B. Include a detailed description of the most recent operations subject to this preliminary assessment.
Provide the page or appendix # where the description of the most recent operations may be found. **Attachment C**

3. Hazardous Substance/Waste Inventory: N.J.A.C. 7:26E-3.1(c)1.iii. List all raw materials, finished-products, formulations and hazardous substances, hazardous wastes, hazardous constituents and pollutants, including intermediates and by-products that are or were historically present on the site. Note: If past usage included farming, pesticides may be a concern and should be included in this list.

Material Name	CAS # if known	Typical annual usage (gallons/lbs.)	Storage method (i.e. Drum, tank, jars)
See Attachment D			
And Drawing 3			

4 A. In accordance with N.J.A.C. 7:26E-3.1(c)1iv provide a summary of all current and historic wastewater discharges of Sanitary and/or Industrial Waste and/or sanitary sludges. Present and past production processes, including dates, and their respective water use shall be identified and evaluated, including ultimate and potential discharge and disposal points and how and where materials are or were received on-site. All discharge and disposal points shall be clearly depicted on a scaled site map.

Site Information

Discharge Period		Discharge Type	Discharge Location
From	To		
1894	1924	Sanitary/Industrial	Newark Combined Sewer System
1924	1980	Sanitary/Industrial	PVSC Treatment Works

While no specific information is available, disposal practices for the Newark, New Jersey vicinity in the late nineteenth and early twentieth centuries was to discharge to the Newark Combined Sewer System, which discharged to the Passaic River. In 1924, the Passaic Valley Sewerage Commissioners installed a sanitary sewer system to accept sanitary and industrial wastes, which were treated and ultimately discharged to New York Bay.

4B. Provide a narrative of disposal processes for all historic and current process waste streams and disposal points. (attach additional sheets if necessary)

No information is available (See 4A).

5. This question requires the applicant to conduct a diligent inquiry into the current and historic operations at the site to identify all of the potential areas of concern, which formerly or currently exists at the industrial establishment as defined in N.J.A.C. 7:26E-1.8.

Diligent inquiry as defined in N.J.A.C.7:26E-1.8 states:

A. Conducting a diligent search of all documents which are reasonably likely to contain information related to the object of the inquiry, which documents are in such person's possession, custody or control, or in the possession, custody or control of any other person from whom the person conducting the search has a legal right to obtain such documents; and

B. Making reasonable inquiries of current and former employees and agents whose duties include or included any responsibility for hazardous substances, hazardous wastes, hazardous constituents, or pollutants, and any other current and former employees or agents who may have knowledge or documents relevant to the inquiry.

In accordance with N.J.A.C. 7:26E3.1(c)1.v., a narrative shall be provided for each area of environmental concern describing the (A) Type; (B) Age; (C) Dimensions of each container/area; (D) Chemical Content; (E) Volume; (F) Construction materials; (G) Location; (H) Integrity (i.e., tank test reports, description of drum storage pad); and (I) Inventory control records, unless a Department-approved leak detection system, pursuant to N.J.A.C. 7:1E or 7:14B, has always been in place and there is no discharge history. If sampling is not proposed for any identified area of environmental concern, please explain why it is believed that the area of environmental concern does not contain contaminants above the applicable remediation standards. Submit all necessary documentation to verify this belief. The required narrative need not describe the sampling to be completed; however, it should state that sampling will be completed in accordance with the appropriate section of N.J.A.C.7:26E. Detailed descriptions of all remediation activities shall be described in the site investigation report in accordance with N.J.A.C.7:26E-3.13. Note: If the industrial establishment has multiple locations for one type of area of concern (example: underground storage tanks are located in 3 separate areas of the facility), each area must be discussed separately.

Please indicate if any of the potential areas of environmental concern listed below in #5A through #5G, as defined in N.J.A.C. 7:26E-1.8, formerly or currently exist at the industrial establishment by indicating Yes or No in the appropriate space as provided.

For the Location Reference Keyed to Site Map, use either a number or letter identification and be consistent throughout each phase of the remediation, referring to the same identification provided herein.

Provide the required narrative as an appendix to this report. Do not try to provide a narrative in the space provided **See Attachment E and Drawings 3, 4, and 5**

I hereby certify that a diligent inquiry has been conducted to identify all current and historical potential areas of environmental concern and based on the diligent inquiry the areas of environmental concern identified below in question 5A through 5G are the only areas of environmental concern believed to exist at the above referenced industrial establishment.

A. Bulk Storage Tanks and Appurtenances, including, without limitation :

Area of Concern	Currently or Formerly Exists at the Site Yes/No	Location Referenced to the Site Map	Appendix
Aboveground Storage Tanks and Associated Piping	**Unknown**	--	--
Underground Storage tanks and Associated Piping	**Yes**	AOC-1, AOC-2, and AOC-3; Drawings 3, 4 and 5	**C, D, and E**
Silos	**No**	--	--
Rail Cars	**No**	--	--
Loading and unloading areas	**Yes**	*Drawing 3	**C**
Piping, above ground and below ground pumping stations, sumps and pits	**Unknown**	--	--

*Not an AOC based on initial characterization sampling in 1987.

B. Storage and Staging Areas, including

Area of Concern	Currently or Formerly Exists at the Site Yes/No	Location Referenced to the Site Map	Appendix
Storage pads including drum and/or waste storage	**Yes**	AOC-6*; Drawings 3, 4 and 5	**D, E**
Surface impoundments and lagoons	**No**	--	--
Dumpsters	**Unknown**	--	--
Chemical storage cabinets or closets	**Unknown**	--	--

*Smaller pad not an AOC based on initial characterization sampling in 1987.

C. Drainage systems and areas including without limitation

Area of Concern	Currently or Formerly Exists at the Site Yes/No	Location Referenced to the Site Map	Appendix
Floor drains, trenches and piping and sumps	Unknown*	--	--
Process area sinks and piping which receive process waste	Unknown*	--	--
Roof leaders when process operations vent to the roof	No	--	--
Drainage swales & culverts	Unknown*	--	--
Storm sewer collection systems	Unknown*	--	--
Storm water detention ponds and fire ponds	No	--	--
Surface water bodies	No	--	--
Septic systems leachfields or seepage pits	Unknown*	--	--
Drywells and sumps	Unknown*	--	--

*The locations of former discharge and disposal points (i.e., drains, sumps, sewers, etc.) are not known. The site is presently vacant; all structures (unoccupied since 1980) were razed in 1990. There are no current wastewater discharges. PSE&G does not currently possess any records that could be used to identify the locations of former wastewater/sewer lines.

D. Discharge and disposal areas, including, without limitation:

Area of Concern	Currently or Formerly Exists at the Site Yes/No	Location Referenced to the Site Map	Appendix
Areas of discharge per N.J.A.C. 7:1E	Yes	AOCs 1, 2, 3, and 6	C, D, and E
Waste piles as defined by N.J.A.C 7:26	No	--	--
Waste water collection systems including septic systems, seepage pits, & dry wells.	No	--	--
Landfills or landfarms	No	--	--
Sprayfields	No	--	--
Incinerators	No	--	--
Historic Fill or any other Fill material	Yes	AOC-5*	E and F
Open Pipe discharges	Unknown	--	--

*Not historic fill

E. Other areas of concern, including, without limitation:

Area of Concern	Currently or Formerly Exists at the Site Yes/No	Location Referenced to the Site Map	Appendix
Electrical Transformers & Capacitors	Yes*	--	--
Hazardous material storage or handling areas	Yes*	--	--
Waste Treatment areas	Unknown	--	--
Discolored or spill areas	Yes	AOC-6	D, E
Open areas away from production areas	Yes	AOC-5	D, E
Areas of stressed vegetation	Unknown	--	--
Underground piping including industrial process sewers	Yes*	--	--
Compressor vent discharges	Unknown	--	--
Non-contact cooling water discharges	Unknown	--	--
Areas which receive flood or storm water from potentially contaminated areas	Unknown	--	--
Active or Inactive production wells	No	--	--

*These areas are believed to have existed based on past site use; however, PSE&G does not know their locations.

F. Building interior areas with a potential for discharge to the environment, including, without limitation:

Area of Concern	Currently or Formerly Exists at the Site Yes/No	Location Referenced to the Site Map	Appendix
Loading or Transfer areas	Unknown*	--	--
Waste Treatment areas	Unknown*	--	--
Boiler rooms	Yes*	--	D, E
Air vents and ducts	Unknown*	--	--
Hazardous material storage or handling areas	Yes*	--	--

*These areas are believed to have existed or could have existed based on past site used; however, PSE&G does not know their locations.

G. Any other site-specific area of concern.

Area of Concern	Currently or Formerly Exists at the Site Yes/No	Location Referenced to the Site Map	Appendix
Former Paint Shop	Yes	AOC-4	C, E

6. If the site area exceeds two acres, an interpretation of the aerial photographic history of the site shall be submitted in accordance with N.J.A.C. 7:26E-3.1(c)1.vi. The interpretation shall be based on available current and historical color, black and white and infrared aerial photographs (scale 1:18,000 or less) of the site and surrounding area at a frequency that provides the evaluator with a historical perspective of site activities. The photographic history shall date back to 1932 or the earliest photograph available. Aerial photographs are available for review at the New Jersey Department of Environmental Protection, Tidelands Management Program, Aerial Photo Library, 9 Ewing Street, Trenton, New Jersey, (609) 633-7369. Note, the applicant is not required to provide the Department with copies of the aerial photographs reviewed only an interpretation of what was observed in each photograph, which may represent an environmental concern.

_____ Check here if an aerial photo review was not complete and provide a reason .

_____

_____

Provide the appendix number for the air photo review narratives **Attachment G**

7. Discharge History of Hazardous Substances and Wastes, N.J.A.C. 7:26E-3.1(c)1vii :

A. Have there been any known discharges of hazardous substances and wastes at the site?

_____ No (Go to question #8) **X** Yes (Complete Items 7B & 7C)

B. Was the Department notified of the discharge?

X Yes; _____ No

If yes, provide the Case # **Not Available**

C. Was a no-further-action letter, negative-declaration approval or full-compliance letter issued as a result of the cleanup of this discharge?

_____ Yes (Submit a copy of the no-further-action approval)

__X__ No (Submit a complete Site Investigation or Remedial Action Report documenting the action taken to address the discharge)

8. In accordance with N.J.A.C.7:26E-3.1 (c) 1.vii, provide a description of any remediation activities previously conducted or currently underway at the site, including dates of discharges, remedial actions taken, and all existing sample results concerning contaminants which remain at the site. Copies of Department or other governmental agency no-further-action approvals should also be provided with a description of the areas to which the no-further-action approvals apply. This information is especially important if the approval was granted for the remediation of a portion of a site or a specific discharge event rather than the entire site subject to this preliminary assessment.

_____ Check here if this question does not apply.

Provide the appendix number for the required narrative and data summary **Attachments C and D***

***A Site Investigation (SI) has been conducted. An SI Report is being provided to NJDEP.**

9. Protectiveness of past remedies, Order of Magnitude Analysis, N.J.A.C. 7:26E-3.1(c) 1.ix & N.J.A.C. 7:26E, 3.2(a)5

A. Have any areas of concern previously received a No-Further-Action approval from the Department or other equivalent government agency for which no additional remediation is proposed? __X__ No (go to question #10). _____ Yes (complete 9B).

B. In accordance with N.J.S.A 58:10B-13(e) the following evaluation of the protectiveness of past remedies shall be completed for all areas of concern for which no further action was previously approved by the Department or other equivalent government agency and for which no additional remediation is proposed. All final sampling results shall be evaluated to determine if contaminant levels remaining on site are in compliance with current remediation criteria. The applicant shall complete the following :

Include a table comparing the levels of contaminants remaining in each area of concern, the numerical remediation standard approved in the remedial action workplan or at the time of no-further-action approval and the numerical remediation standards applicable at the time of the comparison. The table shall contain all sampling results, including sample location, sample media, field and laboratory identification numbers, and method detection limits, as necessary, and analytical results for all individual contaminants for each area of concern.

I hereby certify that the order of magnitude analysis required pursuant to N.J.A.C. 7:26E has been completed, since the issuance of a No-Further-Action approval, negative declaration approval or equivalent remediation approval; and (Check the appropriate statements (1), (2), (3) or (4))

(1) ____ The areas of concern listed below contain contaminants above the numerical remediation standard applicable at the time of the comparison, however no further action is required because: (check the appropriate sub statement)

_____ (a) The contaminant concentrations remaining in the areas of concern listed below are less than an order of magnitude (factor of 10) greater than the numerical remediation standard applicable at the time of the comparison;

_____ (b) The areas of concern or the site was remediated using engineering and institutional controls approved by the Department and these controls are still protective of public health, safety and the environment; or

_____ (c) The area of concern or the site was remediated to an approved site specific remediation standard and all of the factors and assumptions which are the basis for deriving the site specific remediation standard remain valid for the site.

Please list the areas of concern for which the previous statement applies.

Area of Concern	Location Reference Keyed to the Site Map
Not Applicable	

(2) ____ The areas of concern listed below contain contaminants above the numerical remediation standard applicable at the time of the comparison and further remediation is required because: (check the appropriate sub statement)

_____ (a) The contaminant concentrations remaining in the areas of concern listed below are more than an order of magnitude (factor of 10) greater than the numerical remediation standard applicable at the time of the comparison;

_____ (b) The areas of concern or the site was remediated using engineering and institutional controls approved by the Department and these controls are no longer protective of public health, safety and the environment; or

_____ (c) The area of concern or the site was remediated to an approved site specific remediation standard and some or all of the factors and assumptions which are the basis for deriving the site specific remediation standard are no longer valid;

Please list the areas of concern for which the previous statement applies.

Area of Concern	Location Reference Keyed to the Site Map

(3) ___ The areas of concern listed below do not contain contaminants above the numerical remediation standard applicable at the time of the comparison and no further remediation is required.

Please list the areas of concern for which the previous statement applies.

Area of Concern	Location Reference Keyed to the Site Map

(4)____The contaminant concentrations remaining in the below listed areas of concern are more than an order of magnitude greater than the numerical remediation standard applicable at the time of the comparison. However, no further remediation is required by the person conducting this preliminary assessment, because, in accordance with N.J.S.A. 58:10B13(e), that person is not liable for the contamination pursuant to N.J.S.A. 58:10-23.11g

Please list the areas of concern for which the previous statement applies.

Area of Concern	Location Reference Keyed to the Site Map

10. Historical Data on environmental quality at the Industrial Establishment

A. Have any previous sampling results documenting environmental quality of the Industrial Establishment not received a no further action approval from the Department or been denied approval by the Department? (N.J.A.C. 7:26E-3.1(c)1.viii)

_____Yes (See Attachment #____) ___X___ No (Go to 11)

B. Have there been any known changes in site conditions or new information developed since completion of previous sampling or remediation? If sampling results were obtained, but are not part of this application, please explain below (N.J.A.C. 7:26E-3.1(c)1xi):

_____

_____

_____

_____

11. List all federal, state and local environmental permits at this facility, including permits for all previous and current owners or operators, applied for, received, or both (Attach additional sheets if necessary).

Check here if no permits are involved X

A. New Jersey Air Pollution Control

Permit Number	Expiration Date	Type of Permitted Unit

B. Underground Storage Tank Registration Number See Note

Size of Tank (Gallons)	Tank Contents

Note: Three USTs were removed from the Site in 1986, prior to formalization of the Department's regulations concerning USTs (i.e., N.J.A.C. 7:14B).

C. New Jersey Pollutant Discharge Elimination System (NJPDES) Permit

Permit Number	Discharge Type	Discharge Location Keyed to Site map	Expiration Date

D. Resource Conservation and Recovery Act (RCRA) permit #_____

E. EPA Identification Number _____

F. In accordance with N.J.A.C. 7:26E-3.1(c) xii, list all other federal, state, local government environmental permits for all previous and current owners or operators applied for and/or received for the site including :

- Name and address of the permitting agency
- The reason for the permit
- The permit identification number
- The application date
- The date of approval, denial or status of the application
- The name and current address of the permittees
- The reason for the denial, revocation or suspension if applicable
- The permit expiration date

__X__ Check here if no other environmental permits were applied for or received for this site.
Note: If other permits were requested or issued, PSE&G does not have copies in its files.

Provide the appendix # for the required listing if other environmental permits exist for this site _____.

12. In accordance with N.J.A.C. 7:26E-3.1(c)xiii, provide a summary of enforcement actions (including but not limited to, Notice of Violations, Court Orders, official notices or directives) for violations of environmental laws or regulations (attach additional sheets if necessary):

A. Check here if no enforcement actions are involved __X__ (Go to 13 otherwise complete 12B)

B. (1) Name and address of agency that initiated the enforcement action

_____

_____

_____

(2) Date of the enforcement action _____

(3) Section of statute, rule or permit allegedly violated _____

_____

_____

(4) Type of enforcement _____

_____

_____

(5) Description of the violation _____

_____

_____

(6) How was the violation resolved? _____

_____

_____

_____

13. In accordance with N.J.A.C. 7:26E-3.1(c) xiv, please provide a narrative description of all areas where non-indigenous fill materials were used to replace soil or raise the topographic elevation of the site, including the dates of emplacement. **Attachment F**

14. A. In accordance with N.J.A.C. 7:26E-3.2(a) 3.i, submit a scaled site plan, detailing the subject lot and block, property and or leasehold boundaries, location of current and former buildings, fill areas, paved and unpaved areas, vegetated areas, and all areas of concern identified above and all active or inactive wells. **See Drawings**

B. Scaled historical site maps and facility as built drawings (if available).

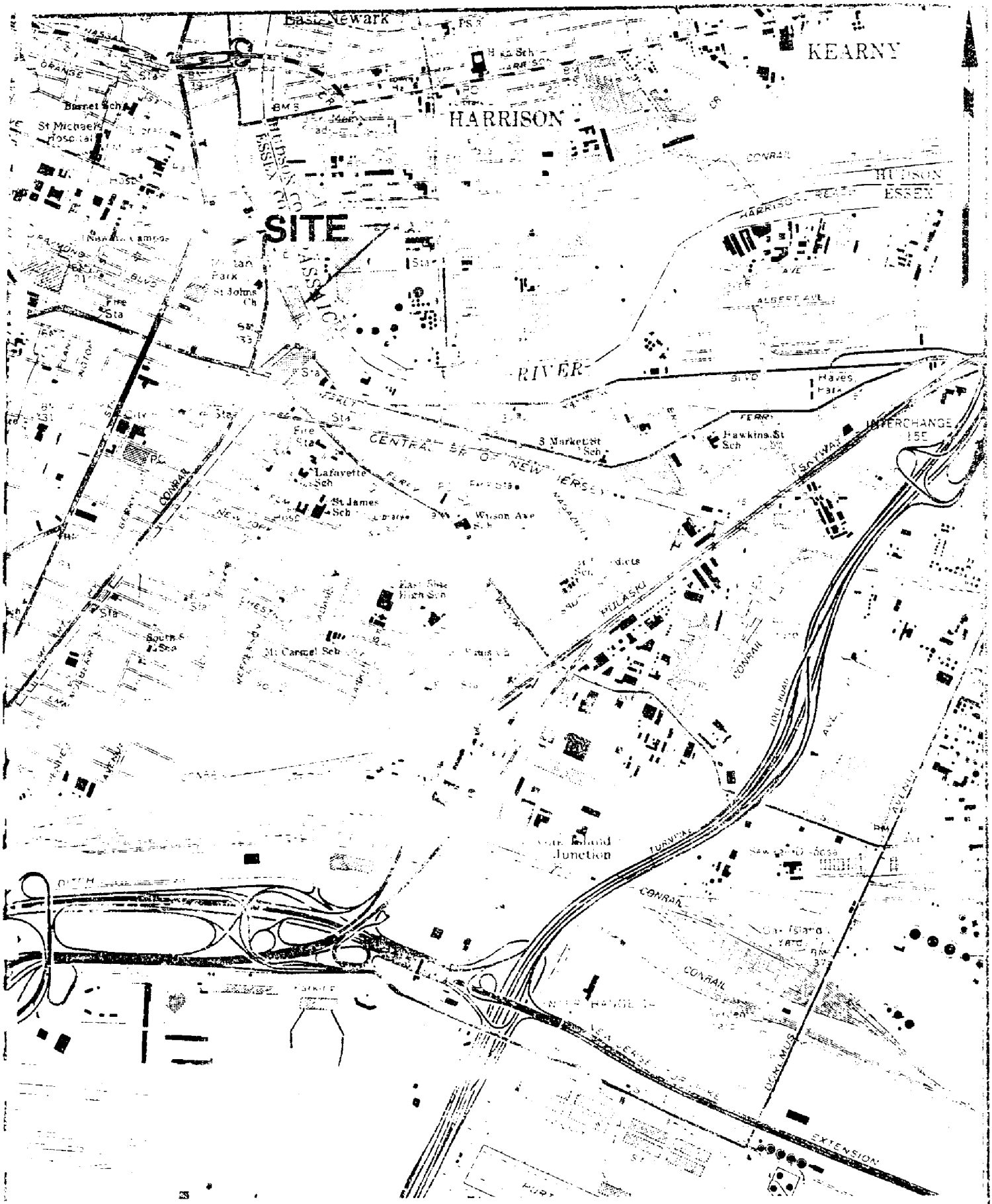
C. A copy of the United States Geologic Survey (USGS) 7.5 minute topographical quadrangle that includes the site and an area of at least one mile radius around the site. The facility location shall be clearly noted. If a portion of the USGS quadrangle is used, the scale, north arrow, contour interval, longitude and latitude with the name and date of the USGS quadrangle shall be noted on the map.

15. In accordance with N.J.A.C. 7:26E-3.2, please provide the date that the site visit was completed to verify the findings of the preliminary assessment. **19 June 1998**

16. List any other information you are submitting or which has been formerly requested by the Department:

Description	Appendix
--	--

START



MAP REF.: ELIZABETH,N.J. U.S.G.S. QUADRANGLE MAP

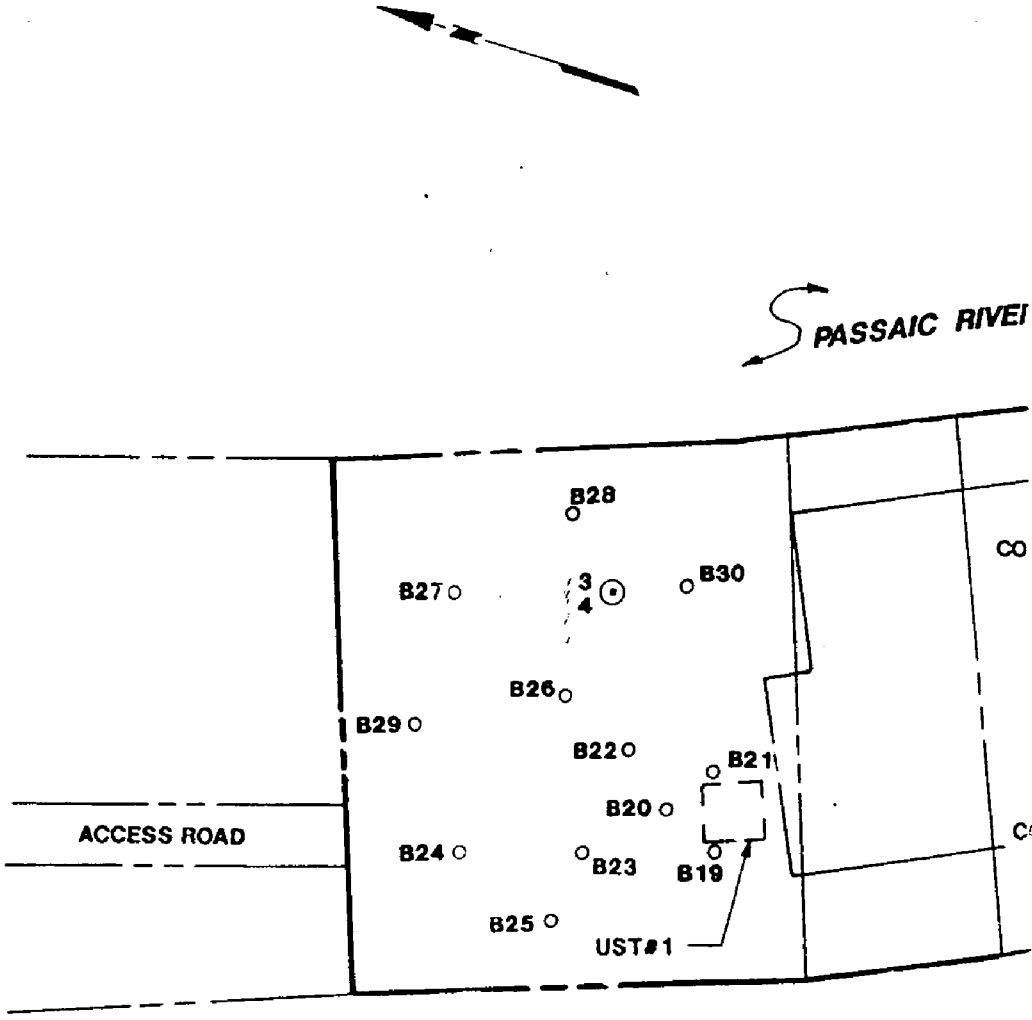
Langan
Engineering and Environmental Services

PSE&G COAL STREET
SITE LOCATION MAP

NEWARK — NEW JERSEY

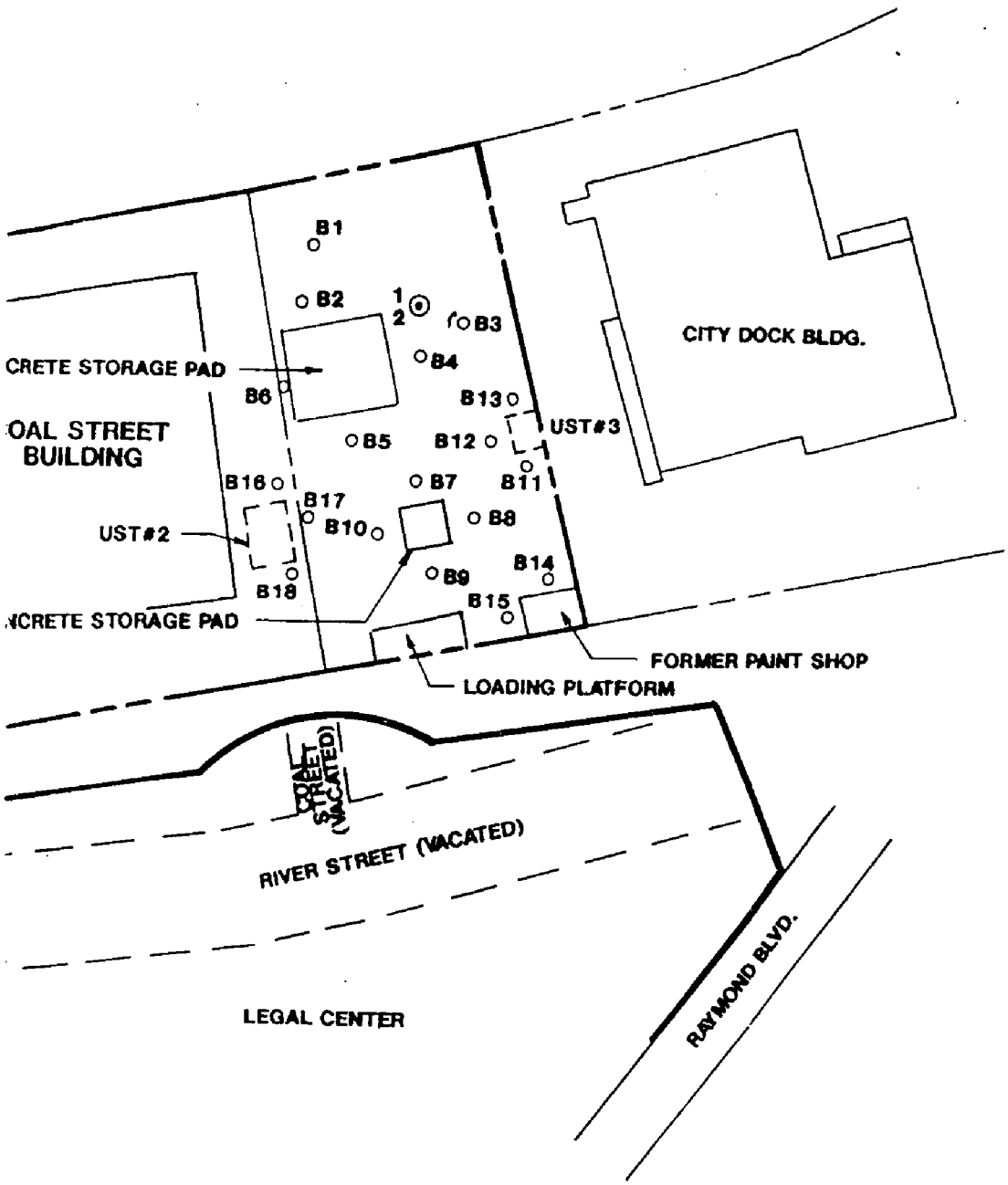
1432502 | 1"=2000' | 6/2/98 | DWG NO 1

TIERRA-B-017957



LEGEND

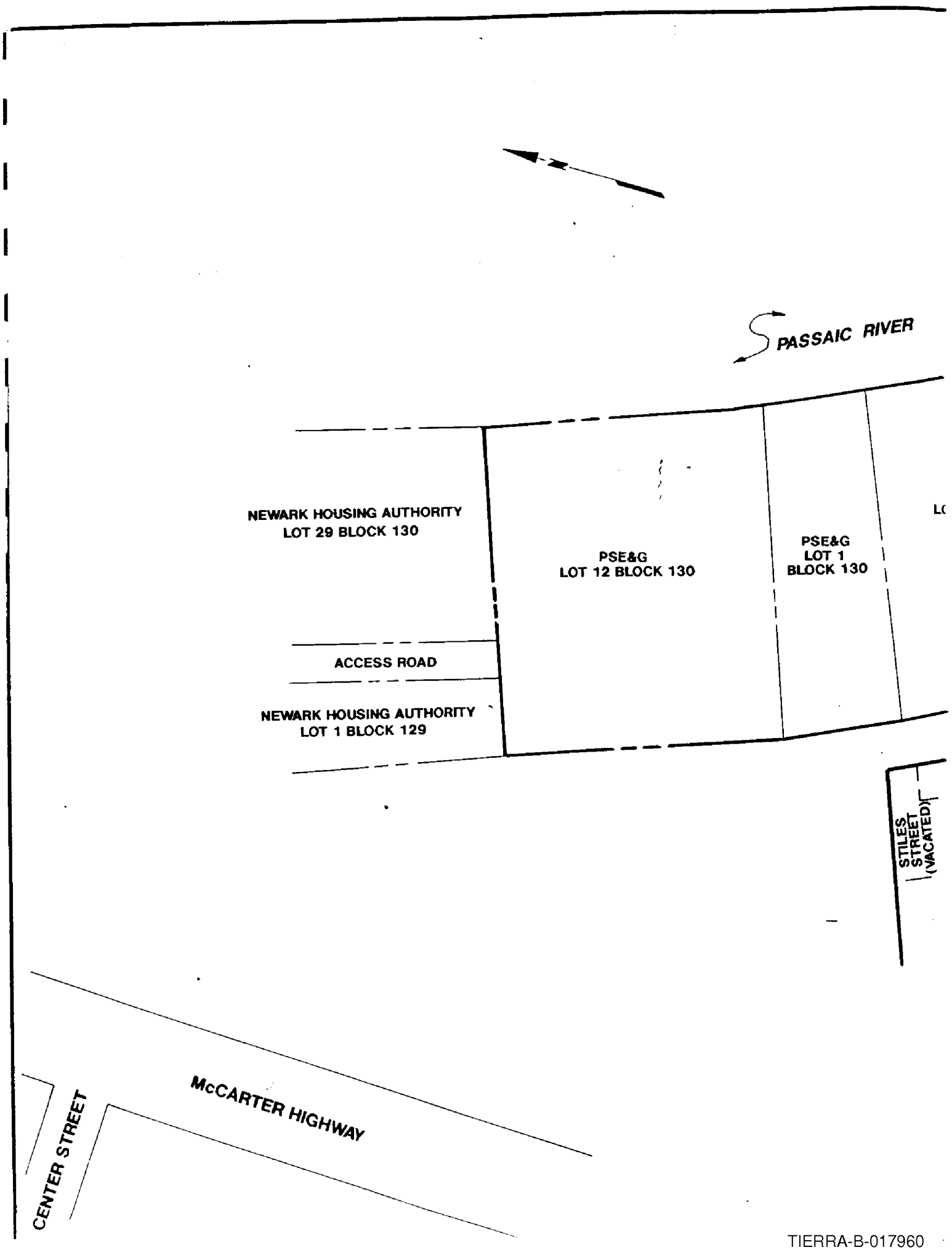
- ○ PREVIOUS BORING LOCATION
- ⊙ PREVIOUS BACKGROUND SOIL SAMPLE LOCATION
- ⊏⊐ APPROXIMATE UST TANK EXCAVATION



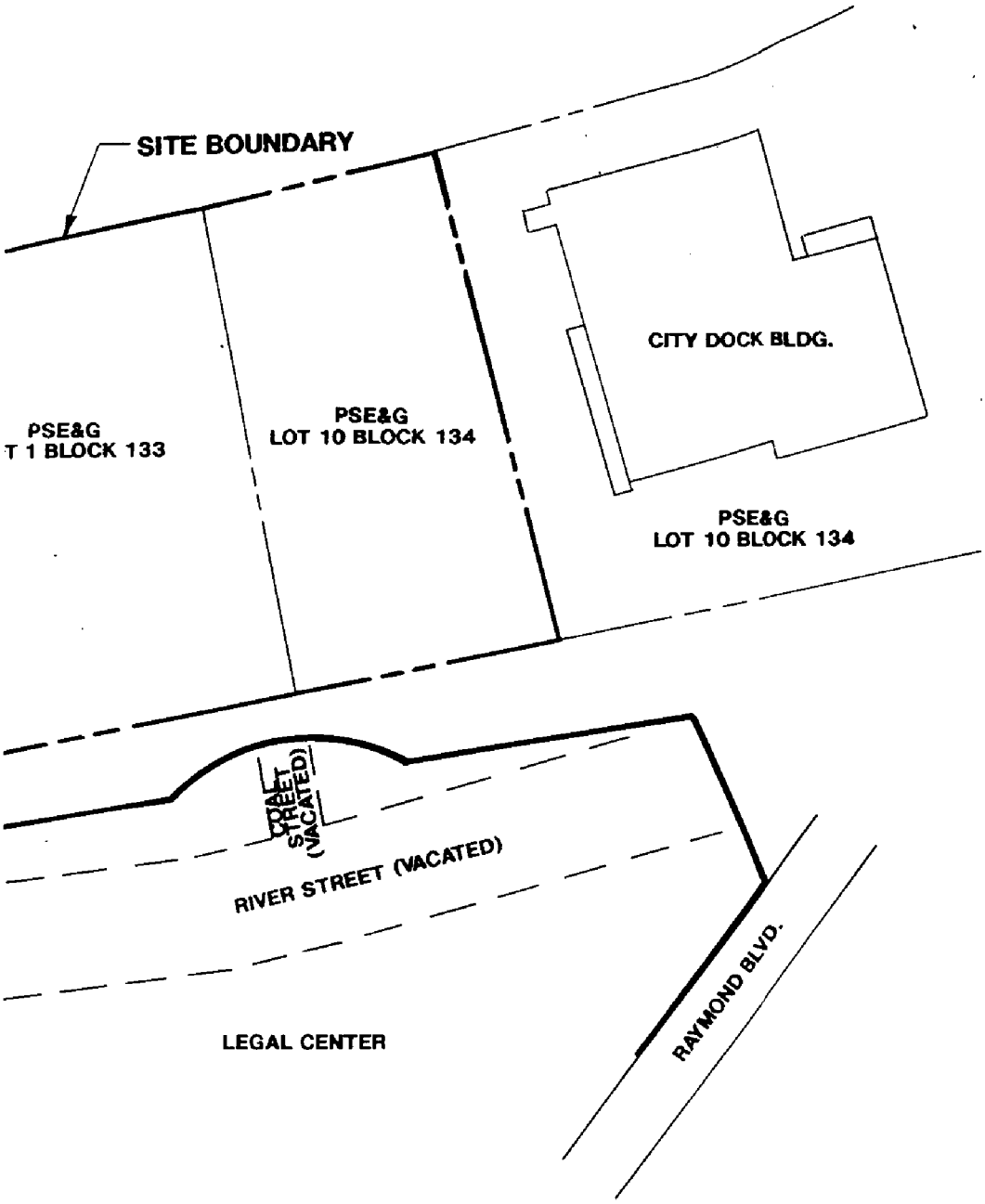
Langan Engineering and Environmental Services
(201) 794-6900
Elmwood Park, NJ Doylestown, PA. Miami, FL

Project **PSE&G FORMER COAL STREET SITE**
UST AND 1987 SAMPLE LOCATIONS
NEWARK NEW JERSEY

Job No.	Date	Scale	Dwg. No.
1432502	8/24/98	N.T.S.	3



TIERRA-B-017960

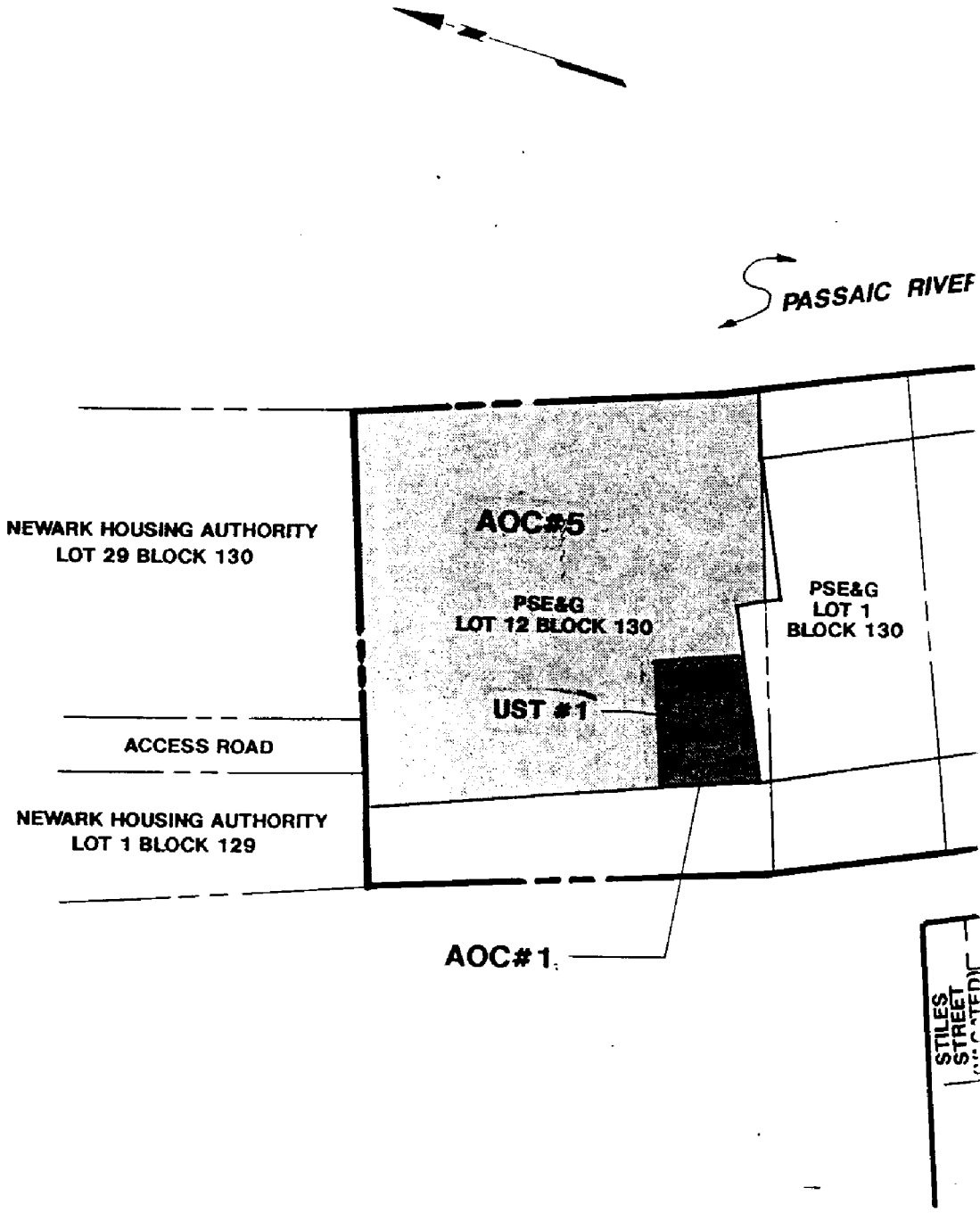


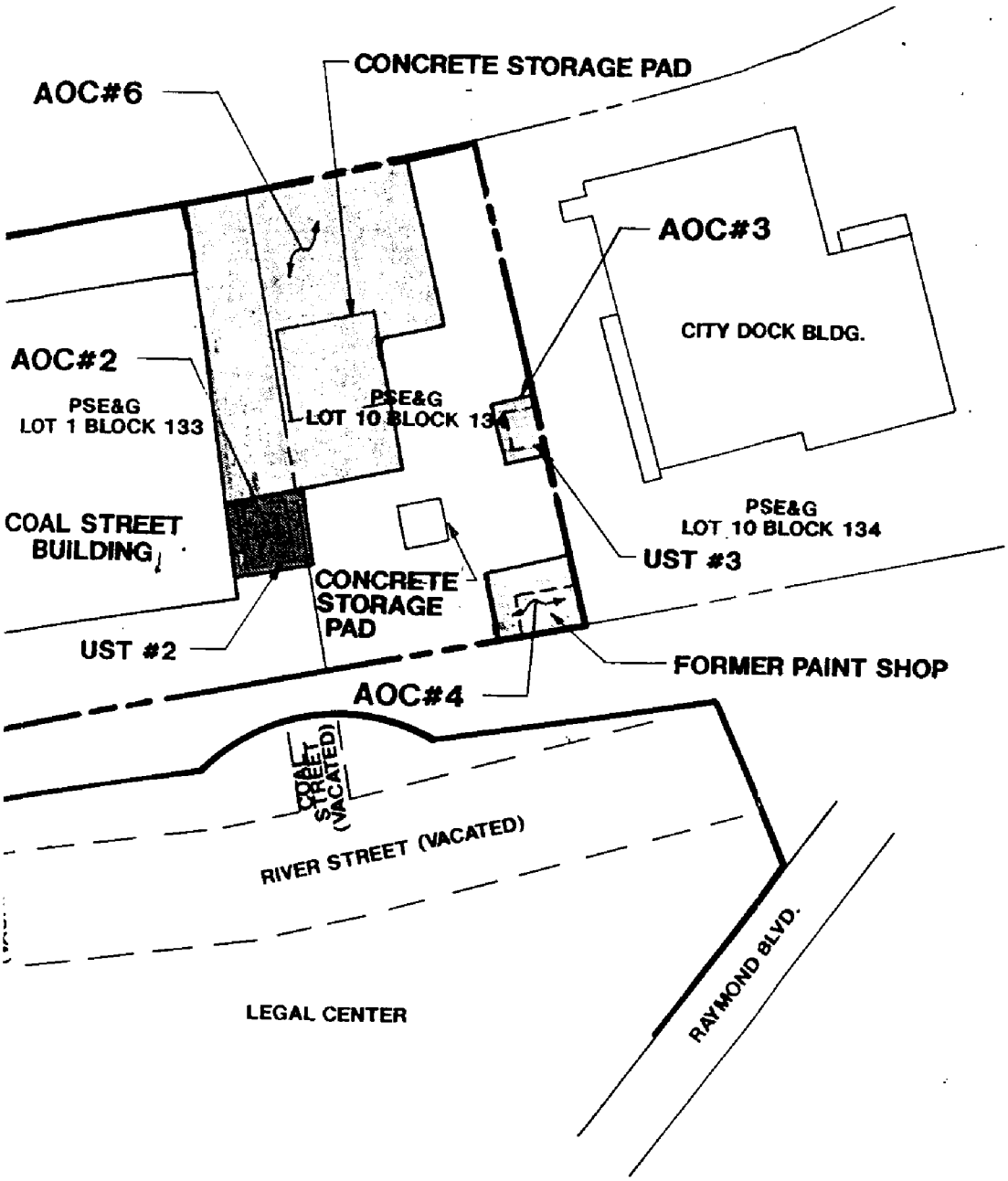
Langan Engineering and Environmental Services
(201) 794-6900
Elmwood Park, NJ Doylestown, PA Miami, FL

Project **PSE&G FORMER COAL STREET SITE**
LOTS & BLOCKS

NEWARK — NEW JERSEY

Job No.	Date	Scale	Dwg. No.
1432502	8/24/98	1"=100'	2


PASSAIC RIVER
NEWARK HOUSING AUTHORITY
LOT 29 BLOCK 130
AOC#5
PSE&G
LOT 12 BLOCK 130
PSE&G
LOT 1
BLOCK 130
UST #1
ACCESS ROAD
NEWARK HOUSING AUTHORITY
LOT 1 BLOCK 129
AOC#1
STILES
STREET



Langan Engineering and Environmental Services
(201) 794-6900
Elmwood Park, NJ Doylestown, PA. Miami, FL

Project **PSE&G FORMER COAL STREET SITE**
AREAS OF CONCERN AND UST'S LOCATIONS

NEWARK NEW JERSEY

Job No.	Date	Scale	Dwg. No.
1432502	8/24/98	1"=100'	5

TIERRA-B-017963

ATTACHMENT A

FORMER COAL STREET GENERATING STATION

Site Location

The former Coal Street Generating Station (hereinafter referred to as "Site") is located on the west shore of the Passaic River in Newark, Essex County, New Jersey (see Figure 1). The Site is bordered on the east by the Passaic River, on the west by River Street, on the north by vacant land and on the south by PSE&G City Dock Substation.

The Site consists of one (1) parcel of land encompassing approximately six (6) acres (see Figure 2). The Site is comprised of following lots/blocks:

a) Block 134, Lot 10 - vacant grass covered lot.
b) Block 133, Lot 1 - vacant grass covered lot.
c) Block 130, Lots 1 and 12 - vacant grass covered lot.

1. Site Operational and Ownership History

PSE&G records indicate that Consolidated Traction Company constructed the Coal Street Generating Station in 1894 for street railway service. From 1894 to 1903 additional capacity in railway generating apparatus was installed in the original station building. In 1903 an addition to the station was built and the railway generating capacity of the station further increased. Consolidated Traction Company leased the property to North Jersey Street Railway Company on June 1, 1898. In 1905 a 3,000 kW turbine-generator was installed, the entire output of which was used at City Dock Generating Station. This unit combined the North Jersey Street Railway Company generating facilities of Coal Street Generating Station, which was entirely street railway service, with those of the United Electric Company at City Dock Generating Station, which was exclusively light and power, to the extent of 3,000 kW.

In July, 1907 North Jersey Street Railway Company merged into Public Service Railway Company. In 1908 a steam pipeline was installed between Coal Street and City Dock Generating Station which was used to exchange steam between the two stations. This added a second means of combining the railway and electric light and power facilities of the two stations.

On July 1, 1910 Public Service Railway merged into Public Service Electric Company. In 1922 use of City Dock generating equipment was discontinued. In 1924 Public Service Electric Company merged into Public Service Electric and Gas Company. The furnishing of power for the combined use of railway and electric light and power services continued until the turbine-generator at Coal Street was discontinued on March 10, 1926. Between March 1926 and June 5, 1928, Coal Street was used exclusively for railway purposes, except that it was possible to transmit some of the energy generated to other locations, where it was converted to supply light and power.

After June, 1928 the building formerly housing the Coal Street Generating Station was used as a vehicle maintenance garage. Vehicle maintenance continued at the Site until circa

1980 after which the building was vacant until its demolition in 1990. Presently, the Site is a grass covered vacant parcel of land.

ATTACHMENT B

FORMER COAL STREET GENERATING STATION

2A. List of Resources

The list of resources utilized to compile the Site history is as follows. Sanborns, Newark Atlas Maps, boring logs for S-10, NKG-14, NKG-15, NKG-16 and H-4, and soil profiles by USACE are also attached.

1. Sanborn Maps from 1892, 1908, 1930, 1950, 1973, 1989, and 1994.

2. Newark Atlas from 1889, 1901, and 1926.

3. PSE&G documents:
   - Generating Station - an interconnection history, 1944, pp. 3-4
   - Property history timeline, circa November 1986

4. Aerial Photographs dated 1940, 5 December 1953, 4 August 1966, 29 October 1976, 26 March 1984, 29 March 1995 and 17 December 1996.

5. Real Estate Appraisal prepared by Sanford Krasner, dated July 30, 1979.

6. Assessment of Environmental Liabilities for PSE&G, Coal Street Site, Newark, New Jersey, prepared by Malcolm Pirnie, dated January 1988.

7. Real Estate Appraisal prepared by Robert W. Hendricks & Co., Inc., dated April 13, 1989.

8. Field Inspection Report for hazardous and toxic material sampling and testing at Newark Streambank Restoration Element, Passaic River Main Stem Flood Protection Project, Newark, New Jersey, Part I: Soil and Groundwater, Prepared by U.S. Army Corps of Engineers, dated 8 February 1995.

9. Joseph G. Minish Passaic River Waterfront Park and Historic Area, Newark, New Jersey, Volume III, Geology and Soils - Appendix B - Part 1 and Part 2, prepared by U.S. Army Corps of Engineers, dated May 1996.

10. Site Development Plans prepared for the Newark Economic Development Corp. by Conoscenti & Galea Associated Architects, dated June 26, 1997.

11. Subsurface Characterization and Environmental Screening of Geotechnical Boring S-10 (Gannett-Fleming Boring), Coal Street Property, Newark, New Jersey, prepared by Langan Engineering and Environmental Services, Inc., dated 12 September 1997.

ATTACHMENT C

FORMER COAL STREET GENERATING STATION

2B. Description of Recent Operations and Site Activities (1928 to 1998)

The information discussed herein is based on diligent inquiry and review of available information. The most recent Site operations conducted were by PSE&G's Vehicle Maintenance Group as discussed below.

Circa June, 1928 the building formerly housing the Coal Street Generating Station was used as a vehicle maintenance garage. Vehicle maintenance continued at the Site until circa 1980 after which the building was vacant until its demolition in 1990. Presently, the Site is a grass covered vacant parcel of land, except for a gravel access road to PSE&G's active substation in the City Dock Building.

Environmental and geotechnical studies have been conducted at the Site as discussed below. Available analytical data is provided herein.

In October 1986, PSE&G removed three (3) underground storage tanks (UST) located at the property (Drawing 3). The USTs were associated with the vehicle maintenance operations. Post-excavation soil samples were collected and analyzed by PSE&G.

Underground Storage Tank Removal

PSE&G removed three (3) underground storage tanks (UST) located at the property in October 1986. UST#1 was a 15,000 gallon No. 4 fuel oil tank, UST#2 was a 1,000 gallon diesel fuel tank, and UST#3 was a 5,000 gallon gasoline tank. See Drawing 3 for UST locations. The heating oil tank (UST#1) was located on the north side of the former vehicle maintenance building in Block 130, the diesel oil tank located south of the former vehicle maintenance building on Block 133 (UST#2), and the gasoline tank was located on the northwest side of the City Dock Substation on Block 134 (UST#3).

Two (2) post-excavation soil samples were collected from each of the UST excavations. Four (4) background soil samples were collected at two (2) on Site locations. All soil samples were analyzed for Total Petroleum Hydrocarbons (TPH) and Polychlorinated Biphenyls (PCBs). Background sample numbers 1 and 2 were collected at the same location and samples 3 and 4 were collected at the same location. The depth of the samples is unknown. The background sample locations are shown on Drawing 3.

TPH concentrations measured in the heating oil tank excavation were 120 parts per million (ppm) and 270 ppm. PCB concentrations from the same excavation were 4.19 ppm and 195.4 ppm. TPH concentrations measured in the diesel fuel excavation were 680 ppm and 365 ppm. PCB concentrations in the same excavation were 4.8 ppm and 4.5 ppm. TPH concentrations measured in the gasoline tank excavation were 2,250 ppm and 1,125 ppm. PCB concentrations in the same excavation were 2.55 ppm and 0.737 ppm. Background soil sample TPH concentrations in numerical order (1 through 4) were 4,350 ppm, 3,900 ppm, 175 ppm, and 315 ppm. PCB concentrations from the same samples were 51 ppm, 793.8 ppm, 8.33 ppm and 77 ppm, respectively.

PSE&G retained Malcolm Pirnie in 1987 to conduct a subsurface soil investigation, to verify the presence of and delineate the extent of previously identified (during UST removal) on-site soil contamination. The results are discussed below.

Site Investigation

PSE&G retained Malcolm Pirnie to verify the presence of and delineate the extent of previously identified (during UST removal) on-Site soil contamination. Malcolm Pirnie conducted a subsurface soil investigation consisting of drilling 30 soil borings (B-1 through B-30) and collecting 60 samples (2 per boring). The boring locations are shown on Drawing 3. All samples were collected from unsaturated soils. Soil samples were collected from twenty-two (22) borings at intervals from 2 ft to 4 ft and 4 ft to 6 ft below grade. Groundwater was encountered at depths less than 6 ft in seven (7) borings (B-23, B-24, B-25, B-26, B-27, B-29, and B-30). Two (2) samples were collected from these borings at shortened intervals (i.e., 0 ft to 1 ft and 1 ft to 2 ft or 0 ft to 1.5 ft and 1.5 ft to 3 ft, etc, depending on depth to groundwater). Groundwater was encountered at a depth of approximately 10 ft in boring B-21. Samples were collected from 2 ft to 4 ft and 8 ft to 10 ft below grade. Malcolm Pirnie reported collecting two (2) samples from boring B-11 in the 4 ft to 6 ft interval.

All samples were analyzed for TPH and PCBs. Priority pollutant metals analysis was conducted on four (4) soil samples collected near the former paint shop. Two (2) of the samples were from boring B-14 and two (2) samples from boring B-15. A loading area was located due north. A complete priority pollutant analysis was conducted on three (3) samples, one (1) in the area of the former paint shop (B-14; 2-4 ft), one (1) at the north end of the Site (B-30; 0-1 ft), and one (1) at the former No. 4 fuel oil tank excavation (B-20; 4-6 ft). See Appendix E for a sampling summary and analytical data.

Malcolm Pirnie reported black stained sand in the UST excavations and around concrete pads north of the City Dock Substation. Oil staining was observed in two (2) borings, B-8 and B-9, adjacent to a small concrete storage pad. Cinder fill was observed in the north end of the property.

Samples collected near the former UST excavations indicated petroleum hydrocarbon contamination to the water table. TPH concentrations adjacent to the former gasoline tank excavations ranged from <10 ppm to 825 ppm. PCB concentrations from the same samples ranged from <0.333 ppm to <1.650 ppm. TPH concentrations adjacent to the former diesel tank excavation ranged from <10 ppm to 4,840 ppm. PCB concentrations in the same samples ranged from <0.33 ppm to <1.65 ppm. TPH concentrations adjacent to the former No. 4 fuel oil tank excavation ranged from <10 ppm to 11,000 ppm. PCB concentrations from the same samples ranged from <0.165 ppm to <0.66 ppm. The less than symbol (<) indicates the result was below the method detection limit (BMDL). An analytical results summary is attached.

TPH concentrations adjacent to the concrete pads ranged from <10 ppm to 4,180 ppm. PCB concentrations in the same samples ranged from <0.165 ppm to 5.745 ppm. TPH concentrations from samples collected at B-8 and B-9 were BMDL to 580 ppm while PCB concentrations were BMDL.

TPH concentrations in samples collected in the north end of the property ranged from <10 ppm to 15,000 ppm. PCB concentrations in the same samples ranged from <0.165 ppm to 11.7 ppm.

Metals contamination was detected at the former paint shop, near the No. 4 fuel oil tank excavation, and at one location in the vacant north end of the Site.

The following metals were detected at the former paint shop: Antimony (BMDL to 5.5 ppm), Beryllium (0.2 ppm to 0.7 ppm), Cadmium (3 ppm to 8.2 ppm), Chromium (2.2 ppm to 15 ppm), Lead (13 ppm to 707 ppm), Nickel (4.5 ppm to 14 ppm), and Zinc (35 ppm to 200 ppm). Very low levels of Polycyclic Aromatic Hydrocarbons (PAHs) and the pesticide Heptachlor were also detected in a sample at the former paint shop.

At the No. 4 fuel oil tank UST excavation metal concentrations were: Beryllium (3.7 ppm), Cadmium (5.9 ppm), Chromium (60 ppm), Copper (60 ppm), Lead (428 ppm), Nickel (131 ppm), and Zinc (1,060 ppm). Very low levels of PAHs were detected in a sample at the same excavation.

Metals concentrations at boring B-30 (north end) were Beryllium (11 ppm), Cadmium (11 ppm), Chromium (128 ppm), Copper (1,000 ppm), Copper (964 ppm), Nickel (449 ppm), and Zinc (3,120 ppm). PAH concentrations were: benzo(a)anthracene (28 ppm), chrysene (29 ppm), benzo(k)fluoranthene (71 ppm), benzo(a)pyrene (28 ppm), indeno(1, 2, 3-cd) anthracene (13 ppm), and low levels of other PAHs. Trace chloroform was also detected.

Subsurface geotechnical investigations were conducted at various properties along the Passaic River in Newark by the U.S. Army Corps of Engineers for a proposed Waterfront Park and Historic Area which would involve bulkhead restoration.

Five soil borings were drilled on-site to gather subsurface information for the proposed development. The soil borings were labeled H-4, NKG-4, NKG-15, NKG-16, and S-10. Soil boring logs, profiles and soil descriptions are provided herein.

The results are summarized below:

U.S. Army Corps, 8 February 1995 Report

- log of boring H-4 indicates 14 ft of brown and black very dense sandy silty gravel fill overlying 2 ft of a stiff dark gray sandy clay. Photoionization Detector (PID) readings all registered 0 ppm and no visual indications of contamination were noted. Two (2) soil samples were collected: one (1) composited from zero (0) to eight (8) feet and the other from eight (8) to sixteen (16) feet. The results cannot be compared to NJDEP Soil Cleanup Criteria (SCC) due to method of sampling (8 ft composite) however, it should be noted that benzo(a)pyrene (0.68 ppm) and benzo(b)/(k)fluoranthene (2.2 ppm) exceeded Residential Direct Contact Soil Cleanup Criteria (RDCSCC) in the 0-8 ft interval.

U.S. Army Corps, May 1996 Report

- borings logs of NKG-14, NKG-15, NKG-16 and soil profiles developed from the logs indicate 13 ft to 15 ft of loose to very dense brown silty sand and gravel fill with concrete, wood and asphalt fragments. The fill overlies 8 ft to 18 ft of loose

to dense gray silty alluvial sand. Approximately 4 ft of soft to firm dark gray clay with wood and siltstone fragments was reported on boring log NKG-16 between the fill and sand. Fourteen to 30 ft of dense to very dense gray and reddish brown silty gravel with siltstone fragments (glacial) was reported beneath the alluvial sand. Up to 22 ft of very stiff to hard reddish brown clayey silt with siltstone fragments and dense reddish brown silty sand with gravel was encountered beneath the glacial gravel.

PID readings, if taken, were not reported. Analytical data was not reported to have been collected from any of the borings.

Langan Engineering Co-Log of Gannett-Fleming Boring S-10, 12 September 1997

- Langan Engineering's log of Boring S-10 indicates 8 ft of brown to black medium dense to very dense sand, silt and gravel fill with some wood and concrete fragments. Beneath the fill lies loose to dense gray fluvial sands interbedded with silt and clay layers. Beneath the gray sands are medium dense to very dense red brown fine sands with varying amounts of silt (glacial). A petroleum oily sheen was observed in the fill, but PID readings registered zero ppm. No other visual indications of contamination were noted in any of the samples and all PID readings were zero ppm.

Discussion of Existing Data

General :

Petroleum hydrocarbon contamination was detected at three borings in exceedance of the current NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC) of 10,000 ppm total organic contaminants. See Drawing 4 for a summary of analytical results from the 1986 and 1987 sampling events, including exceedances of Soil Cleanup Criteria. All three locations are north of the former PSE&G Coal Street building at borings B-20, B-27, and B-30. PCB contamination was detected at seven boring locations in exceedance of the RDCSCC of 0.49 ppm: four in the north end of the Site and three on the north, east, and west sides of the large concrete storage pad located north of the City Dock Substation. Method detection limits for fourteen samples from nine other boring locations were higher than the current RDCSCC for PCB. These samples were collected adjacent to the three UST excavations, the former paint shop, east of the large concrete storage pad, and the north end of the Site. PCB contamination was detected in three of four October 1986 background soil samples in exceedance of the impact to Groundwater Soil Cleanup Criteria (IGWSCC) of 50 ppm.

Individual metals were detected at levels exceeding their respective RDCSCC in all samples from the four boring locations (B-14, B-15, B-20 and B-30) at which metals were analyzed. Cadmium and lead exceedances were detected at the former paint shop (B-14 and B-15). Beryllium, cadmium and lead exceedances were detected in the vicinity of the former No. 4 heating oil tank excavation (B-20). Beryllium, cadmium, copper, lead, nickel and zinc exceedances were detected in boring B-30 in the north end of the Site.

PAH exceedances of the RDCSCC were detected for benzo(a)anthracene, chrysene, benzo(k)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene at boring B-30. None of these compounds exceeded their respective IGWSCC.

No volatile organic (VO) or pesticide exceedances of the RDCSCC were detected in any of the three samples analyzed for VOs or pesticides.

Summary :

PCB and petroleum hydrocarbon contamination exists to the water table at several locations across the Site. PCBs in particular have a potential widespread distribution and were detected at several locations either exceeding the RDCSCC or IGWSCC. Certain metals were detected at levels exceeding RDCSCC in every sample analyzed. Five (5) PAHs were detected at levels exceeding their respective RDCSCC in the only sample analyzed for PAHs. PAHs are commonly detected in cinder fill, which was observed in four (4) soil borings at the north end of the site.

Site soils have not been adequately delineated to determine the limits of contamination. Additional soil sampling is warranted based on the available data. Since little information is available regarding the background samples at which PCBs were detected in exceedance of existing IGWSCC, additional soil sampling should be conducted to determine if a potential impact to groundwater exists.

ATTACHMENT D

FORMER COAL STREET GENERATING STATION

3. Hazardous Substance/Waste Inventory

Material Name	CAS#	Typical annual usage (gallons / lbs)	Storage Method / Size / Conc.	Type of Investigation / Year	Location	Previous Boring Location	AOC #
No. 4 fuel oil	--	*	UST#1 / 15,000 gallons	UST Removal (Oct. 1986)	North Side of the former vehicle maintenance building in Block 130.	---	1
TPH	--	*	120ppm - 270ppm	post excavation soil samples (Oct. 1986)	North Side of the former vehicle maintenance building in Block 130.	L-158-2; L-158-3	1
PCB	1336-36-3	*	4.19ppm - 195.4ppm	post excavation soil samples (Oct. 1986)	North Side of the former vehicle maintenance building in Block 130.	L-158-2; L-158-3	1
TPH	--	*	<10ppm - 11,000ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of former No. 4 Fuel Oil Tank excavation.	B19;B20 B21	1
PCB	1336-36-3	*	<0.16ppm - <0.66ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of former No. 4 Fuel Oil Tank excavation.	B19;B20; B21	1
Diesel Fuel	--	*	UST#2 / 1,000 gallons	UST Removal (Oct. 1986)	South of the former vehicle maintenance building on Block 133.	---	2
TPH	--	*	680ppm - 365ppm	post excavation soil samples (1986)	South of the former vehicle maintenance building on Block 133.	L-158-4; L-158-5	2
PCB	1336-36-3	*	4.8ppm - 4.5ppm	post excavation soil samples (1986)	South of the former vehicle maintenance building on Block 133.	L-158-4; L-158-5	2
TPH	--	*	<10ppm - 4,840ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of former Diesel Tank excavation.	B16;B17; B18	2
PCB	1336-36-3	*	<0.33ppm - <1.65ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of former Diesel Tank excavation.	B16;B17; B18	2
Gasoline	--	*	UST#3 / 5,000 gallons	UST Removal (Oct. 1986)	Northwest side of the City Dock Substation on Block 134.	---	3
TPH	--	*	2,250ppm - 1,125ppm	post excavation soil samples (1986)	Northwest side of the City Dock Substation on Block 134.	L-158-7; L-158-8	3

Material Name	CAS#	Typical annual usage (gallons / lbs)	Storage Method / Size / Conc.	Type of Investigation / Year	Location	Previous Boring Location	AOC #
PCB	1336-36-3	*	2.55ppm - 0.737ppm	post excavation soil samples (1986)	Northwest side of the City Dock Substation on Block 134.	L-158-7; L-158-8	3
TPH	--	*	<10ppm - 825ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of former Gasoline Tank excavation.	B11;B12; B13	3
PCB	1336-36-3	*	<0.33ppm - <1.65ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of former Gasoline Tank excavation.	B11;B12; B13	3
TPH	--	*	<10ppm - 4,180ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the concrete slabs.	B1;B2;B4; B5;B6	6
PCB	1336-36-3	*	<0.165ppm - 5.745ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the concrete slabs.	B1;B2;B4; B5;B6	6
TPH	--	*	BMDL - 580ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the concrete slabs.	B7;B8; B9;B10	--
PCB	1336-36-3	*	BMDL	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the concrete slabs.	B7;B8; B9;B10	--
TPH	--	*	<10ppm - 15,000ppm	Subsurface Soil Investigation (Aug-Sept 1987)	North end of the property.	B22 Through B30;	5
PCB	1336-36-3	*	<0.165ppm - 11.7ppm	Subsurface Soil Investigation (Aug-Sept 1987)	North end of the property.	B22 Through B30	5
Antimony	7440-36-0	*	BMDL - 5.5ppm	Subsurface Soil Investigation (Aug-Sept 1987)	In the area of former paint shop.	B14;B15	4
Beryllium	7440-41-7	*	0.2ppm - 0.7ppm	Subsurface Soil Investigation (Aug-Sept 1987)	In the area of former paint shop.	B14;B15	4
Cadmium	7440-43-9	*	3.0ppm - 8.2ppm	Subsurface Soil Investigation (Aug-Sept 1987)	In the area of former paint shop.	B14;B15	4
Chromium	7440-47-3	*	2.2ppm - 15ppm	Subsurface Soil Investigation (Aug-Sept 1987)	In the area of former paint shop.	B14;B15	4
Lead	7439-92-1	*	13ppm – 707ppm	Subsurface Soil Investigation (Aug-Sept 1987)	In the area of former paint shop.	B14;B15	4
Nickel	7440-02-0	*	4.5ppm - 14ppm	Subsurface Soil Investigation (Aug-Sept 1987)	In the area of former paint shop.	B14;B15	4

Material Name	CAS#	Typical annual usage (gallons / lbs)	Storage Method / Size / Conc.	Type of Investigation / Year	Location	Previous Boring Location	AOC #
Zinc	7440-66-6	*	35ppm - 200ppm	Subsurface Soil Investigation (Aug-Sept 1987)	In the area of former paint shop.	B14;B15	4
PAHs	--	*	Very low levels	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former paint shop.	B14	4
Heptachlor (Pesticide)	76-44-8	*	Very low levels	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former paint shop.	B14	4
Beryllium	7440-41-7	*	3.7ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
Cadmium	7440-43-9	*	5.9ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
Chromium	7440-47-3	*	60ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
Copper	7440-50-8	*	311ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
Lead	7439-92-1	*	428ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
Nickel	7440-02-0	*	131ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
Zinc	7440-66-6	*	1,060ppm	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
PAHs	--	*	RDCSCC exceedance	Subsurface Soil Investigation (Aug-Sept 1987)	Vicinity of the former No.4 fuel oil tank excavation.	B20	1
Beryllium	7440-41-7	*	11ppm	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Cadmium	7440-43-9	*	11ppm	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Chromium	7440-47-3	*	128ppm	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Copper	7440-50-8	*	1,000ppm	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5

Material Name	CAS# -	Typical annual usage (gallons / lbs)	Storage Method / Size / Conc.	Type of Investigation / Year	Location	Previous Boring Location	AOC #
Lead	7439-92-1	*	964ppm	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Nickel	7440-02-0	*	449ppm	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Zinc	7440-66-6	*	3,120ppm	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Benzo(a) - anthracene	56-55-3	*	28ppm (RDCSCC exceedance)	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Chrysene	218-01-9	*	29ppm (RDCSCC exceedance	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Benzo(k) - fluoranthene	--	*	71ppm (RDCSCC exceedance	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Benzo(a) - pyrene	--	*	28ppm (RDCSCC exceedance	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Indeno(1,2,3 - cd) anthracene	--	*	13ppm (RDCSCC exceedance	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Other PAHs	--	*	RDCSCC exceedance	Subsurface Soil Investigation (Aug-Sept 1987)	At the north end of the Site.	B30	5
Benzo(a) - pyrene	--	*	0.68ppm (RDCSCC exceedance)	Waterfront Development Soil Borings (Feb 1995)	Boring H-4 (0-8 ft).	H-4	--
Benzo(b)/(k) fluoranthene	--	*	2.2ppm (RDCSCC exceedance)	Waterfront Development Soil Borings (Feb 1995)	Boring H-4 (0-8 ft).	H-4	--

< - indicates the result was below the method detection limit (BMDL).
* - historical information unavailable from PSE&G files.
AOC = Area of Concern
IGWSCC = Impact to Ground Water Soil Cleanup Criteria
ppm = parts per million
PAH = Poly Aromatic Hydrocarbon
PCB = Polychlorinated Biphenyl
RDCSCC = Residential Direct Contact Soil Cleanup Criteria
TPH = Total Petroleum Hydrocarbon
UST = Underground Storage Tanks

ATTACHMENT E

FORMER COAL STREET GENERATING STATION

5,8. Areas of Environmental Concern

Based on the analytical data discussed in earlier attachments to this PA Report, six areas of concern have been identified. See Drawing 5 for the Areas of Concern (AOC).

AOC#1 - Former No. 4 Fuel Oil Tank Excavation

In accordance with July 1997 Technical Requirements for Site Remediation N.J.A.C. 7:26E, PAH analysis is required on 25 percent of samples where TPH exceeds 100 ppm (minimum of one sample). Four (4) of six (6) samples collected in 1987 exceeded 100 ppm TPH, thus at least one sample should have been analyzed for PAH. PAHs were not analyzed as part of either the post-excavation soil samples or the delineation sampling conducted in 1987. If individual PAHs are detected at levels exceeding their RDCSCC, delineation would be warranted.

The soil adjacent to the former UST excavations (AOC#1) was not sampled for target contaminants as currently required in the N.J.A.C. 7:26E.

AOC#2 - Former Diesel Fuel Tank Excavation

In accordance with N.J.A.C. 7:26E, volatile organic (VO+10) analysis is required on 25 percent of samples where TPH exceeds 1,000 ppm (minimum of one sample). Four of six (6) samples collected in 1987 exceeded 1,000 ppm TPH, thus at least one sample should have been analyzed for VO+10. If individual volatile organic compounds are detected at levels exceeding their RDCSCC, delineation would be warranted.

The soil adjacent to the former UST excavations (AOC#2) was not sampled for target contaminants as currently required in the N.J.A.C. 7:26E.

AOC#3 - Former Gasoline Tank Excavation

In accordance with N.J.A.C. 7:26E, VO+10 and lead analyses are required on soil samples collected from gasoline tank excavations. Volatile organics and lead were not analyzed during the post-excavation sampling or the 1987 delineation sampling. Thus VO+10 and lead analyses should have been conducted adjacent to the former tank excavation to determine impacts. If individual volatile organic compounds are detected at levels exceeding their RDCSCC, delineation would be warranted.

The soil adjacent to the former UST excavations (AOC#3) was not sampled for target contaminants as currently required in the N.J.A.C. 7:26E.

AOC#4 - Former Paint Shop

Lead was detected in soils adjacent to the former paint shop at levels exceeding its respective RDCSCC, thus delineation soil sampling is warranted. PCBs were not detected in any of the

four samples analyzed. However, the detection limit in one soil sample (i.e., B15-1) exceeded the current RDCSCC. Thus, PCBs and lead have not been delineated in AOC#4.

AOC#5 - North End of Site (Block 130)

PCBs were detected at levels exceeding the current RDCSCC in four of eighteen soil samples collected at the north end of the Site by Malcolm Pirnie and two of two background samples. The instrument detection limits exceeded the current RDCSCC for six other samples. Two background samples had PCB levels exceeding the IGWSCC of 50 ppm. PCB contamination is not fully delineated; additional sampling and analysis is warranted.

The PAHs benzo(a)anthracene, chrysene, benzo(k)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene were detected in a sample collected from boring B30. Only one sample was analyzed for PAHs. PAHs are commonly found in cinder fill which was identified by Malcolm Pirnie in four borings in this AOC. PAH contamination is not fully delineated; additional sampling is warranted.

The metals beryllium, copper, lead, nickel and zinc were detected at levels exceeding their respective RDCSCC in two of two samples collected. Metals contamination is not fully delineated; additional sampling is warranted.

Thus, PCBs, PAHs and metals have not been delineated in AOC#5.

AOC#6 - Concrete Storage Pad

PCBs were detected in three of ten samples collected by Malcolm Pirnie and two of two background samples at levels exceeding the current RDCSCC. The instrument detection limit for one of the samples exceeded the current RDCSCC for PCBs. Both of the background soil samples had PCB levels exceeding the IGWSCC of 50 ppm. PCB contamination is not fully delineated; additional sampling and analysis is warranted.

Thus, PCBs have not been delineated in AOC#6.

SUMMARY OF PREVIOUS INVESTIGATIONS
PSE&G FORMER COAL STREET GAS WORKS
NEWARK, NEW JERSEY

PSE&G

Sample Location	Sample Date	Sample Depth	Matrix	Analytical Parameters
L-158-2-Tank #1A	10/08/1986	*	Soil	PHC, PCB
L-158-3-Tank #1B	10/08/1986	*	Soil	PHC, PCB
L-158-4-Tank #2A	10/08/1986	*	Soil	PHC, PCB
L-158-5-Tank #2B	10/08/1986	*	Soil	PHC, PCB
L-158-7-Tank #3A	10/08/1986	*	Soil	PHC, PCB
L-158-8-Tank #3B	10/08/1986	*	Soil	PHC, PCB
L-158-9-Soil #1	10/08/1986	*	Soil	PHC, PCB
L-158-10-Soil #2	10/08/1986	*	Soil	PHC, PCB
L-158-11-Soil #3	10/08/1986	*	Soil	PHC, PCB
L-158-12-Soil #4	10/08/1986	*	Soil	PHC, PCB

Malcolm Pirnie

Sample Location	Sample Date	Sample Depth	Matrix	Analytical Parameters
B1-1	08/31/1987	2'-4'	Soil	PHC, PCB
B1-2	08/31/1987	4'-6'	Soil	PHC, PCB
B2-1	08/31/1987	2'-4'	Soil	PHC, PCB
B2-2	08/31/1987	4'-6'	Soil	PHC, PCB
B4-1	08/31/1987	2'-4'	Soil	PHC, PCB
B4-2	08/31/1987	4'-6'	Soil	PHC, PCB
B5-1	08/31/1987	2'-4'	Soil	PHC, PCB
B5-2	08/31/1987	4'-6'	Soil	PHC, PCB
B6-1	08/31/1987	2'-4'	Soil	PHC, PCB
B6-2	08/31/1987	4'-6'	Soil	PHC, PCB
B7-1	08/31/1987	2'-4'	Soil	PHC, PCB
B7-2	08/31/1987	4'-6'	Soil	PHC, PCB
B8-1	08/31/1987	2'-4'	Soil	PHC, PCB
B8-2	08/31/1987	4'-6'	Soil	PHC, PCB
B9-1	08/31/1987	2'-4'	Soil	PHC, PCB
B9-2	08/31/1987	4'-6'	Soil	PHC, PCB
B10-1	08/31/1987	2'-4'	Soil	PHC, PCB
B10-2	08/31/1987	4'-6'	Soil	PHC, PCB
B11-1	08/31/1987	2'-4'	Soil	PHC, PCB
B11-2	08/31/1987	4'-6'	Soil	PHC, PCB
B12-1	08/31/1987	2'-4'	Soil	PHC, PCB
B12-2	08/31/1987	4'-6'	Soil	PHC, PCB
B13-1	08/31/1987	2'-4'	Soil	PHC, PCB
B13-2	08/31/1987	4'-6'	Soil	PHC, PCB
B14-1	09/01/1987	2'-4'	Soil	PHC,PP+40
B14-2	09/01/1987	4'-6'	Soil	PHC, PCB, Metals
B15-1	09/01/1987	2'-4'	Soil	PHC, PCB, Metals
B15-2	09/01/1987	4'-6'	Soil	PHC, PCB, Metals
B16-1	09/01/1987	2'-4'	Soil	PHC, PCB
B16-2	09/01/1987	4'-6'	Soil	PHC, PCB
B17-1	09/01/1987	2'-4'	Soil	PHC, PCB

SUMMARY OF PREVIOUS INVESTIGATIONS
PSE&G FORMER COAL STREET GAS WORKS
NEWARK, NEW JERSEY

Sample Location	Sample Date	Sample Depth	Matrix	Analytical Parameters
B17-2	09/01/1987	4'-6'	Soil	PHC, PCB
B18-1	09/01/1987	2'-4'	Soil	PHC, PCB
B18-2	09/01/1987	4'-6'	Soil	PHC, PCB
B19-1	09/01/1987	2'-4'	Soil	PHC, PCB
B19-2	09/01/1987	4'-6'	Soil	PHC, PCB
B20-1	09/01/1987	2'-4'	Soil	PHC, PCB
B20-2	09/01/1987	4'-6'	Soil	PHC, PP+40
B21-1	09/01/1987	2'-4'	Soil	PHC, PCB
B21-3	09/01/1987	8'-10'	Soil	PHC, PCB
B22-1	09/01/1987	2'-4'	Soil	PHC, PCB
B22-2	09/01/1987	4'-6'	Soil	PHC, PCB
B23-1	09/01/1987	0'-1'	Soil	PHC, PCB
B23-2	09/01/1987	*	Soil	PHC, PCB
B24-1	09/01/1987	0'-2'	Soil	PHC, PCB
B24-2	09/01/1987	2-1/2' - 3-1/2'	Soil	PHC, PCB
B25-1	09/01/1987	0'-1-1/2'	Soil	PHC, PCB
B25-2	09/01/1987	1-1/2'-3'	Soil	PHC, PCB
B26-1	09/01/1987	1'-2'	Soil	PHC, PCB
B27-1	09/01/1987	0'-1-1/2'	Soil	PHC, PCB
B27-2	09/01/1987	1-1/2'-3'	Soil	PHC, PCB
B28-1	09/01/1987	0'-1'	Soil	PHC, PCB
B29-1	09/01/1987	0'-1'	Soil	PHC, PCB
B29-2	09/01/1987	1'-2'	Soil	PHC, PCB
B30-1	09/01/1987	0'-1'	Soil	PHC, PP+40
B30-2	09/01/1987	1'-2'	Soil	PHC, PCB

Notes:

PHC = Petroleum Hydrocarbons
PCB = Polychlorinated Biphenyls
PP+40 = Priority Pollutants plus a library search
* = Sample depths unknown

Cook St

EAS LABORATORIES INC.
721 WEST KENNEDY BOULEVARD
LAKEWOOD, N.J. 08701
201-370-1360

Waste Conversion, Inc.
2869 Sandstone Drive
Hatfield, Pa. 19440

Attention: Mr. Greg Brendlinger

Analysis No. L-158

Samples Received October 8, 1986

Analysis Completed October 30, 1986

Identification: PSE&G, Newark, N.J.

Sample No.	PETROLEUM HYDROCARBONS Result: mg/kg	Detection Limit mg/kg
L-158-2 - Tank #1A	220	50
L-158-3 - Tank #1B	270	50
L-158-4 - Tank #2A	680	50
L-158-5 - Tank #2B	365	50
L-158-7 - Tank #3A	2250	50
L-158-8 - Tank #3B	1125	50
L-158-9 - Soil #1	4350	50
L-158-10- Soil #2	3900	50
L-158-11- Soil #3	175	50
L-158-12- Soil #4	315	50

Robert J. White
Laboratory Director

LAKEWOOD, N.J. 08701
201-370-1360

Client: Waste-Conversion

Location: PSE&G, Newark, N.J.

PCB ANALYSIS

EMS I.D. #	W.C. I.D.	PCB	DETECTED (ug/kg)	METHOD DETECT LIMIT (ug/kg)
L-158.2	Tank 1A Soil	1254	4,190	1,600
L-158.3	Tank 1B Soil	1260	195,400	16,000
L-158.4	Tank 2A Soil	1254	4,800	1,600
L-158.5	Tank 2B Soil	1254	4,500	1,600
L-158.7	Tank 3A Soil	1260	2,550	1,600
L-158.8	Tank 3B Soil	1254	737	160
L-158-9	Soil #1	1260	51,000	16,000
L-158.10	Soil #2	1260	793,800	16,000
L-158.11	Soil #3	1254	8,330	1,600
L-158.12	Soil #4	1260	77,000	16,000

TABLE 1

PUBLIC SERVICE ELECTRIC & GAS
COAL STREET SITE
FIELD ACTIVITIES
SAMPLING SUMMARY

Sample I.D.	Date	Analyses	HNU Reading (ppm)	Description/Location
B1-1	8/31/87	PHC, PCB	BKGD	Sandy soil from boring B1, 2'-4' deep; 19' east of the large, concrete storage pad.
B1-2	8/31/87	PHC, PCB	BKGD	Brick and sand from boring B1, 4'-6' deep.
B2-1	8/31/87	PHC, PCB	BKGD	Sand and silt for boring B2, 2'-4' deep; 6' east of the large concrete storage pad.
B2-2	8/31/87	PHC, PCB	BKGD	Sand and silt with brick from boring B2, 4'-6' deep.
B4-1	8/31/87	PHC, PCB	BKGD	Sand and silt with brick from boring B4, 2'-4' deep; 16' south of the large, concrete storage pad.
B4-2	8/31/87	PHC, PCB	BKGD	Sand and silt with brick from boring B4, 4'-6' deep.
B5-1	8/31/87	PHC, PCB	BKGD	Sandy soil from boring B5, 2'-4' deep; 10' west of the large concrete storage pad.
B5-2	8/31/87	PHC, PCB	BKGD	Stained, sandy soil from boring B5, 4'-6' deep.
B6-1	8/31/87	PHC, PCB	BKGD	Sandy soil from boring B6, 2'-4' deep; 18 feet north of the large, concrete storage pad.
B6-2	8/31/87	PHC, PCB	BKGD	Silty soil from boring B6, 4'-6' deep.
B7-1	8/31/87	PHC, PCB	4	Stained sand and silt from boring B7, 2'-4' deep, 10' east of small concrete storage pad.
B7-2	8/31/87	PHC, PCB	BKGD	Silt and sand from boring B7, 4'-6' deep.
B8-1	8/31/87	PHC, PCB	5	Stained silt and sand from boring B8, 2'-4' deep; 10' south of the small, concrete storage pad.

MALCOLM PIRNIE

1175-01-1102

TABLE 1

PUBLIC SERVICE ELECTRIC & GAS
COAL STREET SITE
FIELD ACTIVITIES
SAMPLING SUMMARY (Continued)

Sample I.D.	Date	Analyses	HNU Reading (ppm)	Description/Location
B8-2	8/31/87	PHC, PCB	6	Oily sand and silt from borehole B8, 4'-6' deep.
B9-1	8/31/87	PHC, PCB	11	Oily sand and silt with cinder from borehole B-9, 2'-4' deep, 11' west of the small, concrete storage pad.
B9-2	8/31/87	PHC, PCB	3	Oil sand and silt from borehole B9, 4'-6' deep.
B10-1	8/31/87	PHC, PCB	11	Sand and silt from borehole B10, 2'-4' deep; 10' north of the small, concrete storage pad.
B10-2	8/31/87	PHC, PCB	4.4	Stained sand and silt from borehole B10, 4'-6' deep.
B11-1	9/01-87	PHC, PCB	5	Silt and sand from borehole B11, 4'-6' deep; west of the underground storage tank excavation near the City Dock building.
B11-2	9/01/87	PHC, PCB	11	Sand and silt from borehole B11, 4'-6' deep.
B12-1	9/01-87	PHC, PCB	20	Stained sand and gravel from borehole B12, 2'-4' deep; north of the underground storage tank excavation, near the City Dock building.
B12-2	9/01-87	PHC, PCB	15	Sand and gravel from borehole B12, 4'-6' deep.
B13-1	9/01-87	PHC, PCB	4	Stained sand and gravel from borehole B13, 2'-4' deep; west of the underground storage tank excavation near the City Dock building.
B13-2	9/01/87	PHC, PCB	BKGD	Sand and silt from borehole B13, 4'-6' deep.

MALCOLM PIRNIE

1175-01-1102

TABLE 1

PUBLIC SERVICE ELECTRIC & GAS
COAL STREET SITE
FIELD ACTIVITIES
SAMPLING SUMMARY (Continued)

Sample I.D.	Date	Analyses	HNU Reading (ppm)	Description/Location
B14-1	9/01/87	PHC, PP+40	150	Silt and sand from borehole B14, 2'-4' deep, east of the former paint shop.
B14-2	9/01-87	PHC, PCB Metals	50	Sand and gravel from borehole B14, 4'-6' deep.
B15-1	9/01/87	PHC, PCB Metals	11	Stained sand from borehole B15, 2'-4' deep; north of the former paint shop.
B15-2	9/01/87	PHC, PCB Metals	BKGD	Sandy soil from borehole B15, 4'-6' deep.
B16-1	9/01/87	PHC, PCB	7	Sand and silt from borehole B16, 2'-4' deep, east of the underground storage tank excavation adjacent to the south side of the Coal Street buiding.
B16-2	9/01/87	PHC, PCB	7	Sand and miscellaneous fill from borehole B16, 4'-6' deep.
B17-1	9/01/87	PHC, PCB	30	Sand and silt from borehole B17, 2'-4' deep; south of the underground storage excavation adjacent to the south side of the Coal Street building.
B17-2	9/01/87	PHC, PCB	100	Stained sand from borehole B17, 4'-6' deep.
B18-1	9/01/87	PHC, PCB	30	Sand and slag from borehole B18, 2'-4' deep, west of the underground storage tank excavation adjacent to the south side of the Coal Street building.
B18-2	9/01/87	PHC, PCB	300	Sand and miscellaneous fill from borehole B18, 4'-6' deep.
B19-1	9/01/87	PCH, PCB	4	Sandy silt from borehole B19, 2'-4' deep, west of the underground storage tank execavation, adjacent to the north side of the Coal Street building.

MALCOLM PIRNIE

1175-01-1102

TABLE 1

PUBLIC SERVICE ELECTRIC & GAS
COAL STREET SITE
FIELD ACTIVITIES
SAMPLING SUMMARY (Continued)

Sample I.D.	Date	Analyses	HNU Reading (ppm)	Description/Location
B19-2	9/01/87	PHC, PCB	10	Sand and gravel from borehole B19, 4'-6' deep.
B20-1	9/01/87	PHC, PCB	1	Sand and gravel from borehole B20, 2'-4' deep; north of the underground storage tank excavation adjacent to the north side of the Coal Street building.
B20-2	9/01/87	PHC, PP+40	1	Sand and silt from borehole B20, 4'-6' deep.
B21-1	9/01/87	PHC, PCB	BKGD	Stained sand and gravel from borehole B21, 2'-4' deep; east of the underground storage tank excavation adjacent to the north side of the Coal Street building.
B21-3	9/01/87	PHC, PCB	BKGD	Stained sand and gravel from borehole B21, 8'-10' deep.
B22-1	9/01/87	PHC, PCB	BKGD	Sandy soil from borehole B22, 2'-4' deep; 88' north of the Coal Street building.
B22-2	9/01/87	PHC, PCB	BKGD	Sand gravel from borehole B22, 4'-6' deep.
B23-1	9/01/87	PHC, PCB	BKGD	Sandy soil from borehole B23, 0'-1' deep; 127' north of the Coal Street building.
B23-2	9/01/87	PHC, PCB	BKGD	Sand with brick from borehole B23, 2'- /2' deep.
B24-1	9/01/87	PHC, PCB	10	Slag, sand, and cinder from borehole B24, 0'-2' deep; 57' south of the northern property line.
B24-2	9/01/87	PHC, PCB.	5	Sand and silt from borehole B24, 2-1/2'-3-1/2' deep.
B25-1	9/1/87	PHC, PCB	5	Silt and sand from borehole B25, 0-1-1/2' deep; 92' south of the northern property line.

MALCOLM PIRNIE

1175-01-1102

TABLE 1

PUBLIC SERVICE ELECTRIC & GAS
COAL STREET SITE
FIELD ACTIVITIES
SAMPLING SUMMARY (Continued)

Sample I.D.	Date	Analyses	HNU Reading (ppm)	Description/Location
B25-2	9/01/87	PHC, PCB	1	Sandy soil from borehole B25, 1-1/2'-3' deep.
B26-1	9/01/87	PHC, PCB	1	Sand with brick from borehole B26, 1'-2' deep; 96' south of the northern property line.
B26-2	9/01/87	PHC, PCB	5	Sand and silt from borehole B26, 2'-3' deep.
B27-1	9/01/87	PHC, PCB	2	Cinder and silt from borehole B27, 0'-1-1/2' deep; 73' south of the northern property line.
B27-2	9/01/87	PHC, PCB	1.5	Cinder and silt from borehole B27, 1-1/2'-3' deep.
B28-1	9/01/87	PHC, PCB	12	Sand and cinder from borehole B28, 0'-1' deep; 143' north of the Coal Street building.
B29-1	9/01/87	PHC, PCB	BKGD	Sand and cinder from borehole B29, 0'-1' deep; 52' south of the northern property line.
B29-2	9/01/87	PHC, PCB	14	Sand and cinder from borehole B30, 1'-2' deep.
B30-1	9/01/87	PHC, PP+40	25	Cinder and silt from borehole B30, 0'-1' deep; 134' north of the Coal Street building.
B30-2	9/01/87	PHC, PCB	4	Stained silt with brick from borehole B30, 1'-2' deep.
Rinsate Blank 1	8/31/87	PHC, PCB	NA	Laboratory, deionized, distilled water, poured through decontaminated split spoon.
Rinsate Blank 2	9/01/87	PHC	NA	Laboratory deionized, distilled water, poured through decontaminated split spoon.

MALCOLM PIRNIE

1175-01-1102

TABLE 1

PUBLIC SERVICE ELECTRIC & GAS
COAL STREET SITE
FIELD ACTIVITIES
SAMPLING SUMMARY (Continued)

Sample I.D.	Date	Analyses	HNU Reading (ppm)	Description/Location
Field Blank	9/01/87	pp+40	NA	Laboratory deionized, distilled water, poured through decontaminated split spoon.
Trip Blank	NA	VOA	NA	Laboratory deionized, distilled water.

Notes:
PHC = Petroleum Hydrocarbons
PCB = Polychlorinated Biphenyls
BKGD = Background
PP+40 = Priority pollutants plus an EPA/NIH/NBS library search of nonpriority pollutant organics

MALCOLM PIRNIE

1175-01-1102

TABLE 2

PSE&G
COAL STREET SITE
PETROLEUM HYDROCARBON AND
PCB SAMPLING SUMMARY

Parameter	Sample I.D. B1-1	B1-2	B2-1	B2-2	B4-1	B4-2
Petroleum Hydrocarbons (mg/kg)	606	<10	4180	<10	<10	<10
Arochlor 1016 (ug/kg)	<1650	<330	<330	<330	<165	<330
Arochlor 1221 (ug/kg)	<1650	<330	<330	<330	<165	<330
Arochlor 1232 (ug/kg)	<1650	<330	<330	<330	<165	<330
Arochlor 1242 (ug/kg)	<1650	<330	<330	<330	<165	<330
Arochlor 1248 (ug/kg)	<1650	<330	<330	<330	<165	<330
Arochlor 1254 (ug/kg)	<1650	<330	<330	<330	<165	<330
Arochlor 1260 (ug/kg)	320	480	680	<330	<165	<330

Parameter	Sample I.D. B5-1	B5-2	B6-1	B6-2	B7-1	B7-2
Petroleum Hydrocarbons (mg/kg)	470	<10	<10	<10	530	<10
Arochlor 1016 (ug/kg)	<330	<330	<330	<33	<330	<330
Arochlor 1221 (ug/kg)	<330	<330	<330	<33	<330	<330
Arochlor 1232 (ug/kg)	<330	<330	<330	<33	<330	<330
Arochlor 1242 (ug/kg)	<330	<330	<330	<33	<330	<330
Arochlor 1248 (ug/kg)	4785	<330	4810	<33	<330	<330
Arochlor 1254 (ug/kg)	<330	<330	<330	<33	<330	<330
Arochlor 1260 (ug/kg)	960	<330	<330	<33	<330	<330

Parameter	Sample I.D. B8-1	B8-2	B9-1	B9-2	B10-1	B10-2
Petroleum Hydrocarbons (mg/kg)	<10	580	380	<10	<10	<10
Arochlor 1016 (ug/kg)	<330	<330	<330	<330	<330	<165
Arochlor 1221 (ug/kg)	<330	<330	<330	<330	<330	<165
Arochlor 1232 (ug/kg)	<330	<330	<330	<330	<330	<165
Arochlor 1242 (ug/kg)	<330	<330	<330	<330	<330	<165
Arochlor 1248 (ug/kg)	<330	<330	<330	<330	<330	<165
Arochlor 1254 (ug/kg)	<330	<330	<330	<330	<330	<165
Arochlor 1260 (ug/kg)	<330	<330	<330	<330	<330	<165

MALCOLM PIRNIE

TABLE 2

PSE&G
COAL STREET SITE
PETROLEUM HYDROCARBON AND
PCB SAMPLING SUMMARY (Continued)

Parameter	Sample I.D. B11-1	B11-2	B12-1	B12-2	B13-1
Petroleum Hydrocarbons (mg/kg)	825	<10	<10	<10	239
Arochlor 1016 (ug/kg)	<330	<330	<330	<1650	<330
Arochlor 1221 (ug/kg)	<330	<330	<330	<1650	<330
Arochlor 1232 (ug/kg)	<330	<330	<330	<1650	<330
Arochlor 1242 (ug/kg)	<330	<330	<330	<1650	<330
Arochlor 1248 (ug/kg)	<330	<330	<330	<1650	<330
Arochlor 1254 (ug/kg)	<330	<330	<330	<1650	<330
Arochlor 1260 (ug/kg)	<330	<330	<330	<1650	<330

Parameter	Sample I.D. B13-2	B14-1	B14-2	B15-1	B15-2
Petroleum Hydrocarbons (mg/kg)	302	<10	<10	<10	<10
Arochlor 1016	<330	<230	<33	<660	<330
Arochlor 1221	<330	<230	<33	<660	<330
Arochlor 1232	<330	<230	<33	<660	<330
Arochlor 1242	<330	<230	<33	<660	<330
Arochlor 1248	<330	<230	<33	<660	<330
Arochlor 1254	<330	<470	<33	<660	<330
Arochlor 1260	<330	<470	<33	<660	<330

Parameter	Sample I.D. B16-1	B16-2	B17-1	B17-2	B18-1
Petroleum Hydrocarbons (mg/kg)	3930	<10	1260	4840	<10
Arochlor 1016	<330	<660	<330	<1650	<1650
Arochlor 1221	<330	<660	<330	<1650	<1650
Arochlor 1232	<330	<660	<330	<1650	<1650
Arochlor 1242	<330	<660	<330	<1650	<1650
Arochlor 1248	<330	<660	<330	<1650	<1650
Arochlor 1254	<330	<660	<330	<1650	<1650
Arochlor 1260	<330	<660	<330	<1650	<1650

Notes:

Blank Space = Compound was analyzed but not detected
NA = Not Analyzed

MALCOLM PIRNIE

TABLE 2

PSE&G
COAL STREET SITE
PETROLEUM HYDROCARBON AND
PCB SAMPLING SUMMARY (Continued)

Parameter	Sample I.D. B18-2	B19-1	B19-2	B20-1	B20-2
Petroleum Hydrocarbons (mg/kg)	1140	<10	<10	4470	11,000
Arochlor 1016 (ug/kg)	<330	<330	<165	<330	
Arochlor 1221 (ug/kg)	<330	<330	<165	<330	
Arochlor 1232 (ug/kg)	<330	<330	<165	<330	
Arochlor 1242 (ug/kg)	<330	<330	<165	<330	
Arochlor 1248 (ug/kg)	<330	<330	<165	<330	
Arochlor 1254 (ug/kg)	<330	<330	<165	<330	
Arochlor 1260 (ug/kg)	<330	<330	<165	<330	

Parameter	Sample I.D. B21-1	B21-2	B22-1	B22-2	B23-1
Petroleum Hydrocarbons (mg/kg)	1020	3530	<10	<10	<10
Arochlor 1016 (ug/kg)	<660	<660	<330	<1650	<330
Arochlor 1221 (ug/kg)	<660	<660	<330	<1650	<330
Arochlor 1232 (ug/kg)	<660	<660	<330	<1650	<330
Arochlor 1242 (ug/kg)	<660	<660	<330	<1650	<330
Arochlor 1248 (ug/kg)	<660	<660	<330	<1650	<330
Arochlor 1254 (ug/kg)	<660	<660	<330	<1650	<330
Arochlor 1260 (ug/kg)	<660	<660	<330	<1650	1230

Parameter	Sample I.D. B23-2	B24-1	B24-2	B25-1	B25-2
Petroleum Hydrocarbons (mg/kg)	474	154	682	719	424
Arochlor 1016 (ug/kg)	<330	<1650	<165	<330	<165
Arochlor 1221 (ug/kg)	<330	<1650	<165	<330	<165
Arochlor 1232 (ug/kg)	<330	<1650	<165	<330	<165
Arochlor 1242 (ug/kg)	<330	<1650	<165	<330	<165
Arochlor 1248 (ug/kg)	<330	<1650	<165	<330	<165
Arochlor 1254 (ug/kg)	<330	<1650	<165	<330	<165
Arochlor 1260 (ug/kg)	<330	<1650	<165	<330	<165

Notes:
Blank Space = Compound was analyzed but not detected
NA = Not Analyzed

MALCOLM PIRNIE

TABLE 2

PSE&G
COAL STREET SITE
PETROLEUM HYDROCARBON AND
PCB SAMPLING SUMMARY (Continued)

Parameter	Sample I.D. B26-1	B26-2	B27-1	B27-2	B28-1
Petroleum Hydrocarbons (mg/kg)	<10	251	5270	15,000	4380
Arochlor 1016 (ug/kg)	<660	<330	<660	<660	<330
Arochlor 1221 (ug/kg)	<660	<330	<660	<660	<330
Arochlor 1232 (ug/kg)	<660	<330	<660	<660	<330
Arochlor 1242 (ug/kg)	<660	<330	<660	<660	<330
Arochlor 1248 (ug/kg)	<660	<330	<660	<660	<330
Arochlor 1254 (ug/kg)	<660	<330	<660	<660	<330
Arochlor 1260 (ug/kg)	5040	<330	11700	<660	<330

11.7 ppm

Parameter	Sample I.D. B28-2	B29-1	B29-2	B30-1	B30-2
Petroleum Hydrocarbons (mg/kg)	1190	2620	3860	12,700	8460
Arochlor 1016 (ug/kg)	<330	<165	<330	<1,900	<330
Arochlor 1221 (ug/kg)	<330	<165	<330	<1,900	<330
Arochlor 1232 (ug/kg)	<330	<165	<330	<1,900	<330
Arochlor 1242 (ug/kg)	<330	<165	<330	<1,900	<330
Arochlor 1248 (ug/kg)	5180	410	<330	<1,900	<330
Arochlor 1254 (ug/kg)	<330	<165	<330	<3,900	<330
Arochlor 1260 (ug/kg)	<330	<165	<330	<3,900	<330

Parameter	Field Blank	Rinsate Blank-1	Rinsate Blank-2	Trip Blank
Petroleum Hydrocarbons (mg/kg)	<1	<1	<1	<1
Arochlor 1016 (ug/kg)		NA	<1	NA
Arochlor 1221 (ug/kg)		NA	<1	NA
Arochlor 1232 (ug/kg)		NA	<1	NA
Arochlor 1242 (ug/kg)		NA	<1	NA
Arochlor 1248 (ug/kg)		NA	<1	NA
Arochlor 1254 (ug/kg)		NA	<1	NA
Arochlor 1260 (ug/kg)		NA	<1	NA

Notes:

Blank Space = Compound was analyzed but not detected
NA = Not Analyzed

MALCOLM PIRNIE

TABLE 4

ANALYTICAL DATA
NAME: PSE&G
SAMPLING DATE: 9/2/87
LABORATORY: UNITED STATES TESTING COMPANY, INC.

SEMIVOLATILE COMPOUNDS (Continued)

LOCATION	B14-1	B20-2	B30-1 *	FIELD BLK
MATRIX	SOIL	SOIL	SOIL	WATER
UNITS	ug/kg	ug/kg	ug/kg	ug/l
2,4-Dinitrophenol				
4-Nitrophenol				
4-Nitroaniline				
4,6-Dinitro-2-Methylphenol				
N-Nitrosodiphenylamine				
4-Bromophenyl Phenylether				
Hexachlorobenzene				
Pentachlorophenol				
Phenanthrene		2500	33000	
Anthracene			17000	
Di-n-butyl Phthalate			730J	4J
Fluoranthene	350J	3300	45000	
Pyrene		1500	43000	
Butyl Benzyl Phthalate				
3,3'-Dichlorobenzidine				
Benzo(a)anthracene			23000	
bis(2-ethylhexyl) Phthalate				10J
Chrysene			29000	
Di-n-octyl Phthalate			1900J	
Benzo(b)fluoranthene				
Benzo(k)fluoranthene			71000	
Benzo(a)pyrene			23000	
Indeno(1,2,3-cd)pyrene			13000	
Dibenz(a,h)anthracene				
Benzo(g,h,i)perylene			7300	

NOTES: J - Indicates an estimated value. The result is less than the specified detection limit.
* - Conc/Dil Factor: 10 X DIL

TABLE 4 (CONTINUED)

ANALYTICAL DATA
NAME: FSE4G
SAMPLING DATE: 9/2/87
LABORATORY: UNITED STATES TESTING COMPANY, INC.

SEMIVOLATILE COMPOUNDS

LOCATION	B14-1	B20-2	B30-1 +	FIELD BLK
MATRIX	SOIL	SOIL	SOIL	WATER
UNITS	ug/kg	ug/kg	ug/kg	ug/l
Phenol				
bis(2-Chloroethyl)ether				
2-Chlorophenol				
1,3-Dichlorobenzene				
1,4-Dichlorobenzene				
Benzyl Alcohol				
1,2-Dichlorobenzene		41J		
2-Methylphenol				
bis(2-Chloroisopropyl)ether				
4-Methylphenol				
N-Nitroso-Dipropylamine				
Hexachloroethane				
Nitrobenzene				
Isophorone				
2-Nitrophenol				
2,4-Dimethylphenol				
Benzoic Acid				
bis(2-Chloroethoxy)methane				
2,4-Dichlorophenol				
1,2,4-Trichlorobenzene				
Naphthalene		250J	19000	
4-Chloroaniline				
Hexachlorobutadiene				
4-Chloro-3-Methylphenol				
2-Methylnaphthalene		250J	4300	
Hexachlorocyclopentadiene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenol				
2-Chloronaphthalene				
2-Nitroaniline				
Dimethyl Phthalate				
Acenaphthylene		140J	780J	
3-Nitroaniline				
Acenaphthene		330J	14000	
Dibenzofuran		160J	14000	
2,4-Dinitrotoluene				
2,6-Dinitrotoluene				
Diethylphthalate	420J	370J	370J	
4-Chlorophenyl Phenylether				
Fluorene		230J	14000	

NOTES: J - Indicates an estimated value. The result is less than the specified detection limit.
+ - Conc/Dil Factor: 10 X DIL

TABLE 4 (CONTINUED)

ANALYTICAL DATA
NAME: PSE&G
SAMPLING DATE: 9/2/87
LABORATORY: UNITED STATES TESTING COMPANY, INC.

VOLATILE COMPOUNDS

LOCATION	B14-1	B20-2	B30-1	TRIP BLK	FIELD BLK
MATRIX	SOIL	SOIL	SOIL	WATER	WATER
UNITS	ug/kg	ug/kg	ug/kg	ug/l	ug/l
Chloroethane					
Bromoethane					
Vinyl Chloride					
Chloroethane					
Methylene Chloride	6J	4J		6	190
Acetone	23				13
Carbon Disulfide					
1,1-Dichloroethene					
1,1-Dichloroethane					
trans-1,2-Dichloroethene					
Chloroform					
1,2-Dichloroethane				4J	5
2-Butanone					
1,1,1-Trichloroethane					
Carbon Tetrachloride					
Vinyl Acetate					
Bromodichloromethane					
1,2-Dichloropropane					
trans-1,3-Dichloropropene					
Trichloroethene					
Dibromochloromethane					
1,1,2-Trichloroethane					
Benzene					
cis-1,3-Dichloropropene					
2-Chloroethyl Vinyl Ether					
Bromoform					
4-Methyl-2-pentanone					
2-Hexanone					
Tetrachloroethene					
1,1,2,2-Tetrachloroethane					
Toluene					
Chlorobenzene					
Ethyl Benzene					
Styrene					
Total Xylenes					

NOTES: J - Indicates an estimated value. The result is less than the specified detection limit.

TABLE 4 (CONTINUED)

ANALYTICAL DATA
NAME: PSE&G
SAMPLING DATE: 9/2/87
LABORATORY: UNITED STATES TESTING COMPANY, INC.

PESTICIDES/PCBs

LOCATION	B14-1	B20-2	B30-1	FIELD BLK
MATRIX	SOIL	SOIL	SOIL	WATER
UNITS	ug/kg	ug/kg	ug/kg	ug/l
CONC/DIL FACTOR	5 X DIL	10 X DIL	50 X DIL	1 X DIL
Aldrin				
alpha-BHC				
beta-BHC				
gamma-BHC				
delta-BHC				
Chlordane				
4,4'-DDT				
4,4'-DDE				
4,4'-DDD				
Dieldrin				
Endosulfan I				
Endosulfan II				
Endosulfan Sulfate				
Endrin				
Endrin Ketone				
Heptachlor	.075			
Heptachlor Epoxide				
Methoxychlor				
PCB-1016				
PCB-1221				
PCB-1232				
PCB-1242				
PCB-1248				
PCB-1254				
PCB-1260				
Toxaphene				

NOTES: J - Indicates an estimated value. The result is less than the specified detection limit.

ANALYTICAL DATA
NAME: PSE&G
SAMPLING DATE: 9/2/87
LABORATORY: UNITED STATES TESTING COMPANY, INC.

INORGANIC COMPOUNDS

LOCATION	B14-1	B20-2	B30-1	FIELD BLK
MATRIX	SOIL	SOIL	SOIL	WATER
UNITS	ug/kg	ug/kg	ug/kg	ug/l
Cyanide				
Phenol				
Antimony	5.8J			
Arsenic				
Beryllium	0.2J	3.7	11	
Cadmium	3.	5.9	11	
Chromium	2.2	60	129	
Copper	57	311	1060	
Lead	707	429	754	
Mercury				
Nickel	4.5	131	449	
Selenium				
Silver				
Thallium				
Zinc	35	1060	3120	10J

NOTES: J - Indicates an estimated value. The result is less than the specified detection limit.

ATTACHMENT F

FORMER COAL STREET GENERATING STATION

5D and 13. Fill History

The physical location of the Site lies within the former Passaic River (River) floodplain. Native soils include sands with varying amounts of silt and gravel overlying an organic clayey silt/silty clay layer into which the River typically incised drainage channels. Site development required raising grade (filling) to its current elevations and grades. The date(s) of fill emplacement are unknown but must precede 1894 since the Site had been previously developed for other uses (See Sanborn Maps in Attachment A). The source of the fill is unknown.

Maximum fill thickness is approximately eight feet. The fill material consists of gray to red-brown fine to coarse sands, with varying amounts of silt and gravel. Variable amounts of brick, concrete, cinders and wood are also present.

ATTACHMENT G

FORMER COAL STREET GENERATING STATION

6. Aerial Photo Interpretation

Interpretation of the available aerial photographs is presented in order from 1953 through 1995. Refer to Drawing 2 for the Block and Lot designations used in the interpretations below. Copies of the photographs are included herein.

1940 (Scale: 1"=100')
- Block 130, Lot 12: Vacant.
- Block 133, Lot 1: PSE&G's Auto Maintenance building encompasses the lot. The building extends north into Block 130, Lot 1.
- Block 134, Lot 10: A small structure is located in the northeast part of the lot corresponding to the location of a concrete slab on Drawing 2.

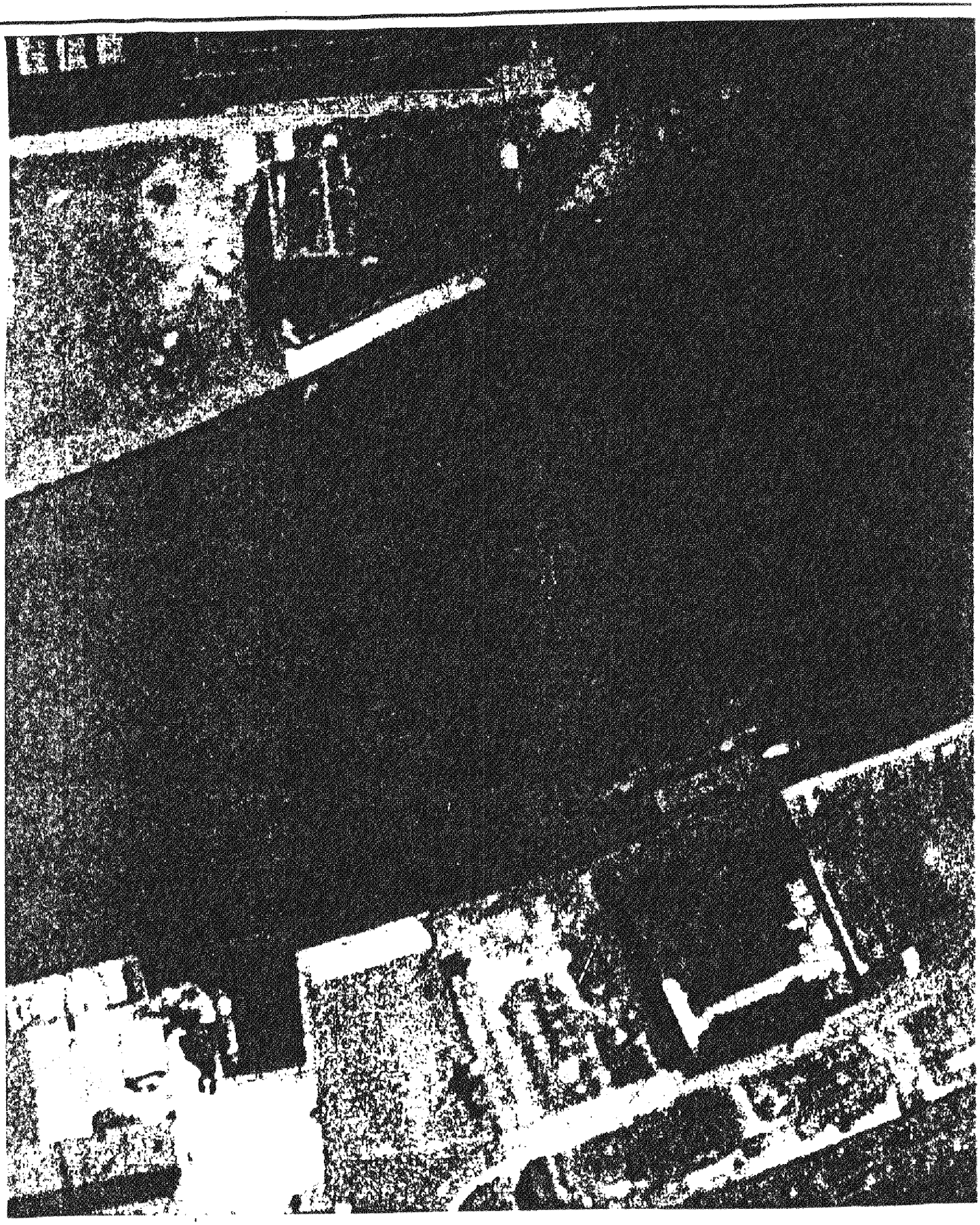
December 5, 1953 (Scale: 1"=1000')
- Block 130, Lot 12: Vacant.
- Block 133, Lot 1: PSE&G's Auto Maintenance building encompasses the lot. The building extends north into Block 130, Lot 1.
- Block 134, Lot 10: A small structure is located in the northeast part of the lot corresponding to the location of a concrete slab on Drawing 2.

August 4, 1966 (Scale: 1"=1000')
- Block 130, Lot 12: Small structures in the northeast corner of the lot.
- Block 133, Lot 1: PSE&G's Auto Maintenance building encompasses the lot. The building extends north into Block 130, Lot 1.
- Block 134, Lot 10: A small structure is located in the northeast part of the corresponding to the location of concrete slab on Drawing 2.

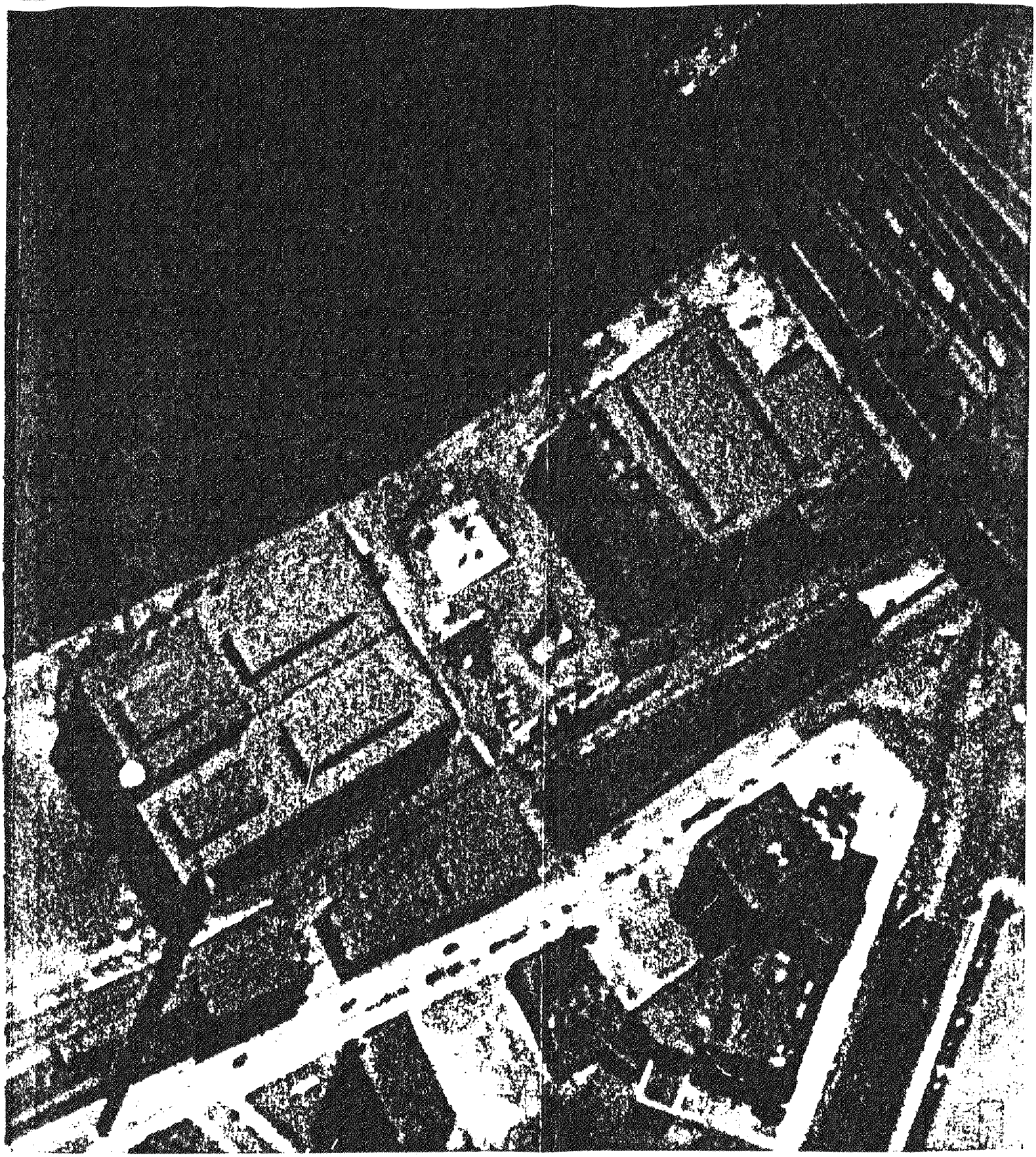
October 29, 1976 (Scale: 1"=1000')
- Block 130, Lot 12: Small structures in the northeast corner of the lot.
- Block 133, Lot 1: PSE&G's Auto Maintenance Building. This building also extends to Block 130, Lot 1. There is a chimney located at top north-west corner of the lot.
- Block 134, Lot 10: A small structure is located in the northeast part of the corresponding to the location of concrete slab on Drawing 2.

March 26, 1984 (Scale: 1"=1000')
- Block 130, Lot 12: Small structures in the northeast corner of the lot.
- Block 133, Lot 1: PSE&G's Auto Maintenance Building. This building also extends to Block 130, Lot 1. There is a chimney located at top north-west corner of the lot.
- Block 134, Lot 10: A small structure is located in the northeast part of the corresponding to the location of concrete slab on Drawing 2.

March 29, 1995 (Scale: 1"=1000')
- Block 130, Lots 1 and 12 : Vacant
- Block 133, Lot 1 : Vacant
- Block 134, Lot 10 : Vacant.



MAP REF: AERIAL VIEWPOINT HOUS



Langan Engineering and Environmental Services
(201) 794-6900 (215) 348-7101
Elmwood Park, NJ Doylestown, PA.

I, TEXAS

Project
PSE&G FORMER COAL STREET SITE
1940 AERIAL PHOTOGRAPHY
NEWARK NEW JERSEY

Job No.	Date	Scale	Dwg. No.
1432501	1/21/2000	1"=100'	

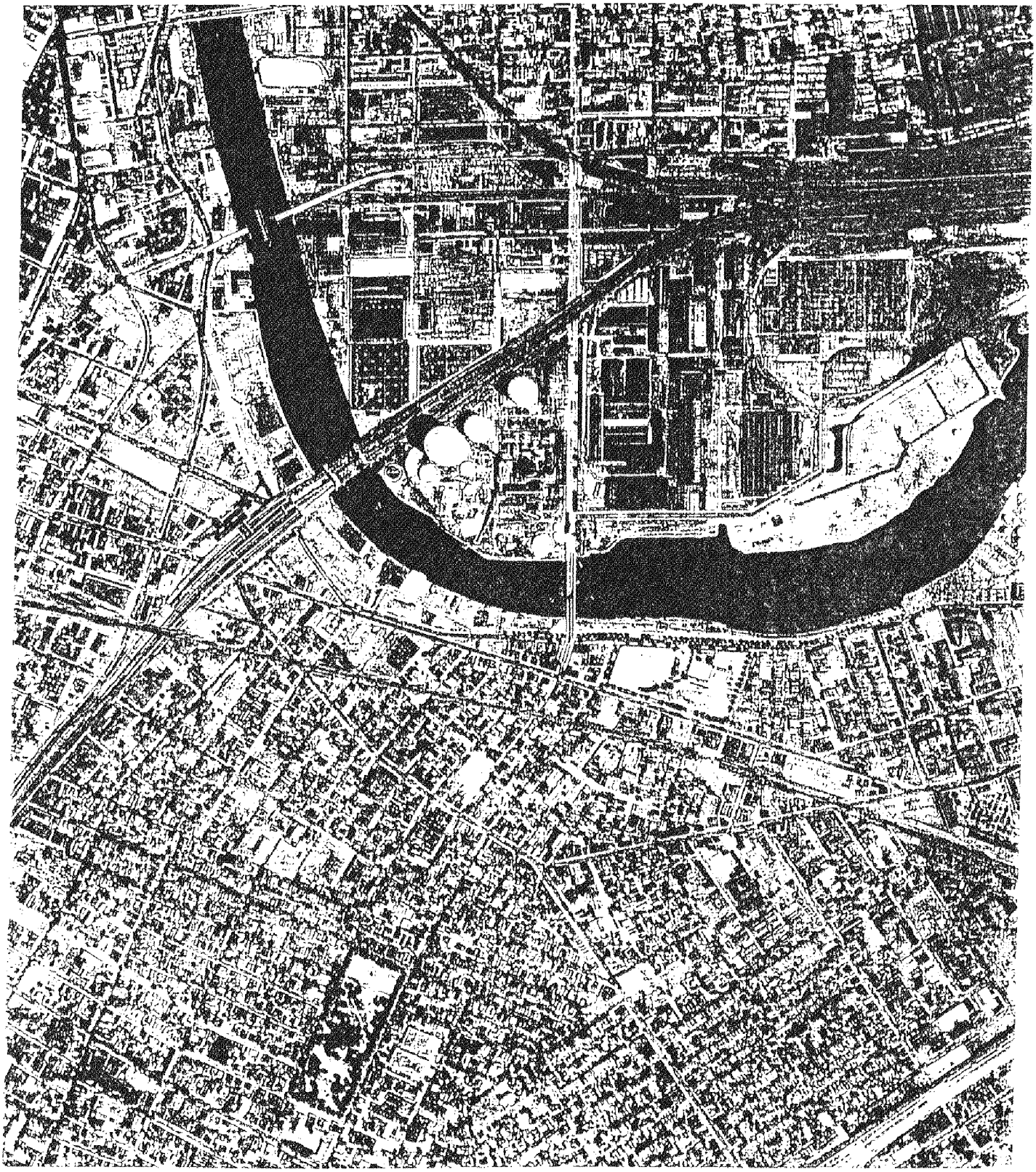
TIERRA-B-018000

Prepared by:

National Aerial Resources
Rensselaer Technology Park
385 Jordan Road
Troy, NY 12180

A division of e data resources, inc.

Client: Langan Engineering
Site Address: 855 Raymond Boulevard
USGS Quad: Elizabeth
City/Town(ship): Newark
County/State: Essex, NJ
Scale: 1"=1000' Originally flown at: 1"=1667'
Project Number: 97-1355
Date of Photography: December 5, 1953

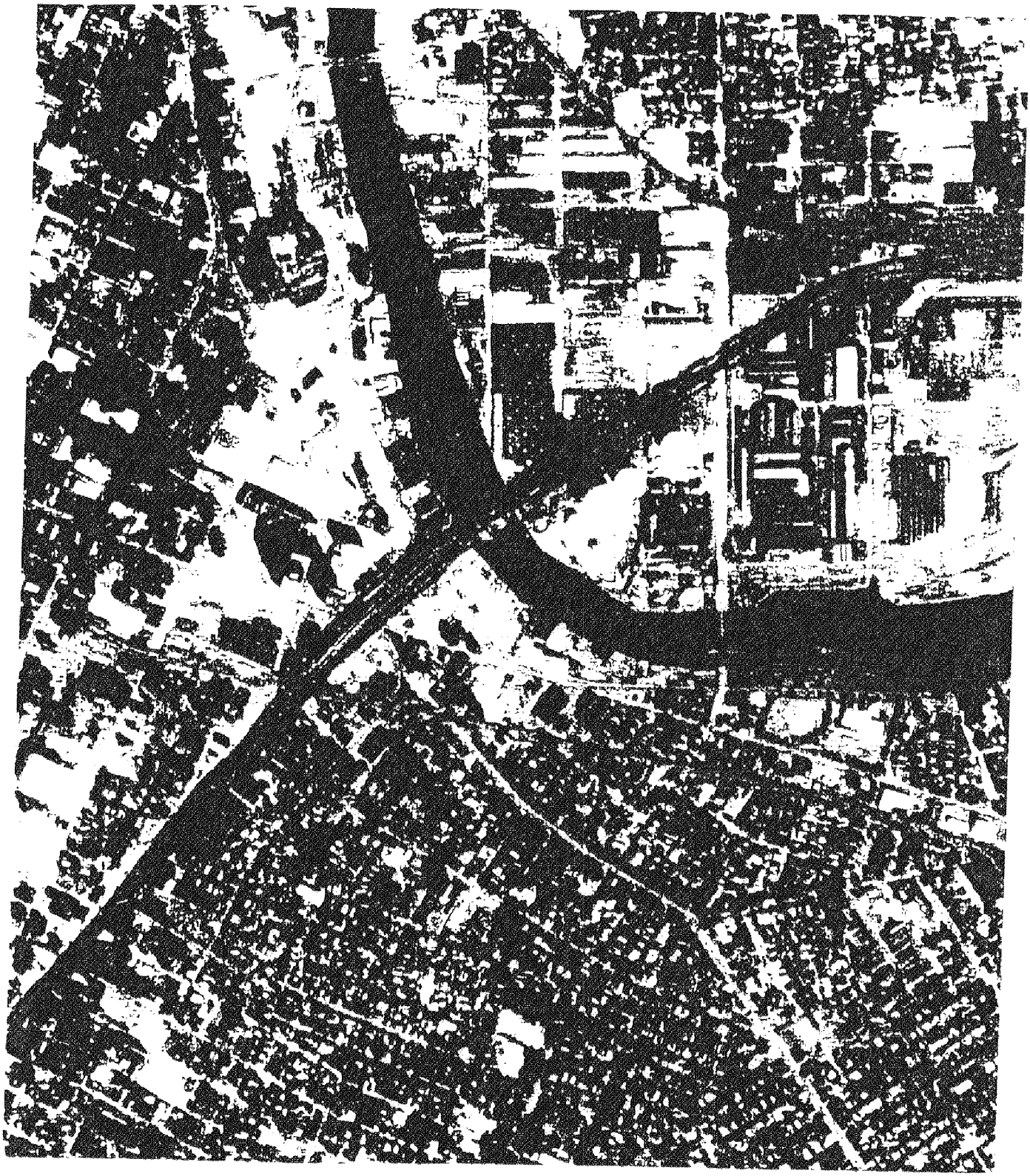


Prepared by:

National Aerial Resources
Rensselaer Technology Park
385 Jordan Road
Troy, NY 12180

A division of e data resources, inc

Client:	Langan Engineering
Site Address:	855 Raymond Boulevard
USGS Quad:	Elizabeth
City/Town(ship):	Newark
County/State:	Essex, NJ
Scale: 1"=1000'	Originally flown at: 1"=1667'
Project Number:	97-1355
Date of Photography:	August 4, 1966



Prepared by:

National Aerial Resources
Rensselaer Technology Park
385 Jordan Road
Troy, NY 12180

A division of e data resources, inc.

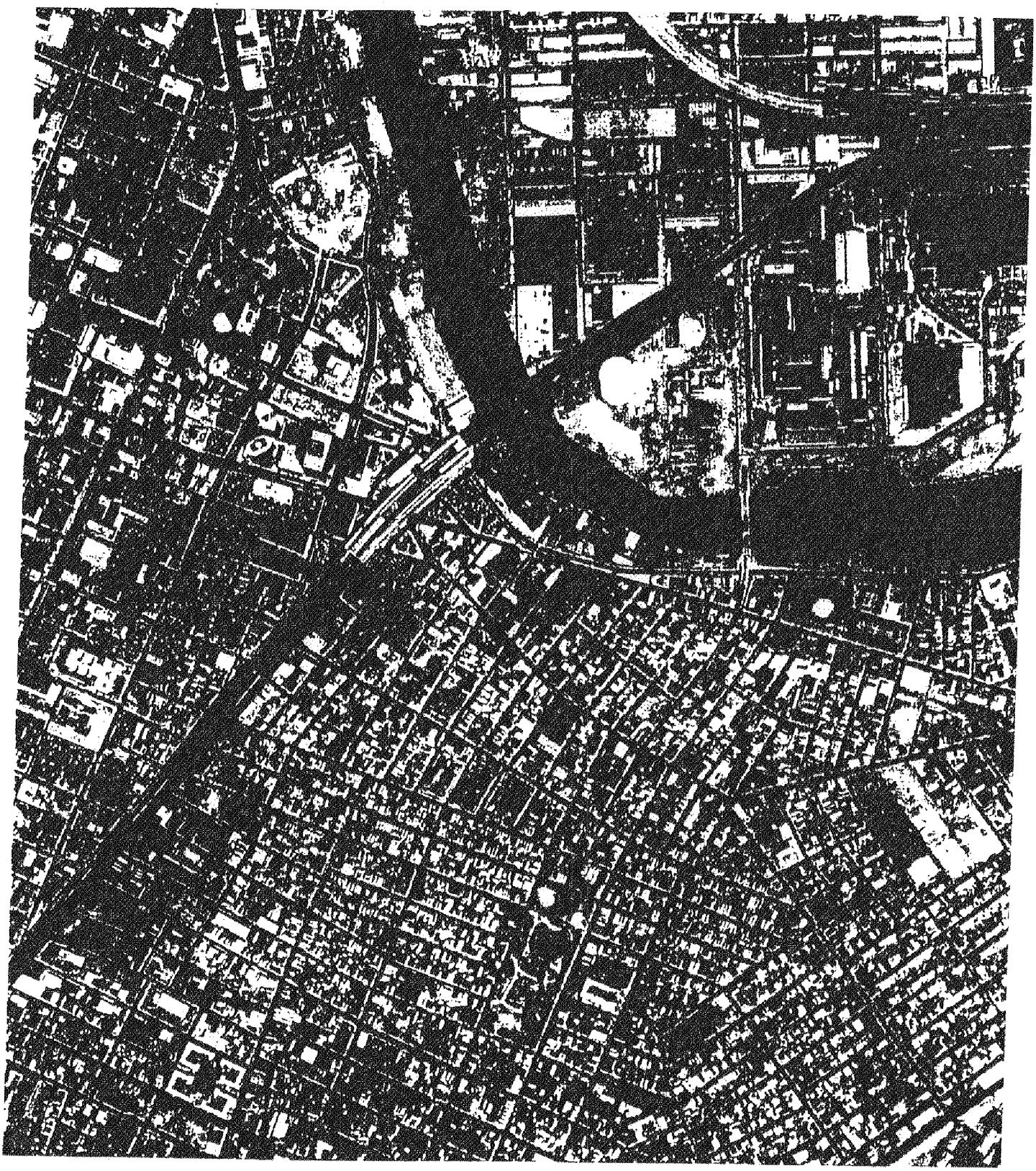
Client:	Langan Engineering
Site Address:	855 Raymond Boulevard
USGS Quad:	Elizabeth
City/Town(ship):	Newark
County/State:	Essex, NJ
Scale:	1"=1000' Originally flown at: 1"=6500'
Project Number:	97-1355
Date of Photography:	October 29, 1976

Prepared by:

National Aerial Resources
Rensselaer Technology Park
385 Jordan Road
Troy, NY 12180

A division of e data resources, inc.

Client:	Langan Engineering
Site Address:	855 Raymond Boulevard
USGS Quad:	Elizabeth
City/Town(ship):	Newark
County/State:	Essex, New Jersey
Scale:	1"=1000' Originally flown at: 1"=6667'
Project Number:	97-1355
Date of Photography:	March 26, 1984



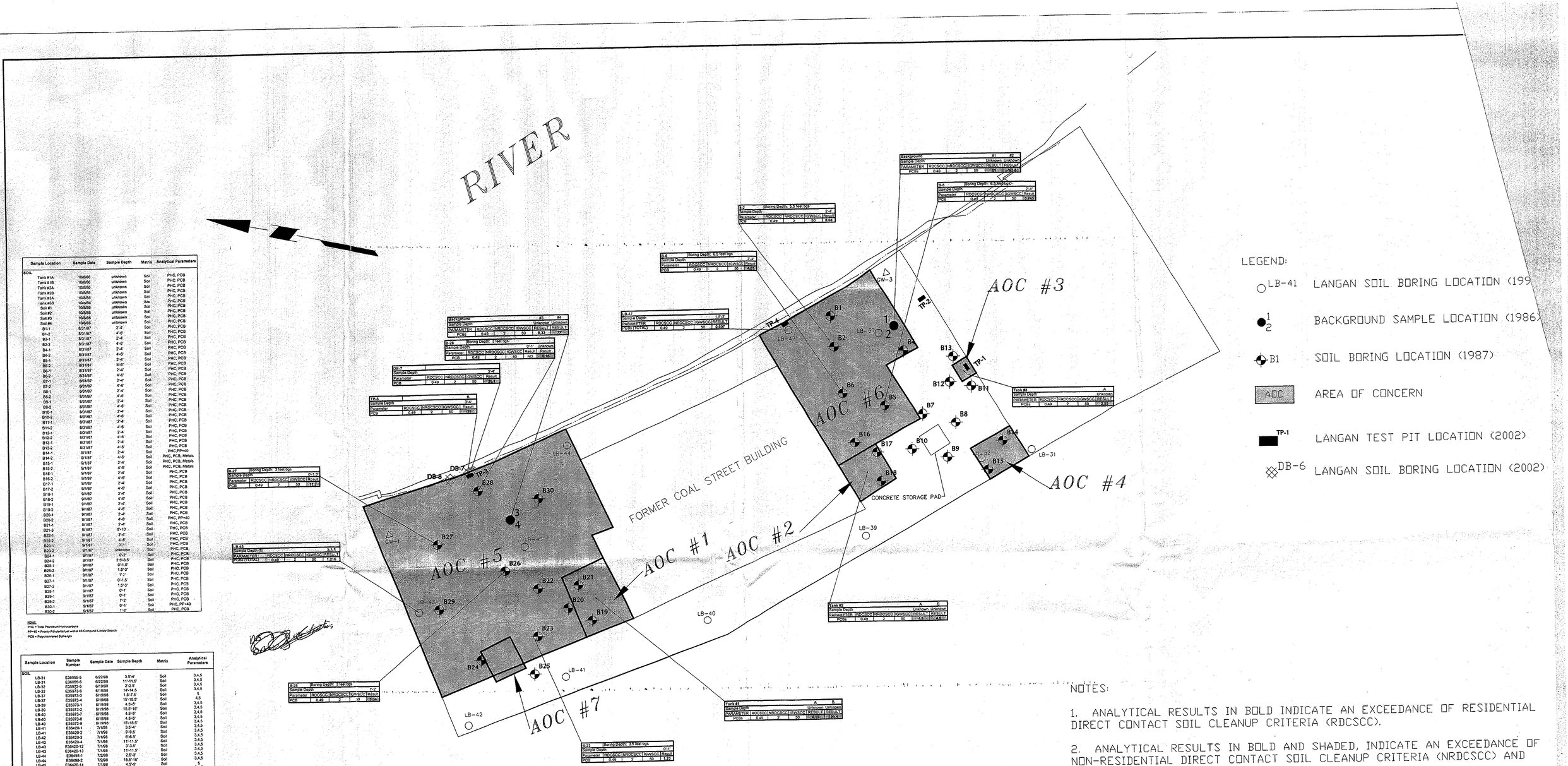
Prepared by:

National Aerial Resources
Rensselaer Technology Park
385 Jordan Road
Troy, NY 12180

A division of e data resources, inc.

N
E D R
TM
W
E
SINCE 1 1866
SANBORN, INC.
S

Client:	Langan Engineering
Site Address:	855 Raymond Boulevard
USGS Quad:	Elizabeth
City/Town(ship):	Newark
County/State:	Essex, NJ
Scale:	1"=1000' Originally flown at: 1"=3333'
Project Number:	97-1355
Date of Photography:	March 29, 1995



Sample Location	Sample Date	Sample Depth	Matrix	Analytical Parameters
SOIL				
Tank #1A	10/8/86	unknown	Soil	PHC, PCB
Tank #1B	10/8/86	unknown	Soil	PHC, PCB
Tank #2A	10/8/86	unknown	Soil	PHC, PCB
Tank #2B	10/8/86	unknown	Soil	PHC, PCB
Tank #3A	10/8/86	unknown	Soil	PHC, PCB
Tank #3B	10/8/86	unknown	Soil	PHC, PCB
Soil #1	10/8/86	unknown	Soil	PHC, PCB
Soil #2	10/8/86	unknown	Soil	PHC, PCB
Soil #3	10/8/86	unknown	Soil	PHC, PCB
Soil #4	10/8/86	unknown	Soil	PHC, PCB
B1-1	8/31/87	2'-4'	Soil	PHC, PCB
B1-2	8/31/87	4'-6'	Soil	PHC, PCB
B2-1	8/31/87	2'-4'	Soil	PHC, PCB
B2-2	8/31/87	4'-6'	Soil	PHC, PCB
B4-1	8/31/87	2'-4'	Soil	PHC, PCB
B4-2	8/31/87	4'-6'	Soil	PHC, PCB
B5-1	8/31/87	2'-4'	Soil	PHC, PCB
B5-2	8/31/87	4'-6'	Soil	PHC, PCB
B6-1	8/31/87	2'-4'	Soil	PHC, PCB
B6-2	8/31/87	4'-6'	Soil	PHC, PCB
B7-1	8/31/87	2'-4'	Soil	PHC, PCB
B7-2	8/31/87	4'-6'	Soil	PHC, PCB
B8-1	8/31/87	2'-4'	Soil	PHC, PCB
B8-2	8/31/87	4'-6'	Soil	PHC, PCB
B9-1	8/31/87	2'-4'	Soil	PHC, PCB
B9-2	8/31/87	4'-6'	Soil	PHC, PCB
B10-1	8/31/87	2'-4'	Soil	PHC, PCB
B10-2	8/31/87	4'-6'	Soil	PHC, PCB
B11-1	8/31/87	2'-4'	Soil	PHC, PCB
B11-2	8/31/87	4'-6'	Soil	PHC, PCB
B12-1	8/31/87	2'-4'	Soil	PHC, PCB
B12-2	8/31/87	4'-6'	Soil	PHC, PCB
B13-1	8/31/87	2'-4'	Soil	PHC, PCB
B13-2	8/31/87	4'-6'	Soil	PHC, PCB
B14-1	9/1/87	2'-4'	Soil	PHC,PP+40
B14-2	9/1/87	4'-6'	Soil	PHC, PCB, Metals
B15-1	9/1/87	2'-4'	Soil	PHC, PCB, Metals
B15-2	9/1/87	4'-6'	Soil	PHC, PCB, Metals
B16-1	9/1/87	2'-4'	Soil	PHC, PCB
B16-2	9/1/87	4'-6'	Soil	PHC, PCB
B17-1	9/1/87	2'-4'	Soil	PHC, PCB
B17-2	9/1/87	4'-6'	Soil	PHC, PCB
B18-1	9/1/87	2'-4'	Soil	PHC, PCB
B18-2	9/1/87	4'-6'	Soil	PHC, PCB
B19-1	9/1/87	2'-4'	Soil	PHC, PCB
B19-2	9/1/87	4'-6'	Soil	PHC, PCB
B20-1	9/1/87	2'-4'	Soil	PHC, PCB
B20-2	9/1/87	4'-6'	Soil	PHC, PP+40
B21-1	9/1/87	2'-4'	Soil	PHC, PCB
B21-3	9/1/87	8'-10'	Soil	PHC, PCB
B22-1	9/1/87	2'-4'	Soil	PHC, PCB
B22-3	9/1/87	4'-6'	Soil	PHC, PCB
B23-1	9/1/87	0'-1'	Soil	PHC, PCB
B23-2	9/1/87	unknown	Soil	PHC, PCB
B24-1	9/1/87	0'-2'	Soil	PHC, PCB
B24-2	9/1/87	2.5'-3.5'	Soil	PHC, PCB
B25-1	9/1/87	0'-1.5'	Soil	PHC, PCB
B25-2	9/1/87	1.5'-3'	Soil	PHC, PCB
B26-1	9/1/87	1'-2'	Soil	PHC, PCB
B27-1	9/1/87	0'-1.5'	Soil	PHC, PCB
B27-2	9/1/87	1.5'-3'	Soil	PHC, PCB
B28-1	9/1/87	0'-1'	Soil	PHC, PCB
B29-1	9/1/87	0'-1'	Soil	PHC, PCB
B29-2	9/1/87	1'-2'	Soil	PHC, PCB
B30-1	9/1/87	0'-1'	Soil	PHC, PP+40
B30-2	9/1/87	1'-2'	Soil	PHC, PCB

NOTES:
PHC = Total Petroleum Hydrocarbons
PP+40 = Priority Pollutants List with a 40-Compound Library Search
PCB = Polychlorinated Biphenyls

Sample Location	Sample Number	Sample Date	Sample Depth	Matrix	Analytical Parameters
SOIL					
LB-31	E36055-5	6/22/98	3.5'-4'	Soil	3,4,5
LB-31	E36055-6	6/22/98	11'-11.5'	Soil	3,4,5
LB-32	E35973-5	6/19/98	2'-2.5'	Soil	3,4,5
LB-32	E35973-6	6/19/98	14'-14.5	Soil	5
LB-37	E35973-3	6/19/98	1.5'-7.5'	Soil	4,5
LB-37	E35973-4	6/19/98	15'-15.5'	Soil	3,4,5
LB-39	E35973-1	6/19/98	4.5'-5'	Soil	3,4,5
LB-39	E35973-2	6/19/98	15.5'-16'	Soil	3,4,5
LB-40	E35973-7	6/19/98	4.5'-5'	Soil	3,4,5
LB-40	E35973-8	6/19/98	4.5'-5'	Soil	3,4,5
LB-40	E35973-9	6/19/98	15'-15.5'	Soil	3,4,5
LB-41	E36420-1	7/1/98	3.5'-4'	Soil	3,4,5
LB-41	E36420-2	7/1/98	9'-9.5'	Soil	3,4,5
LB-42	E36420-3	7/1/98	6'-6.5'	Soil	3,4,5
LB-42	E36420-4	7/1/98	11'-11.5'	Soil	3,4,5
LB-43	E36420-12	7/1/98	3'-3.5'	Soil	3,4,5
LB-43	E36420-13	7/1/98	11'-11.5'	Soil	3,4,5
LB-44	E36498-1	7/2/98	2.5'-3'	Soil	3,4,5
LB-44	E36498-2	7/2/98	15.5'-16'	Soil	5
LB-45	E36420-14	7/1/98	4.5'-5'	Soil	3,4,5
LB-45	E36420-15	7/1/98	11'-11.5'	Soil	3,4,5
LB-47	E35973-10	6/19/98	1.5'-2'	Soil	3,4,5
LB-47	E35973-11	6/19/98	12'-12.5'	Soil	3,4,5
GW-1	E36055-7	6/22/98	3'-3.5'	Soil	3,4,5
GW-1	E36055-8	6/22/98	11'-11.5'	Soil	3,4,5
GW-3	E36055-1	6/22/98	6.5'-7'	Soil	3,4,5
GW-3	E36055-2	6/22/98	6.5'-7'	Soil	3,4,5

Sample Location	Sample Number	Sample Date	Sample Depth	Matrix	Analytical Parameters
SOIL					
DB-7	DB-7	7/2/02	3'-4'	Soil	5
DB-8	DB-8	7/2/02	3'-4'	Soil	5
TP-1	TP-1A	6/13/02	1.5'-2'	Soil	5
TP-1	TP-1B	6/13/02	4'-5'	Soil	5
TP-1	DUP	6/13/02	4'-5'	Soil	5
TP-2	TP-2A	6/13/02	1'-2'	Soil	5
TP-2	TP-2B	6/13/02	4'-4.5'	Soil	5
TP-3	TP-3B	6/13/02	3'-4'	Soil	5
TP-4	TP-4A	6/13/02	1.5'-2'	Soil	5

Analytical Parameter Key:
1 = ABNs (Acid Base Neutrals)
2 = Cyanide
3 = Metals
4 = PAHs (Polycyclic Aromatic Compounds)
5 = PCBs (Polychlorinated Biphenyls)
6 = Pesticides
7 = VOCs (Volatile Organic Compounds)
8 = Lead

Notes:
1) A convgent soi sample was collected from location DB-9. Because soi sample DB-8 contained no exceedances of the most stringent NJDEP soil cleanup criteria, the soi sample collected at location DB-9 was not analyzed.
2) A convgent soi sample was collected from location DB-10. Because soi sample DB-8 contained no exceedances of the most stringent NJDEP soil cleanup criteria, and because the soi sample collected from location DB-9 was not analyzed, the soi sample collected at location DB-10 was also not analyzed.

LEGEND:

- LB-41 — LANGAN SOIL BORING LOCATION (199
- 1, 2 — BACKGROUND SAMPLE LOCATION (1986)
- B1 — SOIL BORING LOCATION (1987)
- AOC — AREA OF CONCERN
- TP-1 — LANGAN TEST PIT LOCATION (2002)
- DB-6 — LANGAN SOIL BORING LOCATION (2002)

NOTES:

1. ANALYTICAL RESULTS IN BOLD INDICATE AN EXCEEDANCE OF RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (RDCSCC).
2. ANALYTICAL RESULTS IN BOLD AND SHADED, INDICATE AN EXCEEDANCE OF NON-RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (NRDCSCC) AND RDCSCC.
3. SEE SAMPLE ANALYSIS TABLES ON THIS SHEET FOR A SUMMARY OF ANALYSES CONDUCTED.
4. ALL CONCENTRATIONS ARE EXPRESSED AS MILLIGRAMS PER KILOGRAM (MG/KG).
5. RESULTS ARE SHOWN ONLY FOR SOIL SAMPLES WHERE THE CONCENTRATION OF TOTAL PCBs EXCEEDS RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (RDCSCC).

Date	Description	No.
Revisions		

Engineer/License

Langan Engineering and Environmental Services
River Drive Center 1
Elmwood Park, NJ 07407
Phone: (201) 794-6900
Fax: (201) 794-0366
langan.com
• Doylestown, PA
• Miami, FL
• New Haven, CT
• New York, NY
• Philadelphia, PA

Project: PSE&G FORMER COAL STREET SITE
NEWARK NEW JERSEY

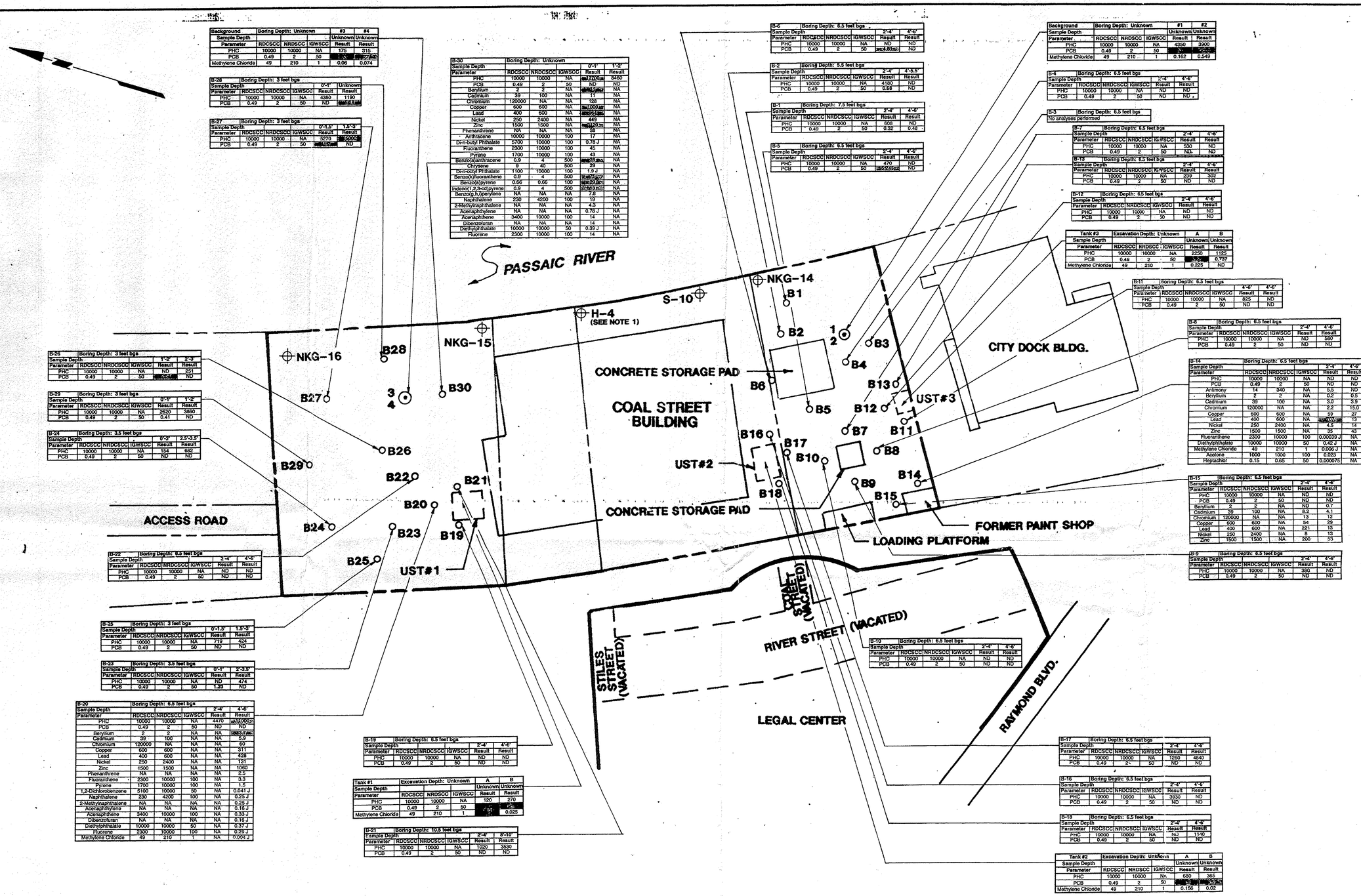
Drawing Title: PCB CONCENTRATIONS IN SOIL

Job No.	1432502
Date	07/12/02
Scale	1"=50'
Drn. By	CG CG
Chkd. By	MS

Figure No. 1

Filename: G:\Data5\1432501\Cadd Data - 1432501\Dwg\PCB CHEM BOX\PCB BOX.dwg Date: 8/7/2002 Time: 10:05 User: jtella Style Table: Langan_OCE.stb Layout: 1

TIERRA-B-018006



Background	Boring Depth: Unknown			#3	#4
Sample Depth				Unknown	Unknown
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	175	315
PCB	0.49	2	50	[redacted]	[redacted]
Methylene Chloride	49	210	1	0.06	0.074

B-28	Boring Depth: 3 feet bgs				
Sample Depth				0'-1'	Unknown
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	4350	1190
PCB	0.49	2	50	ND	[redacted]

B-27	Boring Depth: 3 feet bgs				
Sample Depth				0'-1.5'	1.5'-3'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	5270	[redacted]
PCB	0.49	2	50	[redacted]	ND

B-30	Boring Depth: Unknown				
Sample Depth				0'-1'	1'-2'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	[redacted]	8460
PCB	0.49	2	50	ND	ND
Beryllium	2	2	NA	[redacted]	NA
Cadmium	39	100	NA	11	NA
Chromium	120000	NA	NA	128	NA
Copper	600	600	NA	[redacted]	NA
Lead	400	600	NA	[redacted]	NA
Nickel	250	2400	NA	449	NA
Zinc	1500	1500	NA	[redacted]	NA
Phenanthrene	NA	NA	NA	58	NA
Anthracene	10000	10000	100	17	NA
Di-n-butyl Phthalate	5700	10000	100	0.78 J	NA
Fluoranthene	2300	10000	100	45	NA
Pyrene	1700	10000	100	43	NA
Benzo(a)anthracene	0.9	4	500	[redacted]	NA
Chrysene	9	40	500	29	NA
Di-n-octyl Phthalate	1100	10000	100	1.9 J	NA
Benzo(k)fluoranthene	0.9	4	500	[redacted]	NA
Benzo(a)pyrene	0.56	0.66	100	[redacted]	NA
Indeno(1,2,3-cd)pyrene	0.9	4	500	[redacted]	NA
Benzo(g,h,i)perylene	NA	NA	NA	7.8	NA
Naphthalene	230	4200	100	19	NA
2-Methylnaphthalene	NA	NA	NA	4.3	NA
Acenaphthylene	NA	NA	NA	0.78 J	NA
Acenaphthene	3400	10000	100	14	NA
Dibenzofuran	NA	NA	NA	14	NA
Diethylphthalate	10000	10000	50	0.39 J	NA
Fluorene	2300	10000	100	14	NA

B-5	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	[redacted]	ND

B-2	Boring Depth: 5.5 feet bgs				
Sample Depth				2'-4'	4'-5.5'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	4180	ND
PCB	0.49	2	50	0.68	ND

B-1	Boring Depth: 7.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	608	ND
PCB	0.49	2	50	0.32	0.48

B-5	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	470	ND
PCB	0.49	2	50	[redacted]	ND

Background	Boring Depth: Unknown			#1	#2
Sample Depth				Unknown	Unknown
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	4350	3900
PCB	0.49	2	50	[redacted]	[redacted]
Methylene Chloride	49	210	1	0.162	0.549

B-4	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	ND	ND

B-3	Boring Depth: 6.5 feet bgs
No analyses performed	

B-7	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	19000	NA	530	ND
PCB	0.49	2	50	NA	ND

B-13	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	239	302
PCB	0.49	2	50	ND	ND

B-12	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	ND	ND

Tank #3	Excavation Depth: Unknown			A	B
Sample Depth				Unknown	Unknown
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	2250	1125
PCB	0.49	2	50	[redacted]	0.737
Methylene Chloride	49	210	1	0.225	ND

B-11	Boring Depth: 6.5 feet bgs				
Sample Depth				4'-6'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	825	ND
PCB	0.49	2	50	ND	ND

B-8	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	550	550
PCB	0.49	2	50	ND	ND

B-14	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	ND	ND
Antimony	14	340	NA	5.5	ND
Beryllium	2	2	NA	0.2	0.5
Cadmium	39	100	NA	3.0	3.9
Chromium	120000	NA	NA	2.2	15.0
Copper	600	600	NA	59	27
Lead	400	600	NA	[redacted]	13
Nickel	250	2400	NA	4.5	14
Zinc	1500	1500	NA	35	45
Fluoranthene	2300	10000	100	0.000039 J	NA
Diethylphthalate	10000	10000	50	0.42 J	NA
Methylene Chloride	49	210	1	0.006 J	NA
Acetone	1000	1000	100	0.023	NA
Heptachlor	0.15	0.65	50	0.0000075	NA

B-15	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	ND	ND
Beryllium	2	2	NA	ND	0.7
Cadmium	39	100	NA	8.5	4.1
Chromium	120000	NA	NA	13	12
Copper	600	600	NA	54	29
Lead	400	600	NA	221	13
Nickel	250	2400	NA	8	13
Zinc	1500	1500	NA	200	53

B-9	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	350	ND
PCB	0.49	2	50	ND	ND

B-26	Boring Depth: 3 feet bgs				
Sample Depth				1'-2'	2'-3'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	251
PCB	0.49	2	50	[redacted]	ND

B-29	Boring Depth: 3 feet bgs				
Sample Depth				0'-1'	1'-2'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	2620	3660
PCB	0.49	2	50	0.41	ND

B-24	Boring Depth: 3.5 feet bgs				
Sample Depth				0'-2'	2.5'-3.5'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	154	682
PCB	0.49	2	50	ND	ND

B-22	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	ND	ND

B-25	Boring Depth: 3 feet bgs				
Sample Depth				0'-1.5'	1.5'-3'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	719	424
PCB	0.49	2	50	ND	ND

B-23	Boring Depth: 3.5 feet bgs				
Sample Depth				0'-1'	2'-3.5'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	474
PCB	0.49	2	50	1.23	ND

B-20	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	4470	[redacted]
PCB	0.49	2	50	ND	ND
Beryllium	2	2	NA	NA	[redacted]
Cadmium	39	100	NA	NA	5.9
Chromium	120000	NA	NA	NA	60
Copper	600	600	NA	NA	311
Lead	400	600	NA	NA	428
Nickel	250	2400	NA	NA	131
Zinc	1500	1500	NA	NA	1060
Phenanthrene	NA	NA	NA	NA	2.5
Fluoranthene	2300	10000	100	NA	3.3
Pyrene	1700	10000	100	NA	1.5
1,2-Dichlorobenzene	5100	10000	50	NA	0.041 J
Naphthalene	230	4200	100	NA	0.25 J
2-Methylnaphthalene	NA	NA	NA	NA	0.25 J
Acenaphthylene	NA	NA	NA	NA	0.16 J
Acenaphthene	3400	10000	100	NA	0.33 J
Dibenzofuran	NA	NA	NA	NA	0.16 J
Diethylphthalate	10000	10000	50	NA	0.37 J
Fluorene	2300	10000	100	NA	0.29 J
Methylene Chloride	49	210	1	NA	0.004 J

B-19	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	ND	ND

Tank #1	Excavation Depth: Unknown			A	B
Sample Depth				Unknown	Unknown
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	120	270
PCB	0.49	2	50	[redacted]	[redacted]
Methylene Chloride	49	210	1	[redacted]	0.025

B-21	Boring Depth: 10.5 feet bgs				
Sample Depth				2'-4'	8'-10'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	1020	3530
PCB	0.49	2	50	ND	ND

B-10	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	ND	ND
PCB	0.49	2	50	ND	ND

B-17	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	1260	4640
PCB	0.49	2	50	ND	ND

B-16	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	3930	ND
PCB	0.49	2	50	ND	ND

B-18	Boring Depth: 6.5 feet bgs				
Sample Depth				2'-4'	4'-6'
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	NJ	1140
PCB	0.49	2	50	ND	ND

Tank #2	Excavation Depth: Unknown			A	B
Sample Depth				Unknown	Unknown
Parameter	RDCSCC	NRDSCC	IGWSCC	Result	Result
PHC	10000	10000	NA	680	365
PCB	0.49	2	50	[redacted]	[redacted]
Methylene Chloride	49	210	1	0.156	0.02

NOTES:

1. Two composite soil samples were analyzed from geotechnical boring H-4, representing the 0-8 foot interval below ground surface (bgs) and the 8-16 foot interval bgs. These composite data are not shown on this drawing. Analytical data was not collected from any other geotechnical borings. Geotechnical boring logs are provided in Attachment B of the revised Preliminary Assessment Report (PAR). A discussion of discrete and composite results is provided in Attachment C of the revised PAR.
2. Units are in mg/kg.

LEGEND

○	PREVIOUS BORING LOCATION
⊙	PREVIOUS BACKGROUND SOIL SAMPLE LOCATION
⊕	GEOTECHNICAL SOIL BORING LOCATION (BY THE U.S. ARMY CORP. OF ENGINEERS)
[ ]	APPROXIMATE UST TANK LOCATION
10	EXCEEDANCE OF RDCSCC
[redacted]	EXCEEDANCE OF NRDCSCC
10	EXCEEDANCE OF IGWSCC

PHC	PETROLEUM HYDROCARBONS
PCB	TOTAL POLYCHLORINATED BIPHENYLS
ND	NOT DETECTED
NA	NOT APPLICABLE/NOT ANALYZED
RDCSCC	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA
NRDCSCC	NON-RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA
IGWSCC	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA

Date	Description	No.
Revisions		

Engineer/License

Langan
Engineering and Environmental Services

River Drive Center 1
Elmwood Park, NJ 07407
(201) 794-6900

• Doylestown, PA
• Miami, FL
• New York, NY

Project

PSE&G FORMER COAL STREET SITE

NEWARK NEW JERSEY

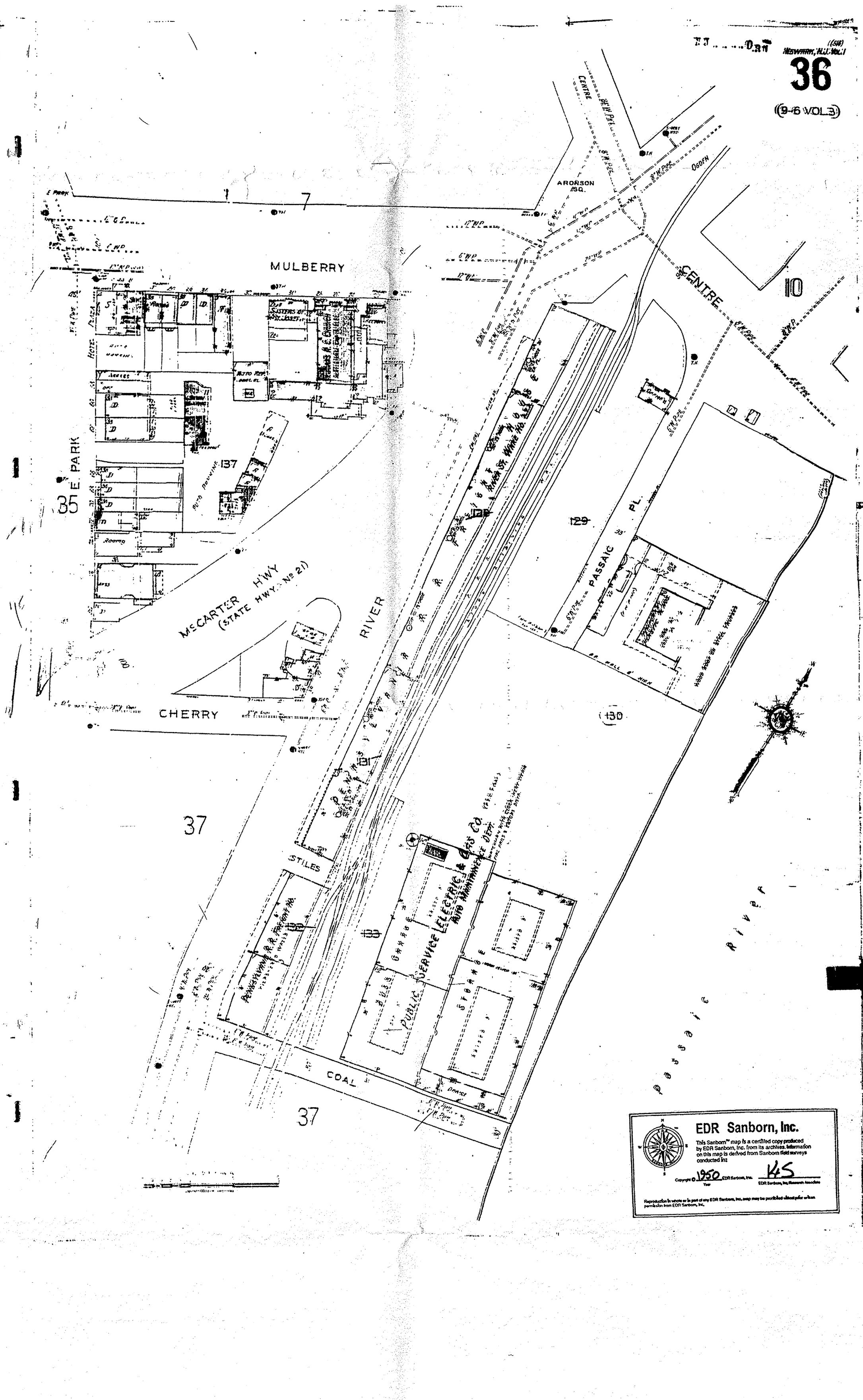
Drawing Title

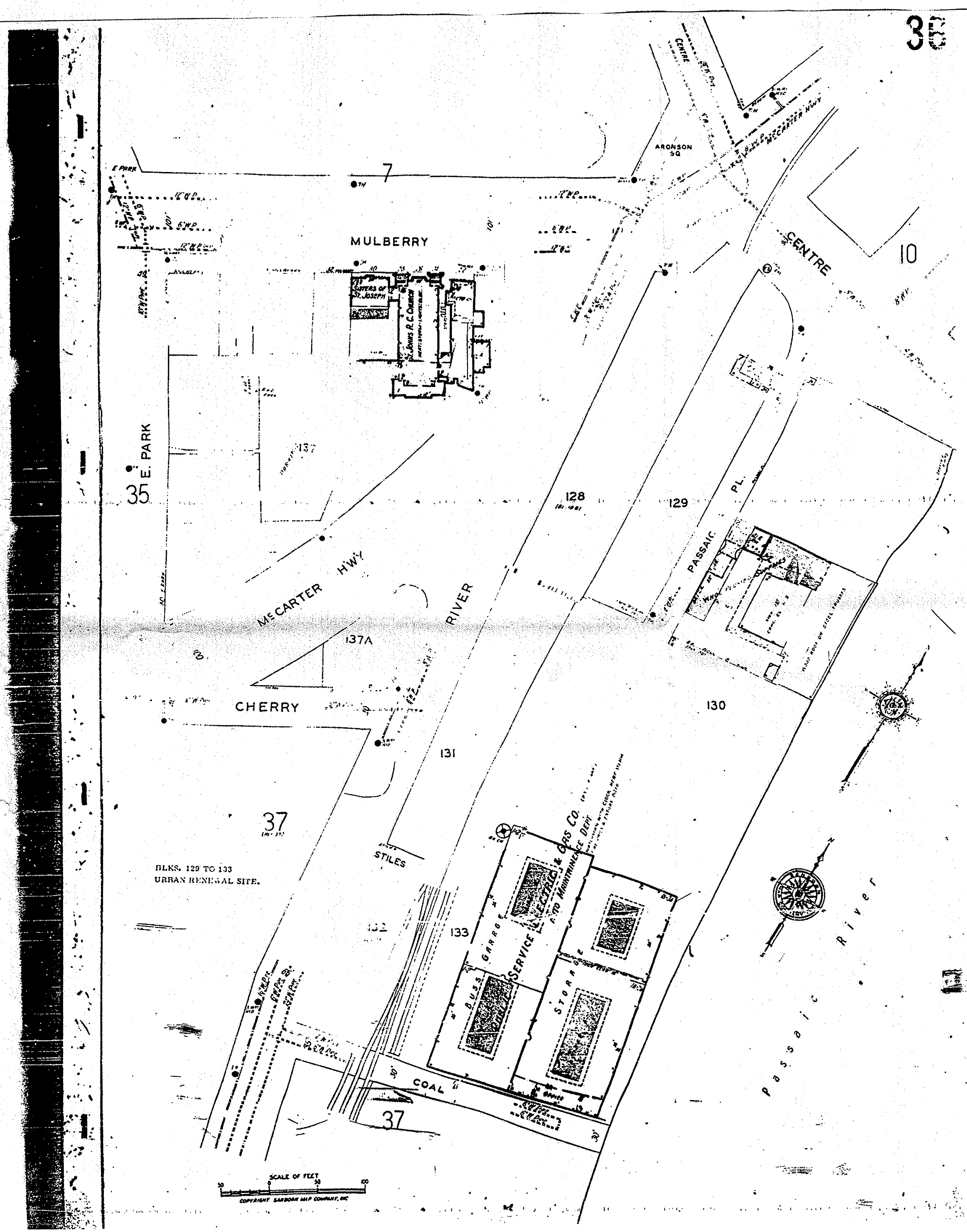
RESULTS OF PREVIOUS INVESTIGATIONS (1986 AND 1987)

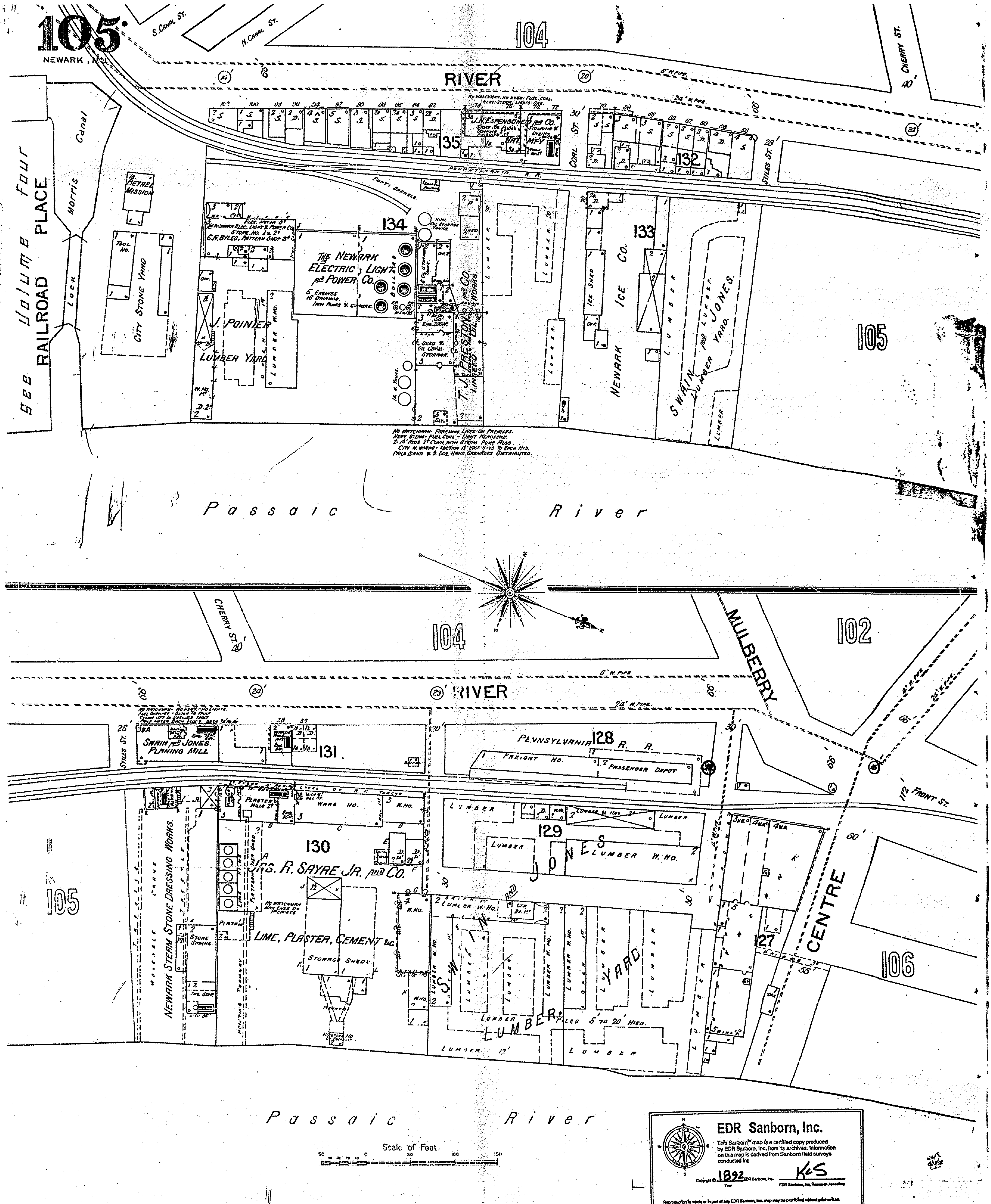
Job No. 1432502	Drawing No. 4
Date 6/30/2000	
Scale N.T.S.	
Drn. By G.W.R.	
Chkd. By E.S.	

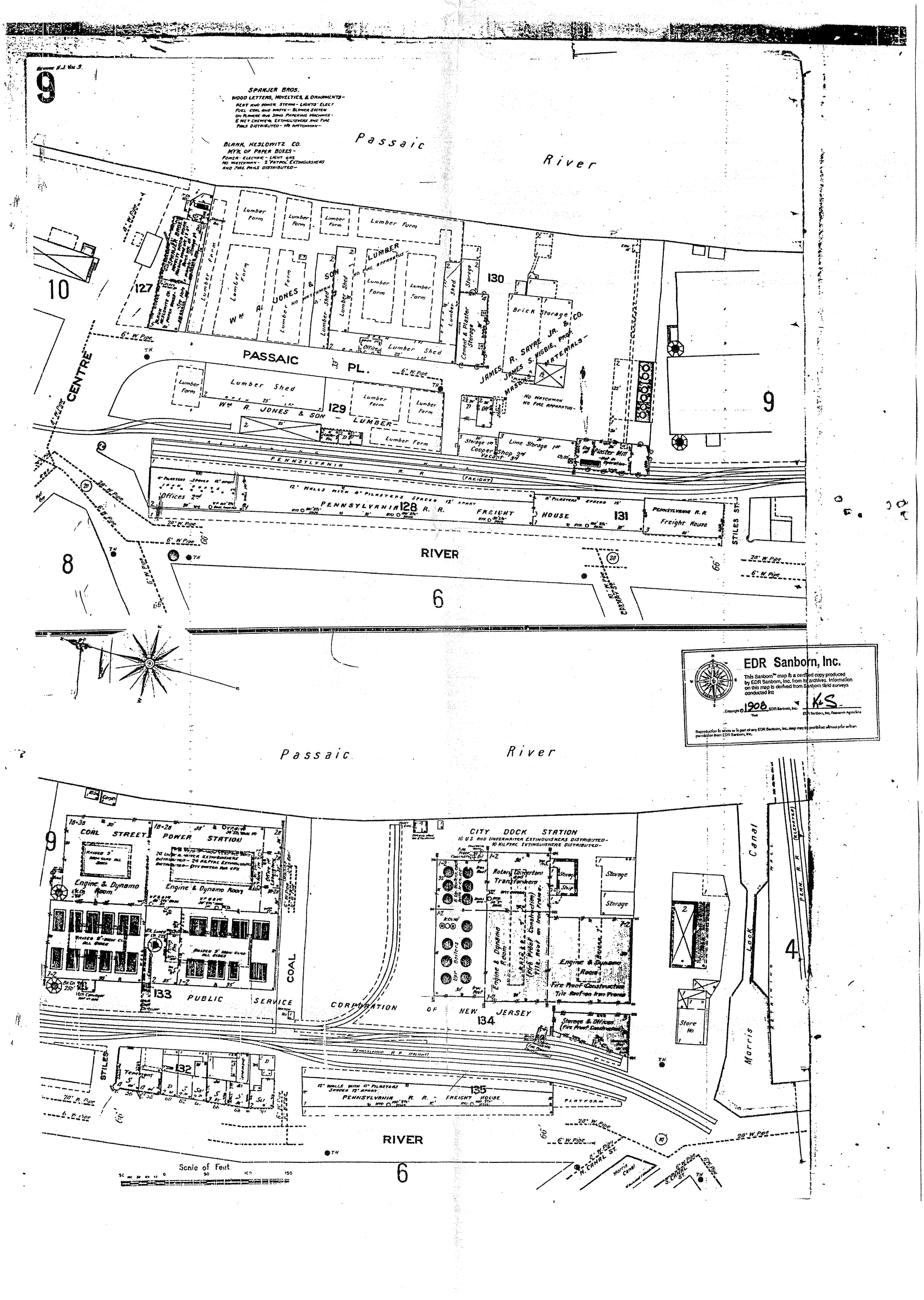
FILE DRAWER NO.41

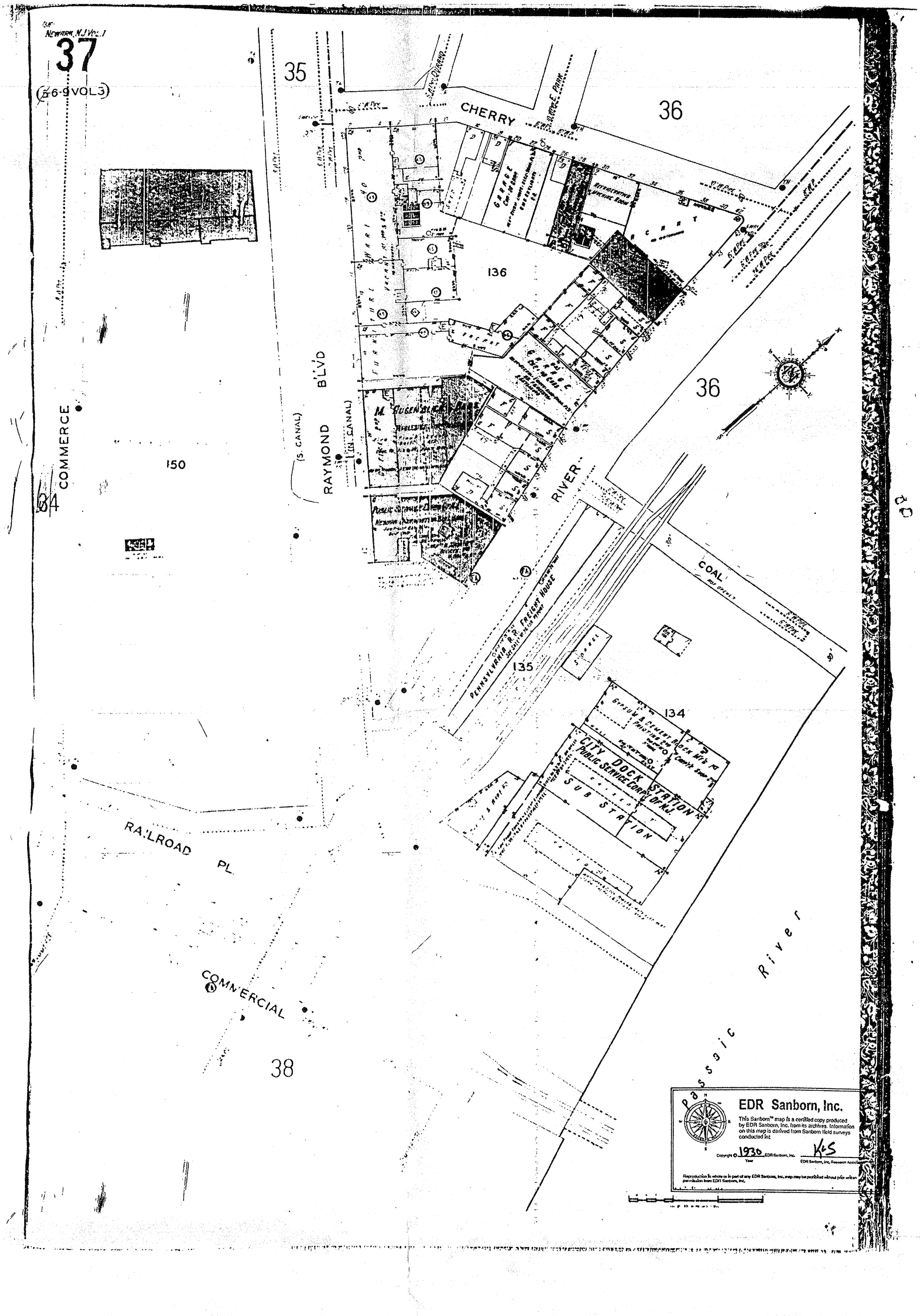
TIERRA-B-018007

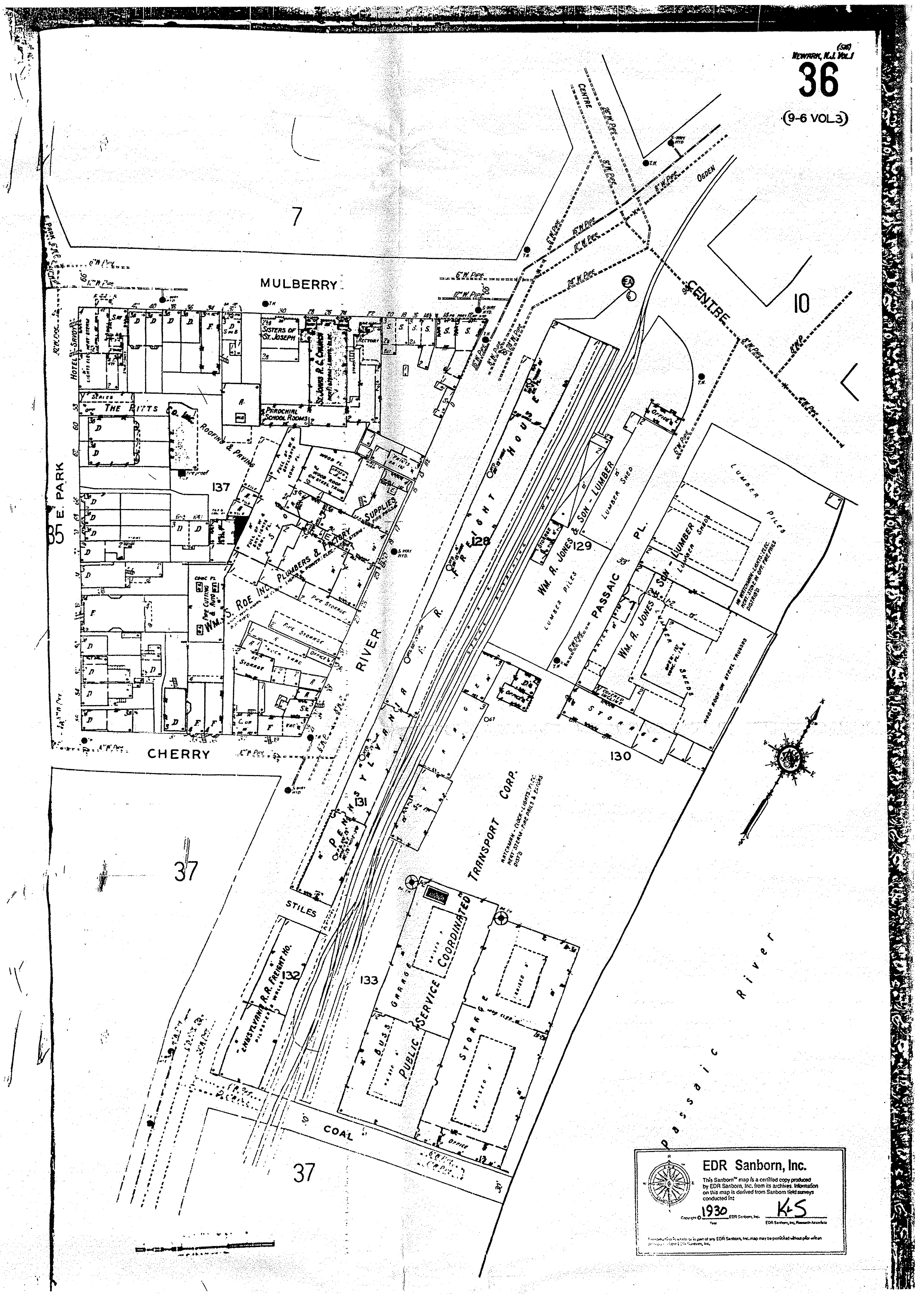


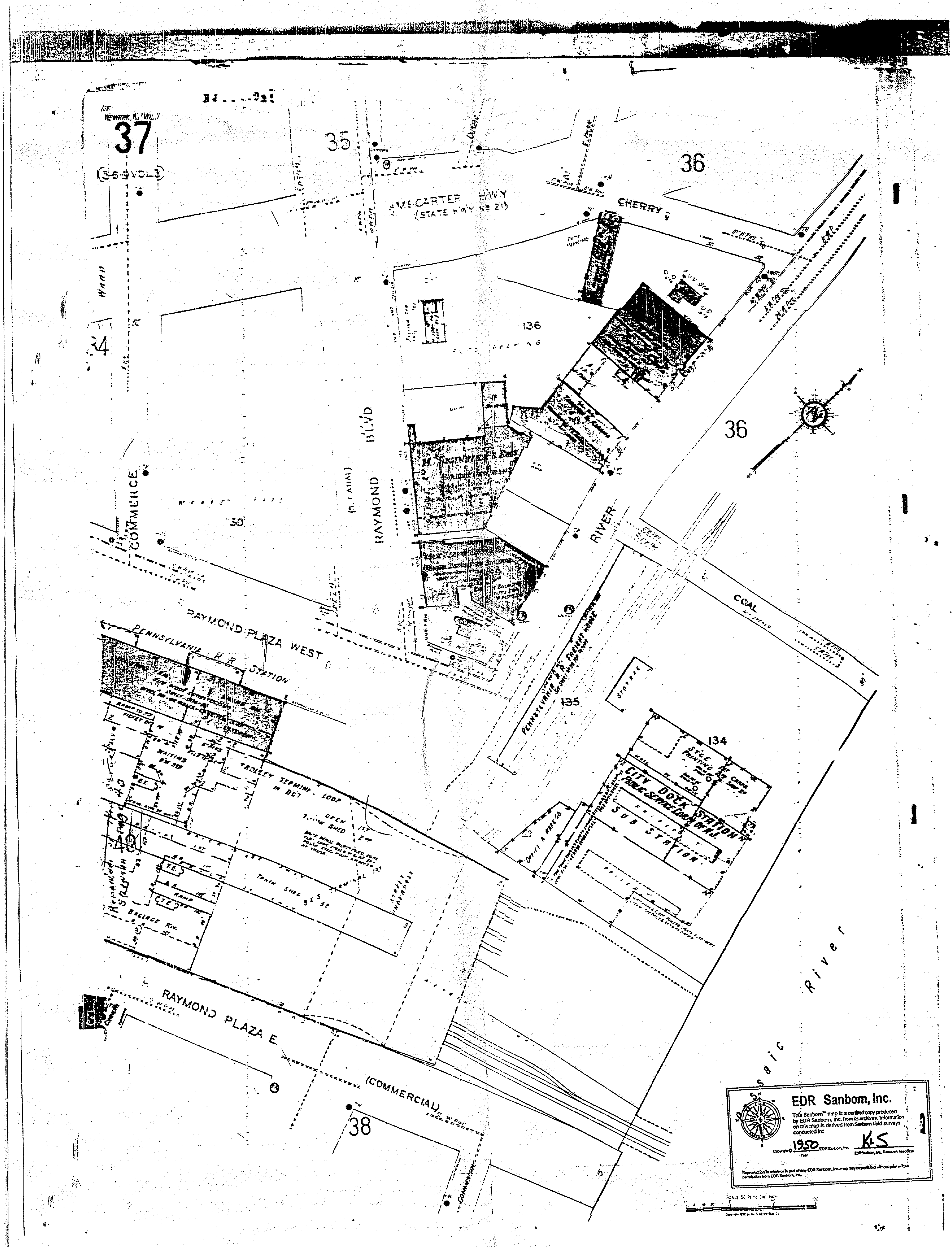



105
NEWARK, N.J.
S. CANAL ST.
N. CANAL ST.
104
RIVER
CHERRY ST.
6" W. PIPE
24" W. PIPE
See Volume Four
RAILROAD PLACE
Morris Canal
LOCK
BETHEL MISSION
TOOL HO.
CITY STONE YARD
J. POINIER LUMBER YARD
ELEC. MOTOR 3rd
THE NEWARK ELECTRIC LIGHT & POWER CO.
G.R. BYLES, PATTERN SHOP
134
THE NEWARK ELECTRIC LIGHT AND POWER CO.
5 ENGINES
16 DYNAMOS
IRON ROOFS & GIRDERS.
BOILERS
OIL STORAGE TANKS
SHED
T. J. PRESTON AND CO. LINSEED OIL WORKS.
SEED & OIL CAKE STORAGE
EMPTY BARRELS
PENNSYLVANIA R. R.
135
J.H. ESPENSCHEID AND CO.
HAT MFY
SCOURING & DYEING
COAL ST.
132
STILES ST.
133
NEWARK ICE CO.
ICE SHED
OFF.
LUMBER
SWAIN AND JONES. LUMBER YARD.
105
NO WATCHMAN- FOREMAN LIVES ON PREMISES.
HEAT STEAM- FUEL COAL - LIGHT KEROSENE.
2-1½" HYDS. 2" CONN. WITH STEAM PUMP ALSO
CITY W. WORKS- SECTION 1½" HOSE ATTD. TO EACH HYD.
PAILS SAND & 2 DOZ. HAND GRENADES DISTRIBUTED.
Passaic River
CHERRY ST. 40'
104
MULBERRY
102
RIVER
SWAIN AND JONES. PLANING MILL
131
PENNSYLVANIA 128 R. R.
FREIGHT HO.
PASSENGER DEPOT
FRONT ST.
LUMBER
129
LUMBER W. HO.
NEWARK STEAM STONE DRESSING WORKS.
MOVEABLE CRANE
STONE SAWING
PLASTER MILLS
WARE HO.
130
JAS. R. SAYRE JR. AND CO.
NO WATCHMAN MAN LIVES ON PREMISES
LIME, PLASTER, CEMENT &c.
STORAGE SHED.
HOISTING TRAMWAY
105
SWAIN AND JONES LUMBER YARD
LUMBER PILES 5' TO 20' HIGH.
CENTRE
127
106
Passaic River
Scale of Feet.
50 40 30 20 10 0 50 100 150

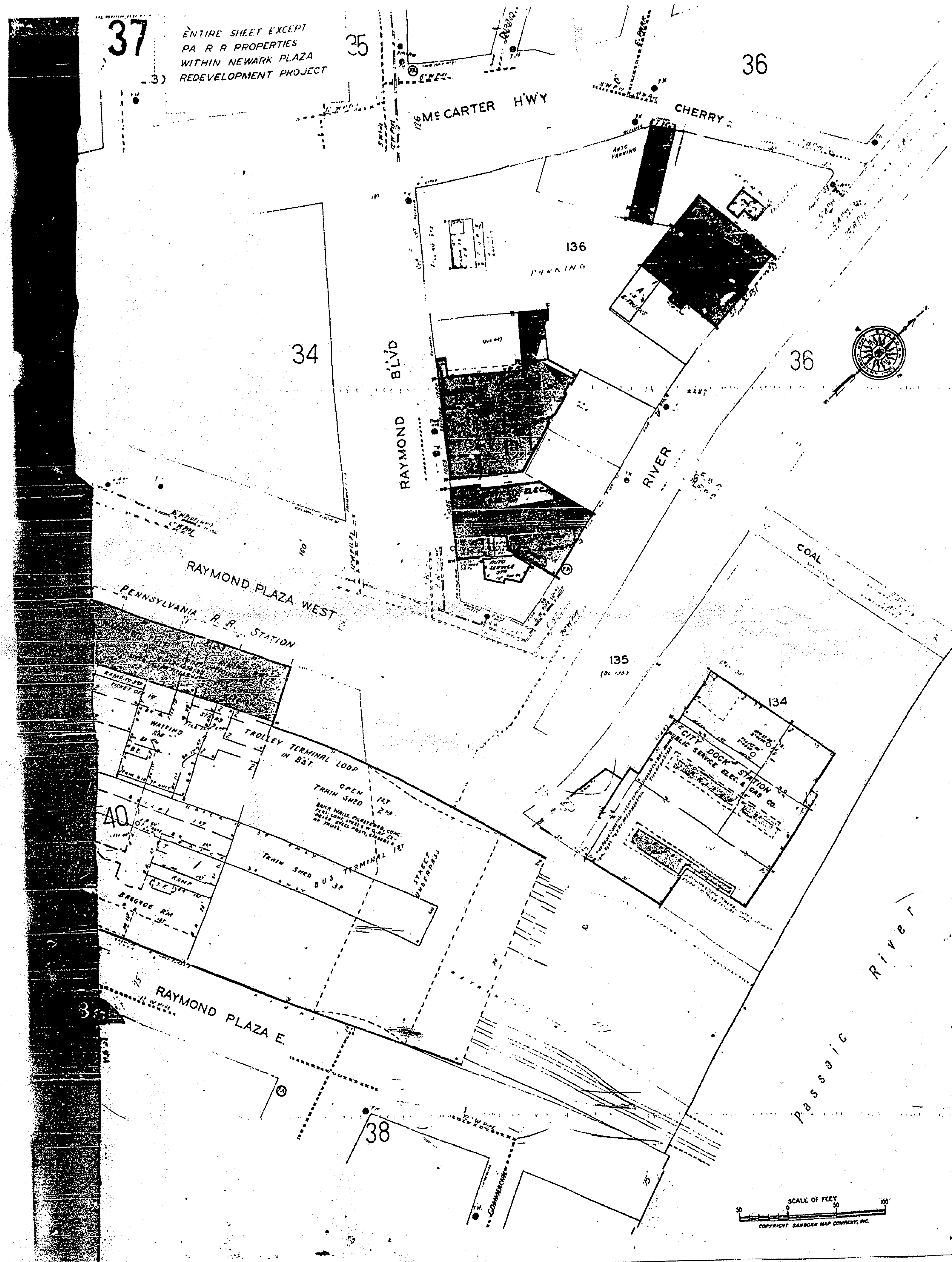

9
Passaic River
SPANJER BROS.
WOOD LETTERS, NOVELTIES, & ORNAMENTS-
HEAT AND POWER STEAM - LIGHTS ELECT
FUEL COAL AND WASTE - BLOWER SYSTEM
ON PLANERS AND SAND PAPERING MACHINES -
6 WET CHEMICAL EXTINGUISHERS AND FIRE
PAILS DISTRIBUTED - NO WATCHMAN -
BLANK, HESLOWITZ CO.
MFR. OF PAPER BOXES -
POWER ELECTRIC - LIGHT GAS
NO WATCHMAN - 2 PATROL EXTINGUISHERS
AND FIRE PAILS DISTRIBUTED -
Lumber Form
Lumber Shed
Wm A. JONES & SON LUMBER
NO WATCHMAN
NO FIRE APPARATUS
Office
Storage
127
128
129
130
131
132
133
134
135
10
8
6
4
PASSAIC PL.
CENTRE
Cement & Plaster Storage
Brick Storage
JAMES R. SAYRE JR. & CO.
JAMES S. HIGBIE, PROP.
MASONS MATERIALS -
NO WATCHMAN
NO FIRE APPARATUS -
Storage in Cooper Shop 2nd Vacant 3rd
Lime Storage 1st
Plaster Mill
PENNSYLVANIA R. R. (FREIGHT)
Offices 2nd
12" WALLS WITH 4" PILASTERS SPACED 12' APART
PENNSYLVANIA R. R. FREIGHT HOUSE
Pennsylvania R. R. Freight House
STILES ST.
RIVER
24" W. Pipe
6" W. Pipe
4" W. Pipe
CHERRY ST.
66'
TH
COAL STREET POWER STATION
Engine & Dynamo Room
PUBLIC SERVICE CORPORATION OF NEW JERSEY
COAL
CITY DOCK STATION
16 U S AND UNDERWRITER EXTINGUISHERS DISTRIBUTED -
10 KILFYRE EXTINGUISHERS DISTRIBUTED -
Rotary Converters and Transformers
Boilers
Fire Proof Construction
Tile Roof on Iron Frame
Storage & Offices (Fire Proof Construction)
Store Ho.
Canal
Lock
Morris
PENN. R. R. (ELEVATED)
RETAINING WALL
PLATFORM
N. CANAL ST.
S. CANAL ST.
Morris Canal
Scale of Feet
0 50 100 150

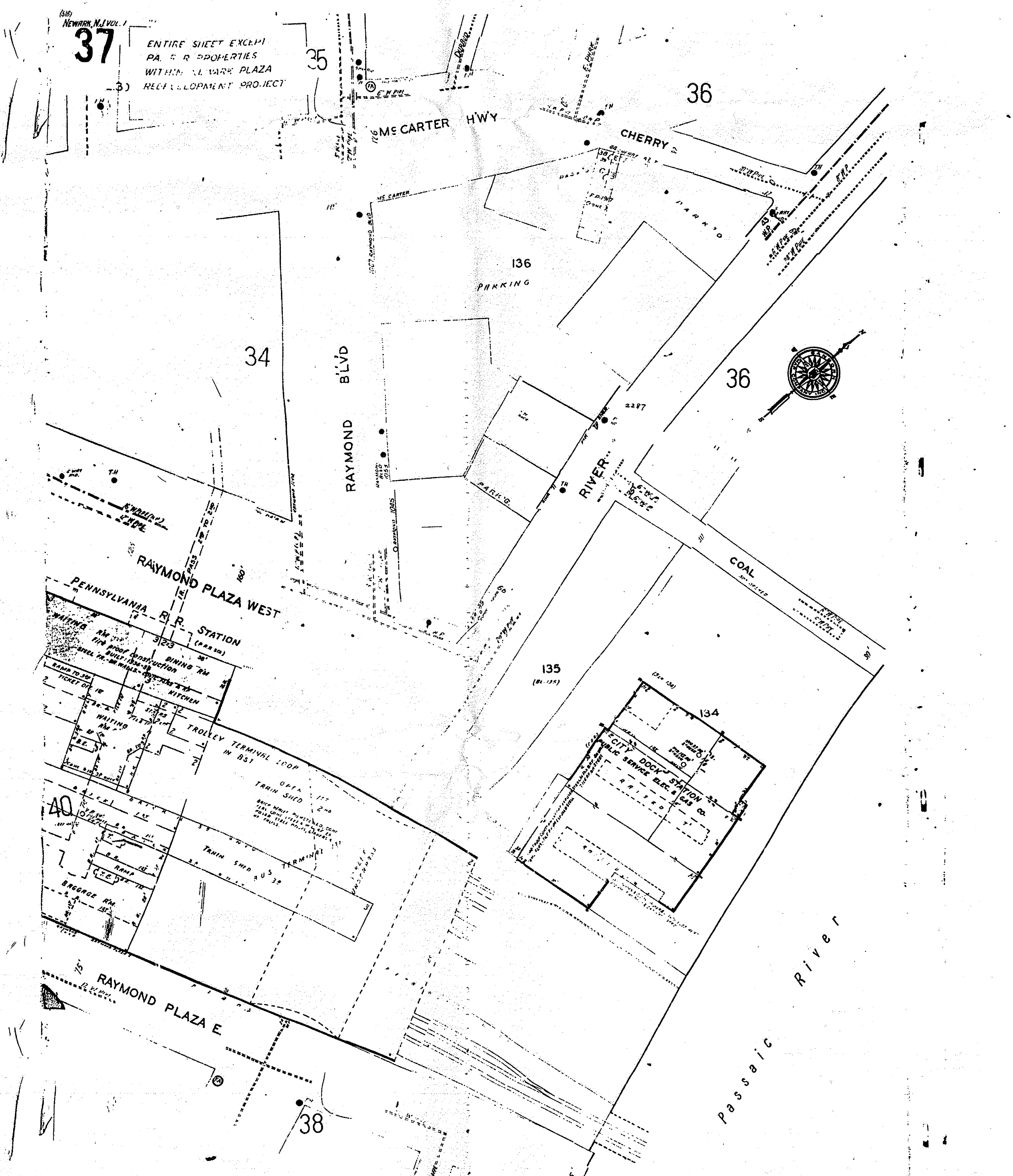

Newark, N.J. Vol. 1
37
(26-9 VOL 3)
35
36
CHERRY
136
150
COMMERCE
34
RAYMOND B'LVD
(S. CANAL)
(N. CANAL)
M. Rugensick
Public Service
RIVER
36
COAL
Pennsylvania R.R. Freight House
135
134
Gypsum & Cement Block Mfg.
City Dock Station
Public Service Corp. of N.J.
Sub Station
RAILROAD PL
COMMERCIAL
38
Passaic River
EDR Sanborn, Inc.
This Sanborn™ map is a certified copy produced by EDR Sanborn, Inc. from its archives. Information on this map is derived from Sanborn field surveys conducted in:
Copyright © 1930 EDR Sanborn, Inc.
Year
EDR Sanborn, Inc. Research Associate
Reproduction in whole or in part of any EDR Sanborn, Inc. map may be prohibited without prior written permission from EDR Sanborn, Inc.


(516)
NEWARK, N.J. VOL.1
36
(9-6 VOL.3)
MULBERRY
CHERRY
E. PARK
CENTRE
OGDEN
RIVER
PASSAIC PL.
STILES
COAL
Passaic River
7
10
35
37
137
128
129
130
131
132
133
HOTEL SAVOY
THE PITTS CO. INC. ROOFING & PAVING
SISTERS OF ST. JOSEPH
ST. JOHNS R.C. CHURCH
PAROCHIAL SCHOOL ROOMS
RECTORY
WM. S. ROE INC. PLUMBERS & FACTORY SUPPLIES
PIPE STORAGE
PIPE CUTTING & AUTO
FREIGHT HOUSE
WM. A. JONES & SON - LUMBER
LUMBER SHED
LUMBER PILES
STORAGE
PENNSYLVANIA R.R.
PENNSYLVANIA R.R. FREIGHT HO.
TRANSPORT CORP.
PUBLIC SERVICE COORDINATED
GARAGE
OFFICE
EDR Sanborn, Inc.
This Sanborn™ map is a certified copy produced by EDR Sanborn, Inc. from its archives. Information on this map is derived from Sanborn field surveys conducted in:
1930
K-S



TIERRA-B-018014



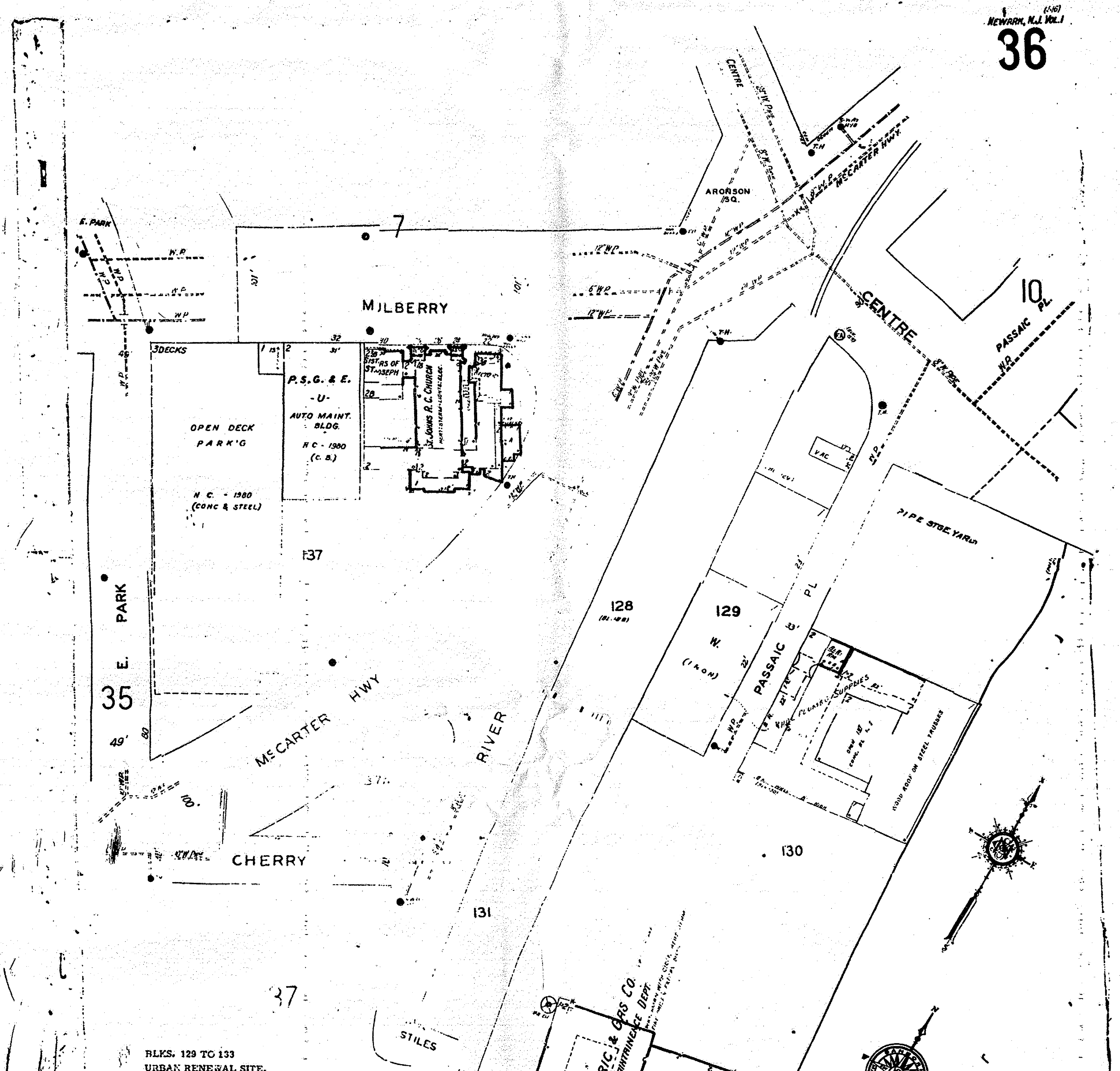


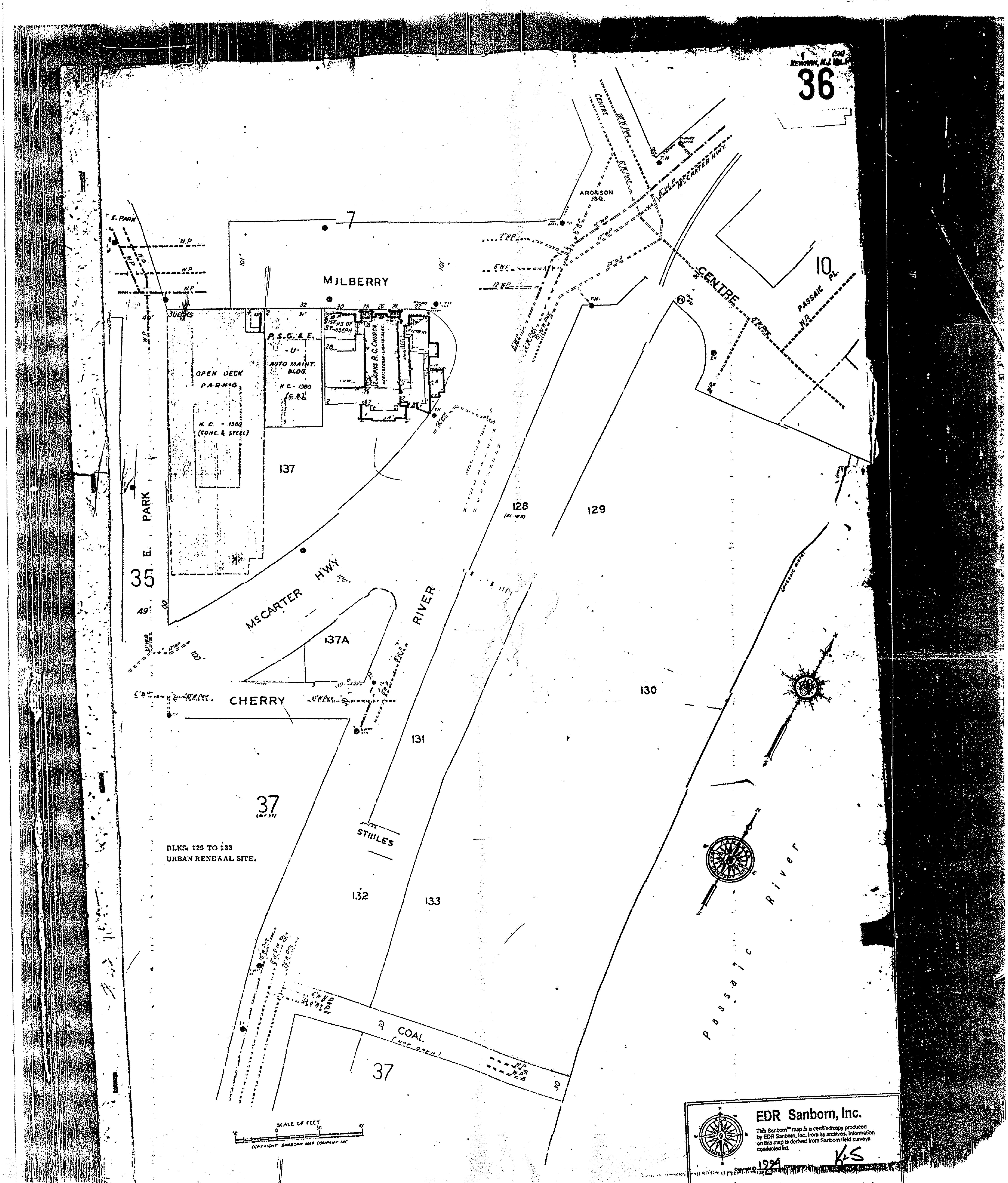
EDR Sanborn, Inc.

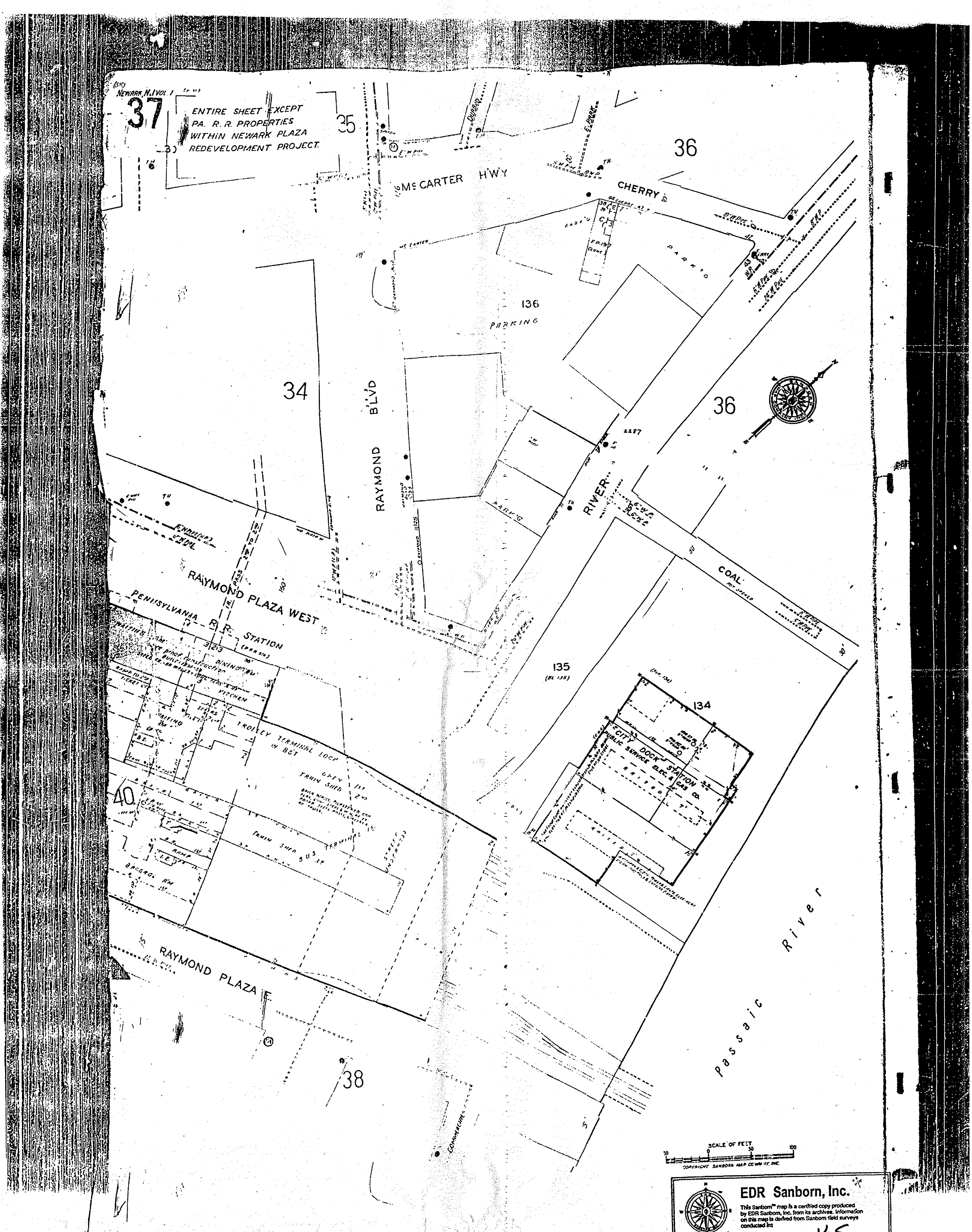
This Sanborn™ map is a certified copy produced by EDR Sanborn, Inc. from its archives. Information on this map is derived from Sanborn field surveys conducted in:

Copyright © 1989 EDR Sanborn, Inc. Year

KLS
EDR Sanborn, Inc. Research Associate







EDR Sanborn, Inc.

This Sanborn™ map is a certified copy produced by EDR Sanborn, Inc. from its archives. Information on this map is derived from Sanborn field surveys conducted in:

GROUND WATER MONITORING REPORT

FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

VOLUME 1 OF 1
TEXT, TABLES AND FIGURES

Submitted by:

PSEG Services Corporation
80 Park Plaza
Newark, New Jersey 07102

Revised September 2001
February 2001

PSEG
Services Corporation

TABLE OF CONTENTS

TABLE OF CONTENTS
(CONTINUED)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Langan Engineering and Environmental Services, Inc. (Langan) has prepared this Ground Water Monitoring Report (GWMR) on behalf of PSEG Services Corporation (PSEG). This GWMR documents the results of a ground water investigation that was conducted at the former Coal Street Generating Station (Site) in response to NJDEP requirements in a letter dated 21 July 1999 (hereafter, Comment Letter). The Comment Letter addressed PSEG's Site Investigation Report (SIR) dated October 1998. The ground water investigation included the installation and sampling of four shallow monitoring wells to characterize ground water quality and to evaluate the need to conduct sediment and surface water investigations adjacent to the Site.

2.0 SITE SETTING AND HISTORY

2.1 Site Description

The Site consists of a rectangular parcel of land encompassing, approximately 6 acres in Newark, Essex County, New Jersey (See Figure 1). The Site is located on Block 130, Lot 1, Block 133, Lots 1 and 12, and Block 134, Lot 10 and is bordered by PSE&G's City Dock Substation on the south, the Passaic River on the east, vacant land on the north, and Newark Legal Center on the west. Access is from McCarter Highway at Center Street.

2.2 Site Geology And Hydrogeology

The soils at the Site are generally fill materials extending to a depth of approximately 8 feet below ground surface (bgs). The fill materials consist of sand, gravel, silt and clay with fragments of brick, coal, concrete, and other miscellaneous debris. Beneath the fill stratum is an approximately 3-foot thick layer of sand with varying amounts of silt and gravel. Underlying the native sand is a gray organic silt layer.

Based on ground water flowing depicted in the SIR, ground water flows east toward the river. The closest body of surface water to the Site is the Passaic River, which borders the Site to the east.

2.3 Background

During the Site investigation conducted in 1998, four ground water samples were collected to evaluate ground water quality at the Site. The ground water samples

were collected from four geoprobe borings, three of which were completed as piezometers. The piezometer locations are shown on Figure 2. The results identified exceedances of several inorganics.

In the Comment Letter regarding the SIR, the NJDEP requested additional ground water sampling using permanent monitoring wells. PSEG responded in a letter dated 3 July 2000 complying with the NJDEP requirements. PSEG proposed installing three monitoring wells near the locations of the existing piezometers. Based on conversations between the NJDEP and PSEG in August 2000 during a meeting onsite with the Case Team, it was agreed that an additional monitoring well would be installed. It was also agreed that the locations of three of the proposed monitoring wells would be relocated downgradient of the former underground storage tanks (See Figure 2), which were removed in 1987. The wells were also located at points greater than 40 feet from the Passaic River to avoid interference with the construction of a new bulkhead by the U.S. Army Corp of Engineers.

3.0 GROUND WATER INVESTIGATION

Based on the screening level ground water investigation conducted during the 1998 Site Investigation, this ground water monitoring investigation was developed to fully characterize the ground water quality and to determine impacts, if any, by former Site operations. All work was conducted in accordance with the NJDEP Field Sampling Procedures Manual (FSPM) May 1992 and N.J.A.C. 7:26E.

CT&E Environmental Services, Inc. of West Creek, New Jersey, a licensed NJ well driller, installed the monitoring wells. B2A/Survsat of Belle Mead, New Jersey, provided surveying services. B2A/Survsat is a New Jersey-licensed surveyor. Accredited laboratories, Inc. (Accredited) of Carteret, New Jersey conducted all analytical laboratory analyses. Accredited's NJDEP certification number is 12007.

3.1 Monitoring Well Installation

Four monitoring wells, MW-5S, MW-6S, MW-7S, and MW-8S, were installed on 29 and 30 August 2000 as shown on Figure 2. The monitoring wells were constructed as follows. Eight-inch diameter borings were drilled to a depth of 12 feet using hollow stem auger (HSA) methods. A 2-inch diameter Schedule 40 PVC casing and 0.020-inch slot PVC well screen were inserted in each borehole. The length of well screen was selected so as to intercept the water table and to account for any water table fluctuations due to tidal influences. The annular

space between the borehole wall and the monitoring well was filled with #1 filter sand and a bentonite/cement seal and grout. Surface "curb box" protective assemblies were cement-grouted into place, and a locking cap was installed on each monitoring well. Drill cuttings were containerized in 55-gallon USDOT-approved steel drums, and subsequently disposed off Site. Waste manifests are provided in Appendix A.

Upon completion, the four monitoring wells were developed with a centrifugal pump until the discharge appeared turbid free or for a period of one hour, whichever occurred first. The monitoring wells were allowed to equilibrate for a minimum two-week period prior to ground water sampling.

The boring logs and well construction summaries for monitoring wells MW-5S, MW-6S, MW-7S, and MW-8S are provided in Appendix B. The Monitoring Well Record, provided by the driller, and Form B, provided by the surveyor, for each monitoring well are also provided in Appendix B.

3.2 Synoptic Water Levels

Synoptic ground water level measurements were collected from monitoring wells and piezometers to further define ground water flow characteristics at the Site. Measurements from monitoring wells were made on 18 September 2000, and measurements from all monitoring wells and piezometers were made on 16 November 2000 and 19 December 2000.

3.3 Ground Water Sampling

Ground water samples were collected from monitoring wells MW-5S, MW-6S, MW-7S, and MW-8S on 18 September 2000. The monitoring wells were sampled in accordance with NJDEP Guidance and the EPA Region II Low Stress Ground Water Sampling SOP, dated 16 March 1998. Bladder pumps were used for purging and sampling, and the pump intake depth was set 1.5 to 2 feet above the bottom of the well.

Each monitoring well was purged until the field parameters of pH, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), and temperature had stabilized or for a maximum of three hours, whichever occurred first. Purging occurred at a rate no greater than 200 mL/min. Low flow field parameters are presented in Appendix C. Ground water samples collected on 18 September 2000 were analyzed for Target Compound List (TCL) Volatile Organic

Compounds (VOCs) plus a 10-compound forward library search (+10), Semivolatile Organic Compounds (SVOCs) plus a 25-compound forward library search (+25), Target Analyte List (TAL) inorganics, pesticides, PCBs, total dissolved solids (TDS), and chloride, as indicated in Table 1. One ground water sample was collected from MW-8S on 19 December 2000 to confirm cadmium detected in the 18 September 2000 sample. See Section 4.2 for further discussion.

3.4 Quality Assurance/Quality Control

The following sections outline the field and laboratory quality assurance/ quality control measures that were incorporated into this investigation.

3.4.1 Equipment Decontamination

In accordance with the applicable procedures provided in NJDEP's FSPM, all sampling equipment was decontaminated prior to use to prevent cross-contamination that could result in inaccuracies in the sample analytical results.

All heavy equipment that came in contact with subsurface soil or ground water, such as downhole drilling equipment, was steam-cleaned and/or manually scrubbed with non-phosphate detergent and water to remove all soil residue before moving the equipment to a new location. All sampling equipment, such as bladder pumps, spatulas and trowels, were laboratory-decontaminated prior to use as follows: 1) a laboratory-grade glassware detergent plus a tap water wash; 2) generous tap water rinse; 3) distilled and deionized (ASTM Type II) water rinse; 4) 10% nitric acid rinse; 5) distilled and deionized (ASTM Type II) water rinse; 6) acetone (pesticide-grade) rinse; 7) total air dry or pure nitrogen blow out; and, 8) distilled and deionized (ASTM Type II) water rinse.

All decontamination water was discharged to the ground surface since there was no evidence of contamination (i.e., no organic vapors, sheens, or odors).

3.4.2 Trip Blanks and Field Blanks

Field quality assurance/quality control was accomplished through the collection of a trip blank or field blank. A trip blank, consisting of analyte-

free water prepared by the analytical laboratory accompanied ground water samples at a rate of one per shipment. The trip blank accompanying ground water samples was analyzed for TCL VOC+10. The trip blank water arrived on-Site within one day of preparation in the laboratory, remained on Site for no longer than one day, and arrived back in the laboratory within one day of shipment from the field. A field blank, consisting of analyte-free water provided by the analytical laboratory passed through the bladder pump tubing, accompanied the 19 December 2000 sample. Both quality assurance blanks were stored at 4°C on-Site and during shipment.

3.4.3 Sample Preservation

Sample integrity was preserved with the addition of appropriate chemical preservatives and by cooling the samples to 4°C immediately after collection and during their transportation to the laboratory. Chemical additives necessary for sample preservation were added to the sample containers by the analytical laboratory prior to sample container delivery to the Site. The preservatives used are provided in Table 1.

3.4.4 Laboratory Quality Assurance/Quality Control

The laboratory quality assurance/quality control measures, analytical methodologies, and holding times are documented in Table 1. Analyses for all parameters were performed using the most current USEPA 100, 200, 300, 600, and 8000 series methods, as indicated in Table 1.

3.4.5 Documentation

Chain-of-Custody was maintained throughout the sampling program. The chain-of-custody documentation accompanied all samples from the laboratory to the field and back to the laboratory. Each sample was assigned a unique number that was recorded in a field log book and on the chain-of-custody form.

4.0 FINDINGS AND RECOMMENDATIONS

4.1 Ground Water Flow Direction

The results of the synoptic ground water level measurements are presented in Table 2. Ground water flows in an easterly direction toward the Passaic River. Ground water contour maps for the16 November 2000 and 19 December 2000 events are presented on Figures 3 and 4, respectively.

4.2 Ground Water Analytical Results

Ground water samples were analyzed for the parameters listed in Table 1. The field parameters pH, specific conductance, DO, ORP, and temperature, as well as ground water levels, were measured by Langan sampling personnel and are presented in Appendix C. Accredited performed the remaining analyses. The analytical results for the ground water sampling event are summarized in Tables 3A through 3D and on Figure 4. A complete set of laboratory data deliverables is provided in Appendix D.

The VOC methylene chloride, a common laboratory contaminant, was detected in all four ground water samples and the trip blank collected on 18 September 2000, at concentrations exceeding the NJDEP GWQS. Methylene chloride was also detected in the laboratory method blank at similar concentrations to the ground water samples and trip blank, thus negating their presence in the samples. No SVOCs, PCBs, or pesticides were detected in any of the samples at concentrations exceeding the NJDEP GWQS. The data were validated by The Zebron Group, Inc. of Yorktown Heights, New York. No deficiencies were detected that affect the usability of the data (See Appendix E).

Several inorganics were detected in samples from each of the four wells at concentrations exceeding the NJDEP GWQS. Monitoring well MW-5S contained exceedances of iron (3,470 ug/L), manganese (1,130 ug/L), and TDS (515 mg/L). Monitoring well MW-6S contained exceedances of aluminum (802 ug/L), iron (1,070 ug/L), and manganese (439 ug/L). Monitoring well MW-7S contained exceedances of aluminum (244 ug/L), iron (15,400 ug/L), manganese (4,980 ug/L), and TDS (606 mg/L). Monitoring well MW-8S contained exceedances of cadmium (11.6 ug/L), iron (14,100 ug/L), manganese (883 ug/L), and TDS (829 mg/L). The aluminum, iron, manganese, and TDS are attributable to background ground water conditions including the brackish water environment of the Passaic River flood plain, and not to former Site operations. Cadmium was detected in

monitoring well MW-8S at 11.6 ug/L. Its GWQS is 4 ug/L. Since past soil sampling indicates only trace levels (i.e., 3 ppm to 8.2 ppm) of cadmium in the vicinity of an area of concern (i.e., the former Paint Shop – See Figure 2), the initial cadmium exceedance of its GWQS was viewed with suspicion and another sample was collected in December 2000. Cadmium was detected at 9.05 ug/L. A review of the ground water data indicates delineation of the cadmium.

PSEG recommends no further investigation and proposes no Classification Exception area (CEA) for the ground water since:

1. Natural ground water quality on Site is diminished by total dissolved solids (TDS), which was detected at levels exceeding its GWQS. Natural river development (i.e., scour and deposition) resulted in an incursion of brackish water into the local aquifers as indicated by the elevated TDS, and high levels of sodium and chloride. The local ground water aquifers are not suitable for potable use;
2. The only ground water constituent of concern (i.e., cadmium) is delineated on Site; and,
3. Only trace levels of cadmium were detected in soils at the former Paint Shop (i.e., the likely source).

A request for variance from the Technical Requirements for Site Remediation (i.e., N.J.A.C. 7:26E) regarding a CEA is provided in Appendix F.

5.0 FINAL BASELINE ECOLOGICAL EVALUATION

The Baseline Ecological Evaluation was based on Site investigation sample results and a Site inspection by a person experienced in the use of techniques and methodologies for conducting ecological risk assessments. Contaminants of potential ecological concern (COPECs) were tentatively identified in ground water samples collected for initial screening purposes in June 1998. The following COPECs were detected: arsenic, barium, beryllium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, vanadium, and zinc. Four ground water monitoring wells were installed and sampled to better characterize ground water quality, particularly with respect to the metals that comprise the tentative list of COPECs.

The Passaic River is adjacent to the Site and would be considered as an environmentally sensitive natural resource. By definition, ground water would also be considered as an environmentally sensitive natural resource.

The potential migration pathway from soil to ground water would be the leaching of contaminants from soil. No exceedances of the Impact to Ground Water Soil Cleanup Criteria were identified during the SI (these criteria apply to organic compounds in soil only and do not include metals). Furthermore, no organic compounds were detected in ground water during the SI, thereby confirming the absence of impacts to the ground water from organics in soil. Therefore, this potential pathway is incomplete and will not be considered further.

- The potential contaminant migration pathways to the Passaic River would be surface runoff and ground water discharge. Surface runoff would not be a mechanism for the transport of contaminants because the Site is presently covered with 6 to 12 inches of gravel or vegetated topsoil. Ground water would be a potential migration pathway to the Passaic River. Although ground water flow is tidally influenced along this stretch of the Passaic River, it flows in the direction of the River at least during low tide. Based on the ground water analytical data collected to date, the Site ground water does not adversely impact off-Site and/or deep receptors (i.e., the Passaic River and deeper water-bearing units). Therefore, since there is no adverse impact to the shallow ground water, this pathway is incomplete and will not be considered further.

In conclusion, based on the results of investigations completed at the Site and the criteria established for conducting Baseline Ecological Evaluations in the Technical Requirements for Site Remediation (N.J.A.C. 7:26E), there are no completed pathways at the Site. Therefore no further ecological evaluation is warranted.

TABLE 1
GROUND WATER SAMPLING PROGRAM AND QUALITY ASSURANCE REQUIREMENTS
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

Sampling Program

Sample Location	Sample Number	Laboratory Sample Number	Sample Date	Analytical Parameters
MW-5S	001	200011478	9/18/00	TCL VOC+10,TCL SVOC+25,Pesticides, PCBs,Metals,Cyanide,TDS,Chloride
MW-6S	002	200011479	9/18/00	TCL VOC+10,TCL SVOC+25,Pesticides, PCBs,Metals,Cyanide,TDS,Chloride
MW-7S	003	200011480	9/18/00	TCL VOC+10,TCL SVOC+25,Pesticides, PCBs,Metals,Cyanide,TDS,Chloride
MW-8S	004	200011481	9/18/00	TCL VOC+10,TCL SVOC+25,Pesticides, PCBs,Metals,Cyanide,TDS,Chloride
Trip Blank	005	200011482	9/18/00	TCL VOC+10
MW-8S	006	200015124	12/19/00	Cadmium
Field Blank	007	200015125	12/19/00	Cadmium

Analytical Requirements

Parameter	Methodology	Container	Minimum Sample	Preservation	Holding Time[4]
TCL VOC+10	SW-846 8240B	4 - 40 mL Glass 2 - 1000 mL	3 - 40 mL	Cool 4°C; HCl; pH<2	7 days, 14 days preserved[1]
TCL SVOC+25	SW-846 8270D	Amber Glass 1 - 1000 mL	1000 mL	Cool 4°C	7 days[2]
PCBs	SW-846 8082A	Glass 1 - 1000 mL	500 mL	Cool 4°C	7 days[2]
Pesticides	SW-846 8081 SW-846	Glass 1 - 1000 mL	500 mL	Cool 4°C	7 days[2]
TAL Metals	6010B/7000 Series SW-846	Plastic 1 - 1000 mL	500 mL	Cool 4°C; HNO_3; pH<2	180 days[3]
Cyanide	9010B/9014	Plastic 1 - 125 mL	500 mL	Cool 4°C; NaOH; pH>12	14 days
TDS	USEPA 160.1	Plastic/Glass 1 - 500 mL	100 mL	Cool 4°C	7 days
Chloride	USEPA 325.3	Plastic	250 mL	Cool 4°C	28 days

NOTES
(1) If preservation is not possible due to foaming, an unpreserved sample will be collected. The hold time will be 7 days for an unpreserved sample.
(2) Seven days for extraction, 40 days for analysis after commencement date of extraction.
(3) Hold time for mercury is 28 days.
(4) Holding time based upon day of sample collection, not verified time of sample receipt.

CLP	Contract Laboratory Program
TCL	CLP Target Compound List, see CLP Statement of Work OLM03.1
TAL	CLP Target Analyte List, see CLP Statement of Work OLM04.0
USEPA	Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, 1979 revised March 1983, 40 CFR 136
VOC+10	Volatile Organic Compounds with a 10-compound forward library search
SVOCs	Semivolatile Organic Compounds with a 25-compound forward library search
PCBs	Polychlorinated Biphenyls
TDS	Total Dissolved Solids

TABLE 2
GROUND WATER ELEVATIONS
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

DATE: 18 SEPTEMBER 2000

Well Number	Casing Elevation (feet, NAVD 88)	Depth to Water from Top of Casing (feet)	Water Elevation (feet, NAVD 88)
MW-5S	8.15	6.10	2.05
MW-6S	5.78	3.72	2.06
MW-7S	6.77	5.21	1.56
MW-8S	6.67	4.61	2.06

DATE: 16 NOVEMBER 2000

Well Number	Casing Elevation (feet, NAVD 88)	Depth to Water from Top of Casing (feet)	Water Elevation (feet, NAVD 88)
GW-1	5.06	4.61	0.45
GW-3	5.51	5.07	0.44
GW-4	8.66	6.78	1.88
MW-5S	8.15	6.48	1.67
MW-6S	5.78	3.86	1.92
MW-7S	6.77	5.56	1.21
MW-8S	6.67	4.92	1.75

DATE: 19 DECEMBER 2000

Well Number	Casing Elevation (feet, NAVD 88)	Depth to Water from Top of Casing (feet)	Water Elevation (feet, NAVD 88)
GW-1	5.06	4.34	0.72
GW-3	5.51	4.77	0.74
GW-4	8.66	4.92	3.74
MW-5S	8.15	6.01	2.14
MW-6S	5.78	3.42	2.36
MW-7S	6.77	5.14	1.63
MW-8S	6.67	4.47	2.20

TABLE 3A
GROUND WATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

Sample Location:	NJDEP	MW-5S			MW-6S			MW-7S			MW-8S			TB		
Sample Number:	Higher of	001			002			003			004			005		
Laboratory Sample Number:	Ground Water	200011478			200011479			200011480			200011481			200011482		
Matrix:	Quality Class IIA	Aqueous			Aqueous			Aqueous			Aqueous			Aqueous		
Date Collected:	Criteria and Pactical	09/18/2000			09/18/2000			09/18/2000			09/18/2000			09/18/2000		
Dilution Factor:	Quantitation Levels	1			1			1			1			1		
Units:	ug/L	ug/L			ug/L			ug/L			ug/L			ug/L		
Analyte		Result	MDL	Q	Result	MDL	Q	Result	MDL	Q	Result	MDL	Q	Result	MDL	Q
Acrolein	NA	U	25		U	25		U	25		U	25		U	25	
Acrylonitrile	50	U	25		U	25		U	25		U	25		U	25	
Dichlorodifluoromethane	NA	U	5		U	5		U	5		U	5		U	5	
Chloromethane	NA	U	5		U	5		U	5		U	5		U	5	
Vinyl Chloride	5	U	5		U	5		U	5		U	5		U	5	
Bromomethane	NA	U	5		U	5		U	5		U	5		U	5	
Chloroethane	NA	U	5		U	5		U	5		U	5		U	5	
Trichlorofluoromethane	NA	U	5		U	5		U	5		U	5		U	5	
1,1-Dichloroethene	2	U	5		U	5		U	5		U	5		U	5	
Methylene Chloride	3*	4	5	JB	5	5	JB	4	5	JB	5	5	JB	11	5	B
trans-1,2-Dichloroethene	100	U	5		U	5		U	5		U	5		U	5	
1,1-Dichloroethane	70	U	5		U	5		U	5		U	5		U	5	
2,2-Dichloropropane	NA	U	5		U	5		U	5		U	5		U	5	
cis-1,2-Dichloroethene	70*	U	5		U	5		U	5		U	5		U	5	
Chloroform	6	U	5		U	5		U	5		U	5		U	5	
Bromochloromethane	NA	U	5		U	5		U	5		U	5		U	5	
1,1,1-Trichloroethane	30	U	5		U	5		U	5		U	5		U	5	
1,1-Dichloropropene	NA	U	5		U	5		U	5		U	5		U	5	
Carbon Tetrachloride	2	U	5		U	5		U	5		U	5		U	5	
1,2-Dichloroethane	2	U	5		U	5		U	5		U	5		U	5	
Benzene	1	U	5		U	5		U	5		U	5		U	5	
Trichloroethene	NA	U	5		U	5		U	5		U	5		U	5	
1,2-Dichloropropane	1	U	5		U	5		U	5		U	5		U	5	
Bromodichloromethane	1	U	5		U	5		U	5		U	5		U	5	
Dibromomethane	NA	U	5		U	5		U	5		U	5		U	5	
cis-1,3-dichloropropene	NA	U	5		U	5		U	5		U	5		U	5	
Toluene	1,000	U	5		U	5		U	5		U	5		U	5	
trans-1,3-Dichloropropene	NA	U	5		U	5		U	5		U	5		U	5	
1,1,2-Trichloroethane	3	U	5		U	5		U	5		U	5		U	5	
1,3-dichloropropane	NA	U	5		U	5		U	5		U	5		U	5	
Tetrachloroethene	1	U	5		U	5		U	5		U	5		U	5	
Dibromochloromethane	10	U	5		U	5		U	5		U	5		U	5	
1,2-Dibromoethane	NA	U	5		U	5		U	5		U	5		U	5	
Ethylbenzene	700	U	5		U	5		U	5		U	5		U	5	
Chlorobenzene	50*	U	5		U	5		U	5		U	5		U	5	
1,1,1,2-Tetrachloroethane	10	U	5		U	5		U	5		U	5		U	5	
m,p-Xylene	NA	U	10		U	10		U	10		U	10		U	10	
Styrene	100	U	5		U	5		U	5		U	5		U	5	

TABLE 3A
GROUND WATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

Sample Location:	NJDEP	MW-5S			MW-6S			MW-7S			MW-8S			TB		
Sample Number:	Higher of	001			002			003			004			005		
Laboratory Sample Number:	Ground Water	200011478			200011479			200011480			200011481			200011482		
Matrix:	Quality Class IIA	Aqueous			Aqueous			Aqueous			Aqueous			Aqueous		
Date Collected:	Criteria and Pactical	09/18/2000			09/18/2000			09/18/2000			09/18/2000			09/18/2000		
Dilution Factor:	Quantitation Levels	1			1			1			1			1		
Units:	ug/L	ug/L			ug/L			ug/L			ug/L			ug/L		
Analyte		Result	MDL	Q	Result	MDL	Q	Result	MDL	Q	Result	MDL	Q	Result	MDL	Q
Isopropylbenzene	NA	U	5		U	5		U	5		U	5		U	5	
Bromoform	4	U	5		U	5		U	5		U	5		U	5	
1,1,2,2-Tetrachloroethane	2	U	5		U	5		U	5		U	5		U	5	
1,2,3-Trichloropropane	NA	U	5		U	5		U	5		U	5		U	5	
n-Propyl benzene	NA	U	5		U	5		U	5		U	5		U	5	
Bromobenzene	NA	U	5		U	5		U	5		U	5		U	5	
1,3,5-Trimethylbenzene	NA	U	5		U	5		U	5		U	5		U	5	
2-Chlorotoluene	NA	U	5		U	5		U	5		U	5		U	5	
4-Chlorotoluene	NA	U	5		U	5		U	5		U	5		U	5	
tert-Butylbenzene	NA	U	5		U	5		U	5		U	5		U	5	
1,2,4-Trimethylbenzene	NA	U	5		U	5		U	5		U	5		U	5	
sec-Butylbenzene	NA	U	5		U	5		U	5		U	5		U	5	
p-Isopropyltoluene	NA	U	5		U	5		U	5		U	5		U	5	
1,3-Dichlorobenzene	600	U	5		U	5		U	5		U	5		U	5	
1,4-Dichlorobenzene	75	U	5		U	5		U	5		U	5		U	5	
n-Butylbenzene	NA	U	5		U	5		U	5		U	5		U	5	
1,2-Dichlorobenzene	600	U	5		U	5		U	5		U	5		U	5	
1,2-Dibromo-3-Chloropropane	NA	U	5		U	5		U	5		U	5		U	5	
1,2,4-Trichlorobenzene	9	U	5		U	5		U	5		U	5		U	5	
Hexachlorobutadiene	1	U	5		U	5		U	5		U	5		U	5	
Naphthalene	NA	U	5		U	5		U	5		U	5		U	5	
1,2,3-Trichlorobenzene	NA	2	5	J	U	5		U	5		U	5		U	5	
o-Xylene	NA	U	5		U	5		U	5		U	5		U	5	
Carbon disulfide	NA	U	5		U	5		U	5		U	5		U	5	
2-Chloroethylvinylether	NA	U	5		U	5		U	5		U	5		U	5	
Acetone	700	U	5		U	5		U	5		U	5		U	5	
Vinyl acetate	NA	U	5		U	5		U	5		U	5		U	5	
2-Butanone	NA	U	5		U	5		U	5		U	5		U	5	
4-Methyl-2-pentanone	400	U	5		U	5		U	5		U	5		U	5	
2-Hexanone	NA	U	5		U	5		U	5		U	5		U	5	
Tentatively Identified Compounds	NA	U			U			U			U			U		

NOTES
B - Indicates compound found in associated blank.
J - Indicates compound concentration found below MDL (Method Detection Limit)
U - Indicates compound analyzed for but not found.
NA - No applicable standard
* Interim specific criteria.
Bolded and boxed results exceed NJDEP Ground Water Quality Standard.

TABLE 3B
GROUND WATER ANALYTICAL RESULTS - SEMIVOLATILE ORGANIC COMPOUNDS
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

Sample Location:	NJDEP	MW-5S			MW-6S			MW-7S			MW-8S		
Sample Number:	Higher of	001			002			003			004		
Laboratory Sample Number:	Ground Water	200011478			200011479			200011480			200011481		
Matrix:	Quality Class IIA	Aqueous			Aqueous			Aqueous			Aqueous		
Date Collected:	Criteria and Pactical	09/18/2000			09/18/2000			09/18/2000			09/18/2000		
Dilution Factor:	Quantitation Levels	1			1			1			1		
Units:	ug/L	ug/L			ug/L			ug/L			ug/L		
Analyte		Result	MDL	Q	Result	MDL	Q	Result	MDL	Q	Result	MDL	Q
Acenaphthene	400	U	10		U	10		U	10		U	10	
Acenaphthylene	NA	U	10		U	10		U	10		U	10	
Anthracene	2,000	U	10		U	10		U	10		U	10	
Benzo(a)Anthracene	NA	U	10		U	10		U	10		U	10	
Benzo(a)Pyrene	NA	U	10		U	10		U	10		U	10	
Benzo(b)fluoranthene	NA	U	10		U	10		U	10		U	10	
Benzo(g,h,i)Perylene	NA	U	10		U	10		U	10		U	10	
Benzo(k)Fluoranthene	NA	U	10		U	10		U	10		U	10	
Benzoic Acid	NA	U	50		U	50		U	50		U	50	
Benzyl Alcohol	2,000	U	10		U	10		U	10		U	10	
bis(-2-Chloroethyl)Ether	10	U	10		U	10		U	10		U	10	
bis(2-Chloroisopropyl)ether	300	U	10		U	10		U	10		U	10	
Bis(2-Ethylhexyl)Phthalate	100	U	10		U	10		U	10		U	10	
bis(-2-Chloroethoxy)Methane	NA	U	10		U	10		U	10		U	10	
4 Bromophenyl-phenylether	NA	U	10		U	10		U	10		U	10	
Butylbenzylphthalate	100	U	10		U	10		U	10		U	10	
4 Chloroaniline	NA	U	10		U	10		U	10		U	10	
2-Chloronaphthalene	NA	U	10		U	10		U	10		U	10	
4-Chloro-3-methylphenol	NA	U	10		U	10		U	10		U	10	
2-Chlorophenol	40	U	10		U	10		U	10		U	10	
4-Chlorophenyl-phenylether	NA	U	10		U	10		U	10		U	10	
Chrysene	NA	U	10		U	10		U	10		U	10	
Dibenzo(a,h)Anthracene	NA	U	10		U	10		U	10		U	10	
Dibenzofuran	NA	U	10		U	10		U	10		U	10	
1,2-Dichlorobenzene	600	U	10		U	10		U	10		U	10	
1,3-Dichlorobenzene	600	U	10		U	10		U	10		U	10	
1,4-Dichlorobenzene	75	U	10		U	10		U	10		U	10	
3,3'-Dichlorobenzidine	60	U	10		U	10		U	10		U	10	
2,4-Dichlorophenol	20	U	10		U	10		U	10		U	10	
Diethylphthalate	5,000	U	10		U	10		U	10		U	10	
2,4-Dimethylphenol	100	U	10		U	10		U	10		U	10	
Dimethyl Phthalate	NA	U	10		U	10		U	10		U	10	
Di-n-Butylphthalate	900	U	10		U	10		U	10		U	10	
4,6-Dinitro-2-methylphenol	NA	U	10		U	10		U	10		U	10	
2,4-Dinitrophenol	40	U	10		U	10		U	10		U	10	
2,4-Dinitrotoluene	NA	U	10		U	10		U	10		U	10	

TABLE 3B
GROUND WATER ANALYTICAL RESULTS - SEMIVOLATILE ORGANIC COMPOUNDS
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

Sample Location:	NJDEP	MW-5S			MW-6S			MW-7S			MW-8S		
Sample Number:	Higher of	001			002			003			004		
Laboratory Sample Number:	Ground Water	200011478			200011479			200011480			200011481		
Matrix:	Quality Class IIA	Aqueous			Aqueous			Aqueous			Aqueous		
Date Collected:	Criteria and Pactical	09/18/2000			09/18/2000			09/18/2000			09/18/2000		
Dilution Factor:	Quantitation Levels	1			1			1			1		
Units:	ug/L	ug/L			ug/L			ug/L			ug/L		
Analyte		Result	MDL	Q	Result	MDL	Q	Result	MDL	Q	Result	MDL	Q
2,6-Dinitrotoluene	NA	U	10		U	10		U	10		U	10	
Di-n-octyl phthalate	100	U	10		U	10		U	10		U	10	
Fluoranthene	300	U	10		U	10		U	10		U	10	
Fluorene	300	U	10		U	10		U	10		U	10	
Hexachlorobenzene	10	U	10		U	10		U	10		U	10	
Hexachlorobutadiene	1	U	10		U	10		U	10		U	10	
Hexachlorocyclopentadiene	50	U	10		U	10		U	10		U	10	
Hexachloroethane	10	U	10		U	10		U	10		U	10	
Indeno(1,2,3-cd)Pyrene	NA	U	10		U	10		U	10		U	10	
Isophorone	100	U	10		U	10		U	10		U	10	
2-Methylnaphthalene	NA	U	10		U	10		U	10		U	10	
2-Methylphenol	NA	U	10		U	10		U	10		U	10	
3&4-Methylphenol	NA	U	10		U	10		U	10		U	10	
Naphthalene	300*	U	10		U	10		U	10		U	10	
2-Nitroaniline	NA	U	10		U	10		U	10		U	10	
3-Nitroaniline	NA	U	10		U	10		U	10		U	10	
4-Nitroaniline	NA	U	10		U	10		U	10		U	10	
Nitrobenzene	10	U	10		U	10		U	10		U	10	
2-Nitrophenol	NA	U	10		U	10		U	10		U	10	
4-Nitrophenol	NA	U	10		U	10		U	10		U	10	
N-Nitrosodimethylamine	20	U	10		U	10		U	10		U	10	
N-Nitrosodiphenylamine	20	U	10		U	10		U	10		U	10	
N-Nitroso-Di-n-propylamine	20	U	10		U	10		U	10		U	10	
Pentachlorophenol	1	U	10		U	10		U	10		U	10	
Phenanthrene	NA	U	10		U	10		U	10		U	10	
Phenol	4,000	U	10		U	10		U	10		U	10	
Pyrene	200	U	10		U	10		U	10		U	10	
1,2,4-Trichlorobenzene	9	U	10		U	10		U	10		U	10	
2,4,5-Trichlorophenol	700	U	10		U	10		U	10		U	10	
2,4,6-Trichlorophenol	20	U	10		U	10		U	10		U	10	
Tentatively Identified Compounds	NA	362			166			236			138		

NOTES
U - Indicates compound analyzed for but not found.
NA - No applicable standard
* - Interim Specific Criteria

TABLE 3C
GROUND WATER ANALYTICAL RESULTS - PESTICIDES AND PCBs
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

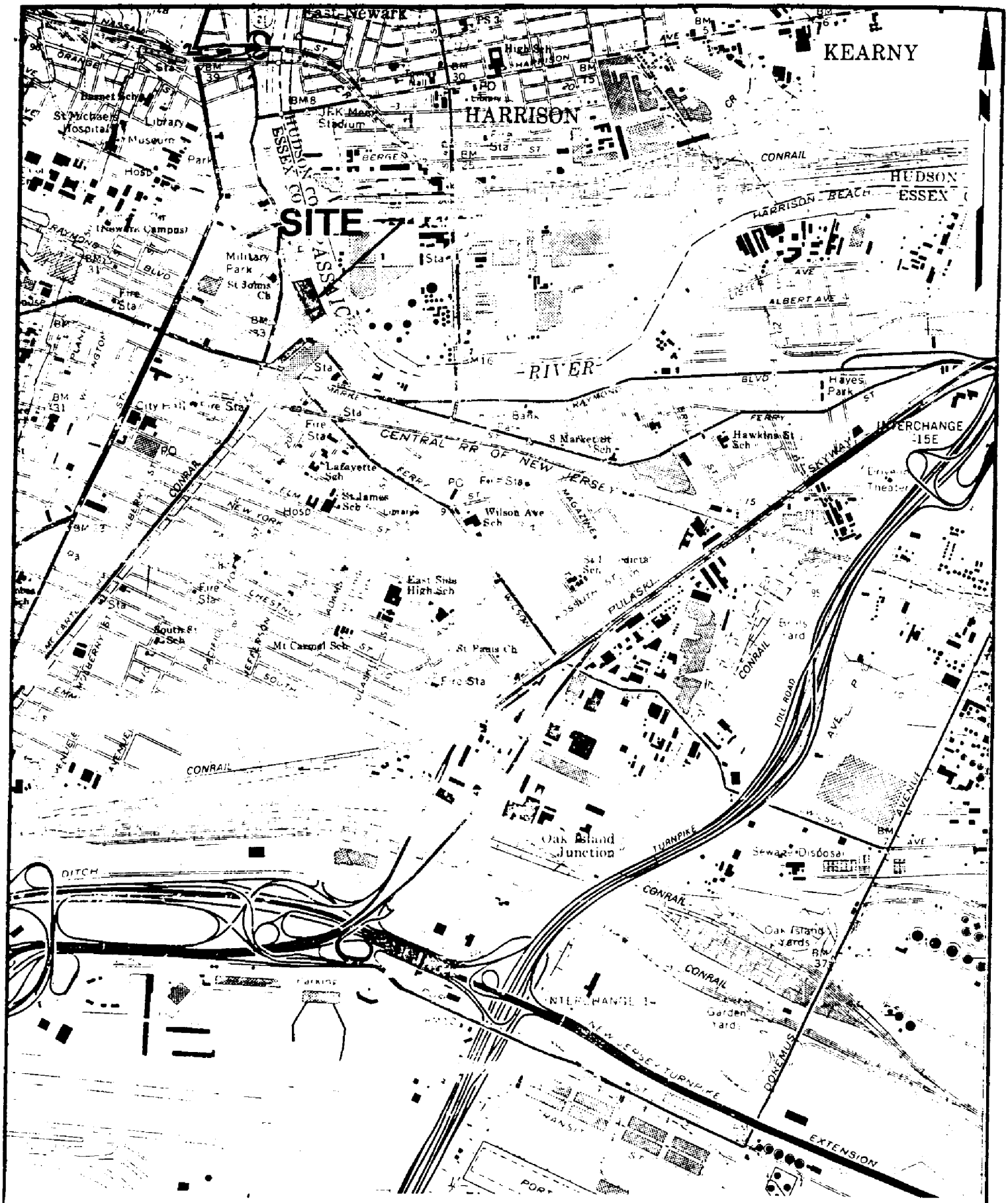
Sample Location:	NJDEP	MW-5S			MW-6S			MW-7S			MW-8S		
Sample Number:	Higher of	001			002			003			004		
Laboratory Sample Number:	Ground Water	200011478			200011479			200011480			200011481		
Matrix:	Quality Class IIA	Aqueous			Aqueous			Aqueous			Aqueous		
Date Collected:	Criteria and Pactical	09/18/2000			09/18/2000			09/18/2000			09/18/2000		
Dilution Factor:	Quantitation Levels	1			1			1			1		
Units:	ug/L	ug/L			ug/L			ug/L			ug/L		
Analyte		Result	MDL	Q	Result	MDL	Q	Result	MDL	Q	Result	MDL	Q
A-BHC	NA	U	0.020		U	0.020		U	0.020		U	0.020	
B-BHC	NA	U	0.020		U	0.020		U	0.020		U	0.020	
G-BHC (Lindane)	NA	U	0.020		U	0.020		U	0.020		U	0.020	
D-BHC	NA	U	0.020		U	0.020		U	0.020		U	0.020	
Heptachlor	0.4	U	0.020		U	0.020		U	0.020		U	0.020	
Aldrin	0.04	U	0.020		U	0.020		U	0.020		U	0.020	
Heptachlor Epoxide	NA	U	0.020		U	0.020		U	0.020		U	0.020	
Endosulfan I	0.4	U	0.020		U	0.020		U	0.020		U	0.020	
A-Chlordane	0.5	U	0.020		U	0.020		U	0.020		U	0.020	
G-chlordane	0.5	U	0.020		U	0.020		U	0.020		U	0.020	
Dieldrin	NA	U	0.040		U	0.040		U	0.040		U	0.040	
4,4'-DDE	0.1	U	0.040		U	0.040		U	0.040		U	0.040	
Endrin	2	U	0.040		U	0.040		U	0.040		U	0.040	
Endosulfan II	0.4	U	0.040		U	0.040		U	0.040		U	0.040	
4,4'-DDD	0.1	U	0.040		U	0.040		U	0.040		U	0.040	
Endrin Aldehyde	NA	U	0.040		U	0.040		U	0.040		U	0.040	
Endosulfan Sulfate	0.4	U	0.040		U	0.040		U	0.040		U	0.040	
4,4'-DDT	0.1	U	0.040		U	0.040		U	0.040		U	0.040	
Endrin ketone	NA	U	0.040		U	0.040		U	0.040		U	0.040	
Methoxychlor	NA	U	0.200		U	0.200		U	0.200		U	0.200	
Toxaphene	3	U	1.00		U	1.00		U	1.00		U	1.00	
Aroclor-1016	NA	U	0.500		U	0.500		U	0.500		U	0.500	
Aroclor-1221	NA	U	0.500		U	0.500		U	0.500		U	0.500	
Aroclor-1232	NA	U	0.500		U	0.500		U	0.500		U	0.500	
Aroclor-1242	NA	U	0.500		U	0.500		U	0.500		U	0.500	
Aroclor-1248	NA	U	0.500		U	0.500		U	0.500		U	0.500	
Aroclor-1254	NA	U	0.500		U	0.500		U	0.500		U	0.500	
Aroclor-1260	NA	U	0.500		U	0.500		U	0.500		U	0.500	

NOTES
NA - No applicable standard
U - Indicates compound analyzed for but not found.

TABLE 3D
GROUND WATER ANALYTICAL RESULTS - INORGANICS
FORMER COAL STREET GENERATING STATION
NEWARK, NEW JERSEY

Sample Location:	NJDEP Higher of	MW-5S			MW-6S			MW-7S			MW-8S			MW-8S			FB		
Sample Number:	Ground Water	001			002			003			004			006			007		
Laboratory Sample Number:	Quality Class IIA	200011478			200011479			200011480			200011481			200015124			200015125		
Matrix:	Criteria and	Aqueous			Aqueous			Aqueous			Aqueous			Aqueous			Aqueous		
Date Collected:	Practical Levels	9/18/00			9/18/00			9/18/00			9/18/00			12/18/00			12/18/00		
Units:	ug/L	ug/L			ug/L			ug/L			ug/L			ug/L			ug/L		
Analyte		Result	MDL	DF	Result	MDL	DF	Result	MDL	DF	Result	MDL	DF	Result	MDL	DF	Result	MDL	DF
Aluminum	200	ND	200	1	**802**	200	1	**244**	200	1	ND	200	1	NA	200	NA	NA	200	NA
Antimony	20	ND	10.0	2	ND	10.0	2	ND	10.0	2	ND	10.0	2	NA	10.0	NA	NA	10.0	NA
Arsenic	8	ND	8.0	2	ND	8.0	2	ND	8.0	2	ND	8.0	2	NA	8.0	NA	NA	8.0	NA
Barium	2,000	192	30.0	1	176	30.0	1	232	30.0	1	107	30.0	1	NA	30.0	NA	NA	30.0	NA
Beryllium	20	ND	5.00	1	ND	5.00	1	ND	5.00	1	5.90	5.00	1	NA	5.00	NA	NA	5.00	NA
Cadmium	4	ND	4.0	1	ND	4.0	1	ND	4.0	1	**11.6**	4.0	1	**9.05**	4.0	1	**ND**	4.0	1
Calcium	NA	121,000	500	1	114,000	500	1	134,000	500	1	193,000	500	1	NA	500	NA	NA	500	NA
Chromium	100	ND	25.0	1	ND	25.0	1	ND	25.0	1	ND	25.0	1	NA	25.0	NA	NA	25.0	NA
Cobalt	NA	ND	30.0	1	ND	30.0	1	ND	30.0	1	ND	30.0	1	NA	30.0	NA	NA	30.0	NA
Copper	1000	ND	25.0	1	ND	25.0	1	ND	25.0	1	ND	25.0	1	NA	25.0	NA	NA	25.0	NA
Iron	300	**3,470**	100	1	**1,070**	100	1	**15,400**	100	1	**14,100**	100	1	NA	100	NA	NA	100	NA
Lead	10	ND	10.0	2	ND	10.0	2	ND	10.0	2	ND	10.0	2	NA	10.0	NA	NA	10.0	NA
Magnesium	NA	16,600	500	1	9,980	500	1	34,200	500	1	21,900	500	1	NA	500	NA	NA	500	NA
Manganese	50	**1,130**	50.0	1	**439**	50.0	1	**4,980**	50.0	1	**883**	50.0	1	NA	50.0	NA	NA	50.0	NA
Mercury	2	ND	0.500	1	ND	0.500	1	ND	0.500	1	ND	0.500	1	NA	0.500	NA	NA	0.500	NA
Nickel	100	ND	50.0	1	ND	50.0	1	ND	50.0	1	ND	50.0	1	NA	50.0	NA	NA	50.0	NA
Potassium	NA	10,800	2,000	1	7,520	2,000	1	20,200	2,000	1	14,900	2,000	1	NA	2,000	NA	NA	2,000	NA
Selenium	50	ND	10.0	2	ND	10.0	2	ND	10.0	2	ND	10.0	2	NA	10.0	NA	NA	10.0	NA
Silver	NA	ND	10.0	1	ND	10.0	1	ND	10.0	1	ND	10.0	1	NA	10.0	NA	NA	10.0	NA
Sodium	50,000	40,200	1,000	1	8,100	1,000	1	47,700	1,000	1	26,800	1,000	1	NA	1,000	NA	NA	1,000	NA
Thallium	10	ND	10.0	2	ND	10.0	2	ND	10.0	2	ND	10.0	2	NA	10.0	NA	NA	10.0	NA
Vanadium	NA	ND	50.0	1	ND	50.0	1	ND	50.0	1	ND	50.0	1	NA	50.0	NA	NA	50.0	NA
Zinc	5,000	ND	200	1	147	200	1	ND	200	1	ND	200	1	NA	200	NA	NA	200	NA
Chloride, Titrimetric	250,000	29,500	1,000	1	7,370	1,000	1	47,000	1,000	1	10,100	1,000	1	NA	1,000	NA	NA	1,000	NA
Cyanide, Total	200,000	ND	10	1	ND	10	1	ND	10	1	ND	10	1	NA	10	NA	NA	10	NA
Solids, Total Dissolved	500,000	**515,000**	2,000	1	393,000	2,000	1	**606,000**	2,000	1	**829,000**	2,000	1	NA	2,000	NA	NA	2,000	NA

Note:
ND = Element analyzed for but not detected.
NA = Not Analyzed
DF = Dilution Factor
Bolded and boxed results exceed the NJDEP Ground Water Quality Standard.



MAP REF.: ELIZABETH,N.J. U.S.G.S. QUADRANGLE MAP

Langan
Engineering and Environmental Services, Inc.

PSE&G COAL STREET
SITE LOCATION MAP

NEWARK — NEW JERSEY

JOB 1432502	SCALE 1"=2000'	DATE 6/2/98	DWG. NO. 1

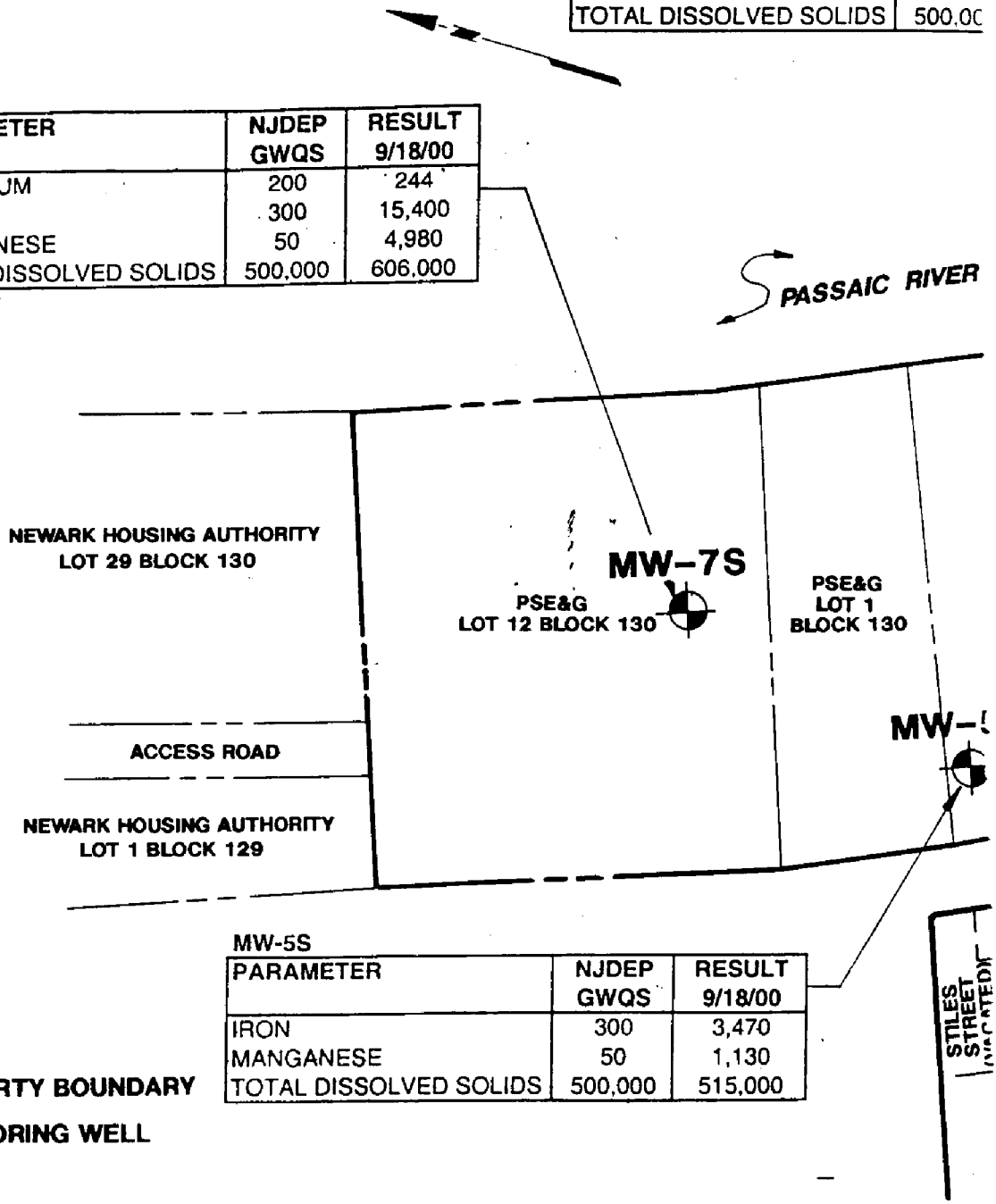
TIERRA-B-018039

MW-8S

PARAMETER	NJDE GWQ
CADMIUM	4
IRON	300
MANGANESE	50
TOTAL DISSOLVED SOLIDS	500,0C

MW-7S

PARAMETER	NJDEP GWQS	RESULT 9/18/00
ALUMINUM	200	244
IRON	300	15,400
MANGANESE	50	4,980
TOTAL DISSOLVED SOLIDS	500,000	606,000



MW-5S

PARAMETER	NJDEP GWQS	RESULT 9/18/00
IRON	300	3,470
MANGANESE	50	1,130
TOTAL DISSOLVED SOLIDS	500,000	515,000

LEGEND

PROPERTY BOUNDARY

MW-5S MONITORING WELL

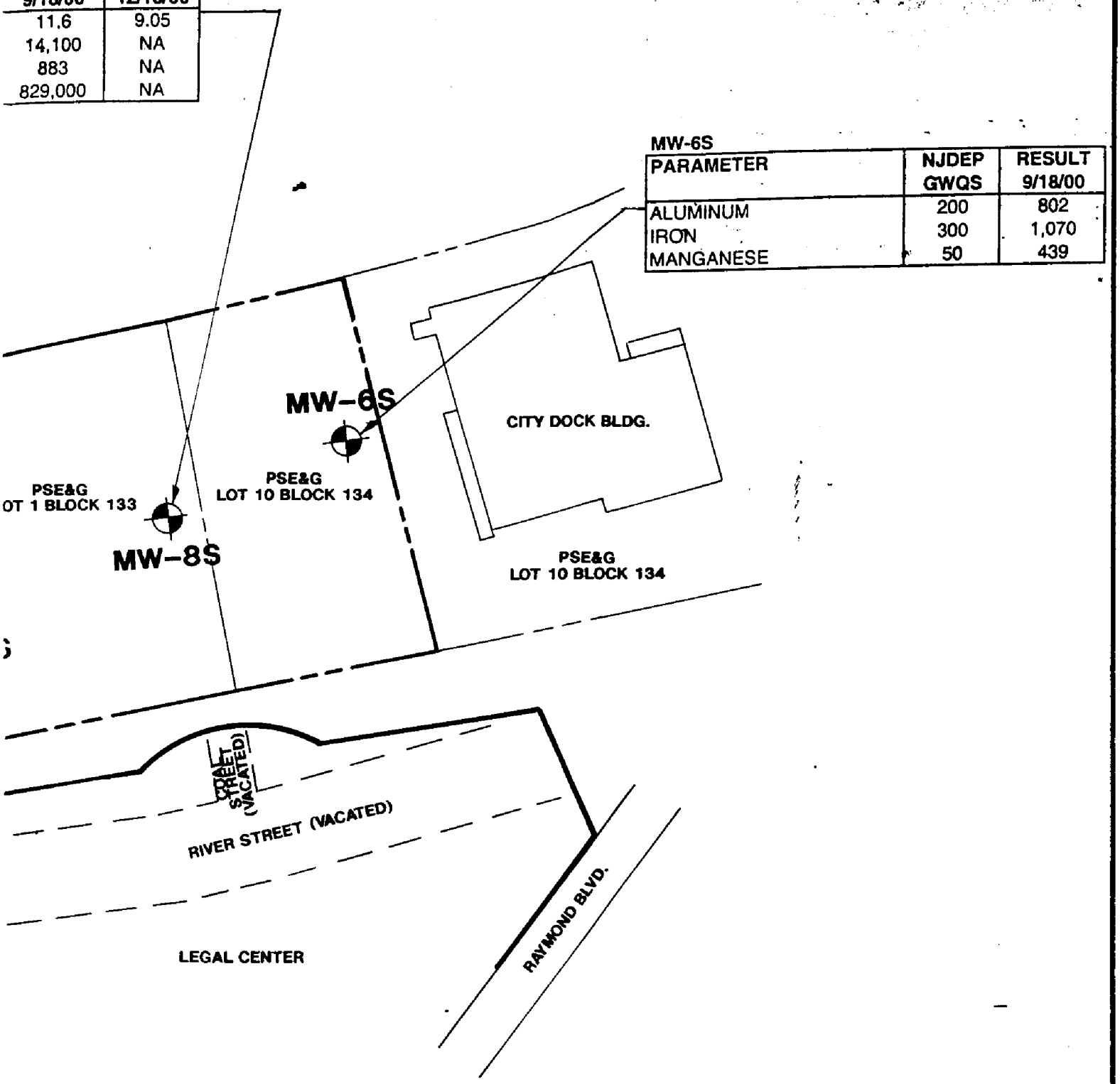
NOTES:

1. ALL RESULTS ARE IN MICROGRAMS PER LITER (ug/l)
2. THE GROUNDWATER QUALITY STANDARD (GWQS) IS THE HIGHER OF THE CLASS IIA CRITERIA AND THE PRACTICAL QUANTITATION LEVEL (IN ug/1)

RESULTS	
9/18/00	12/18/00
11.6	9.05
14,100	NA
883	NA
829,000	NA

MW-6S

PARAMETER	NJDEP GWQS	RESULT 9/18/00
ALUMINUM	200	802
IRON	300	1,070
MANGANESE	50	439

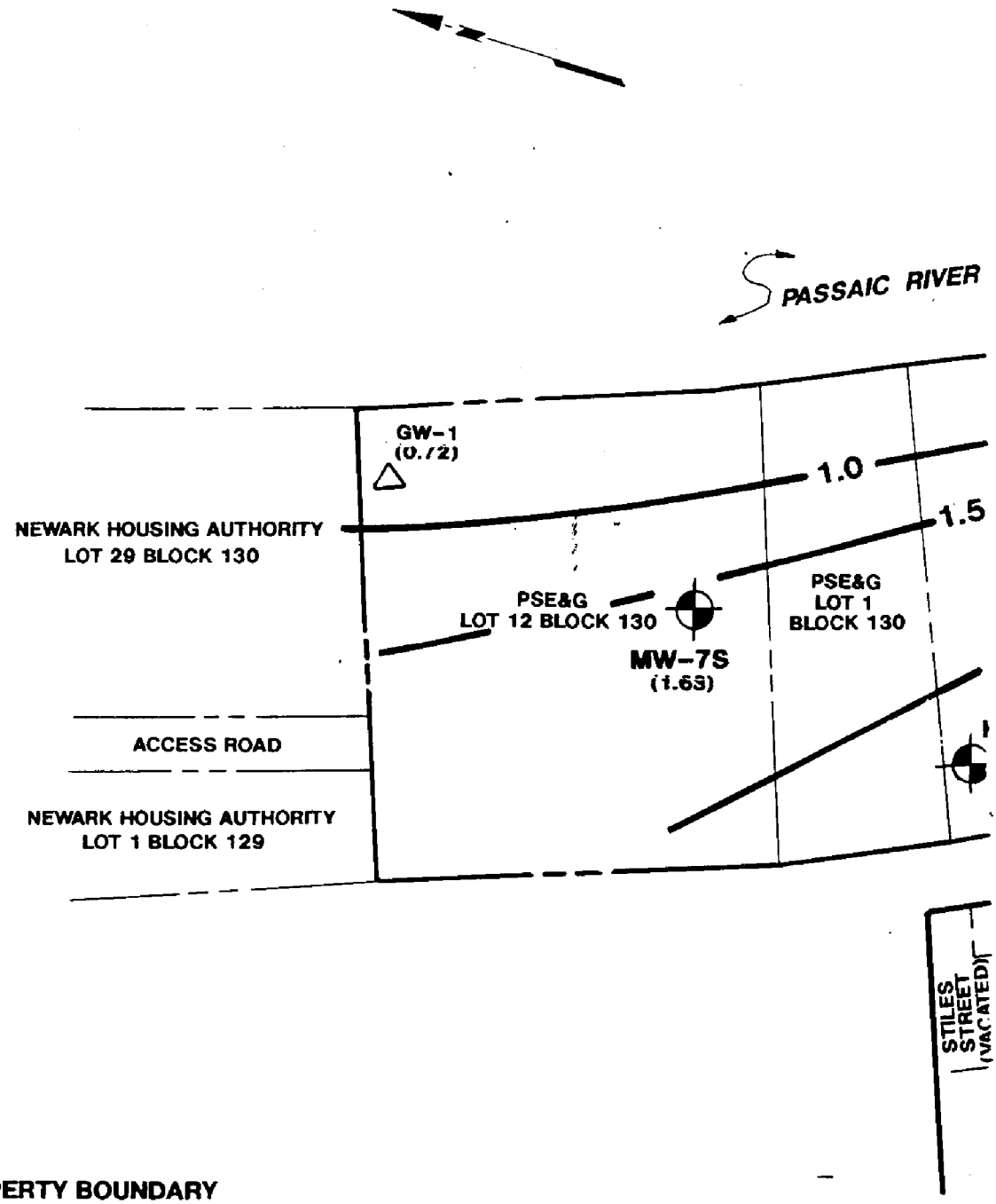


Langan Engineering and Environmental Services
(201) 794-6900
Elmwood Park, NJ Doylestown, PA. Miami, FL

Project PSE&G FORMER COAL STREET SITE
GROUNDWATER ANALYTICAL RESULT EXCEEDANCES
NEWARK NEW JERSEY

Job No.	Date	Scale	Dwg. No.
1432502	2/5/2001	1"=100'	5

TIERRA-B-018041



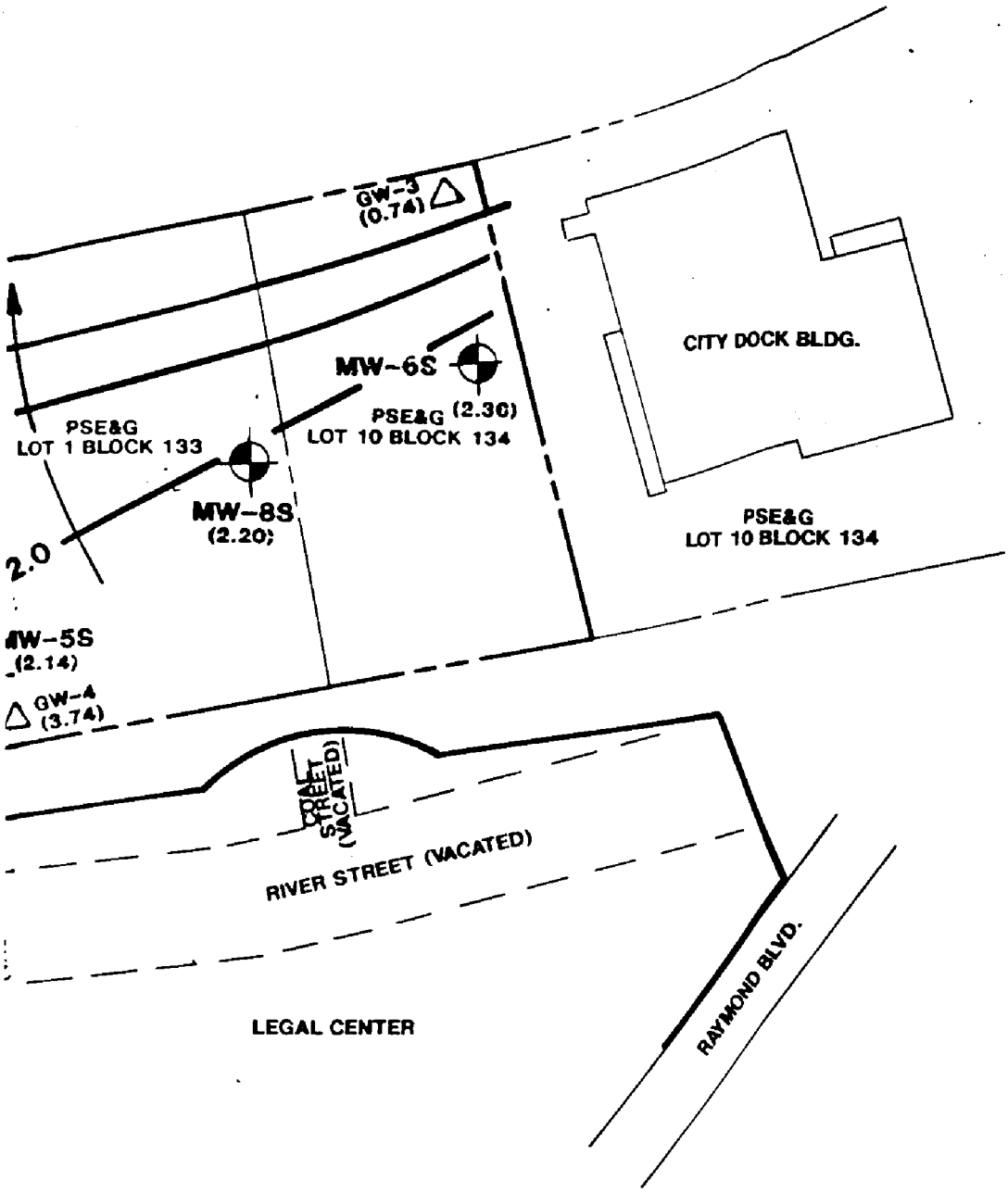
LEGEND

PROPERTY BOUNDARY

MW-5S (2.14) — MONITORING WELL INDICATING GROUNDWATER ELEVATION (FT.,NAVD)

2 — GROUNDWATER ELEVATION CONTOUR (FT.,NAVD)

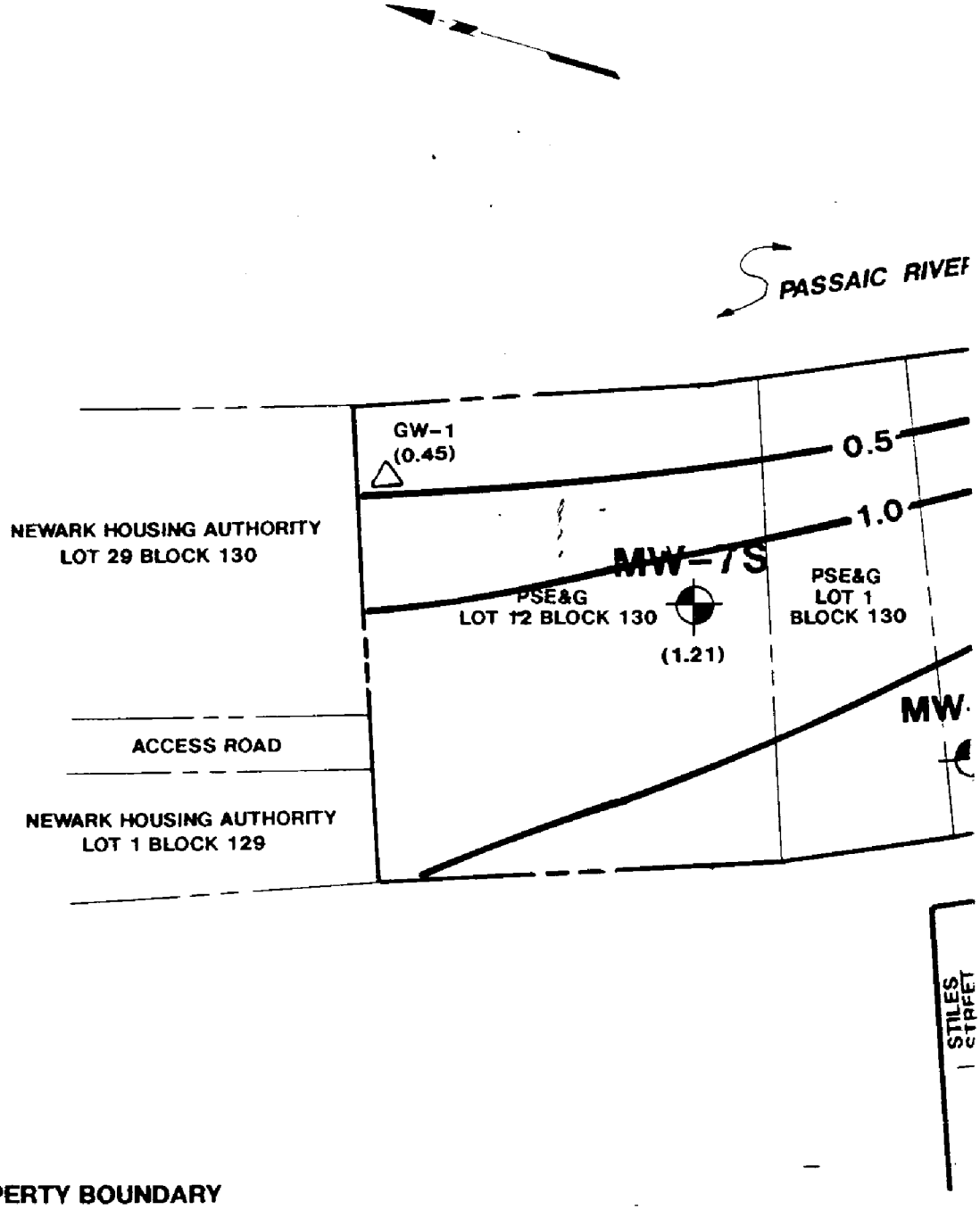
GROUNDWATER FLOW DIRECTION



Langan Engineering and Environmental Services
(201) 794-6900
Elmwood Park, NJ Doylestown, PA. Miami, FL

Project **PSE&G FORMER COAL STREET SITE**
GROUNDWATER ELEVATION CONTOUR MAP
19 DECEMBER 2000
NEWARK NEW JERSEY

Job No.	Date	Scale	Dwg. No.
1432502	1/4/2001	1"=100'	4



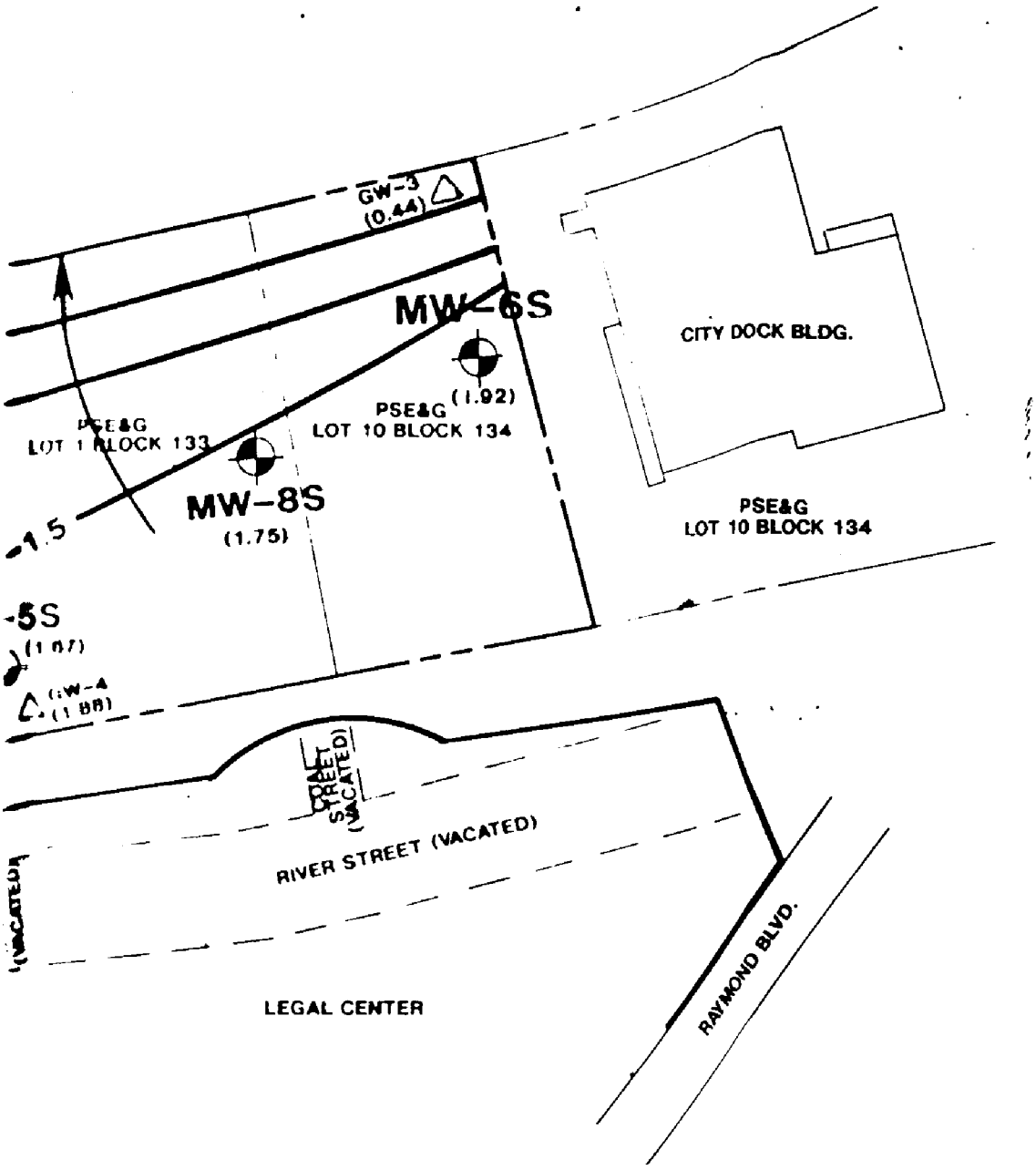
LEGEND

PROPERTY BOUNDARY

MW-5S (1.67) MONITORING WELL INDICATING GROUNDWATER ELEVATION (FT.,NAVD)

2 GROUNDWATER ELEVATION CONTOUR (FT.,NAVD)

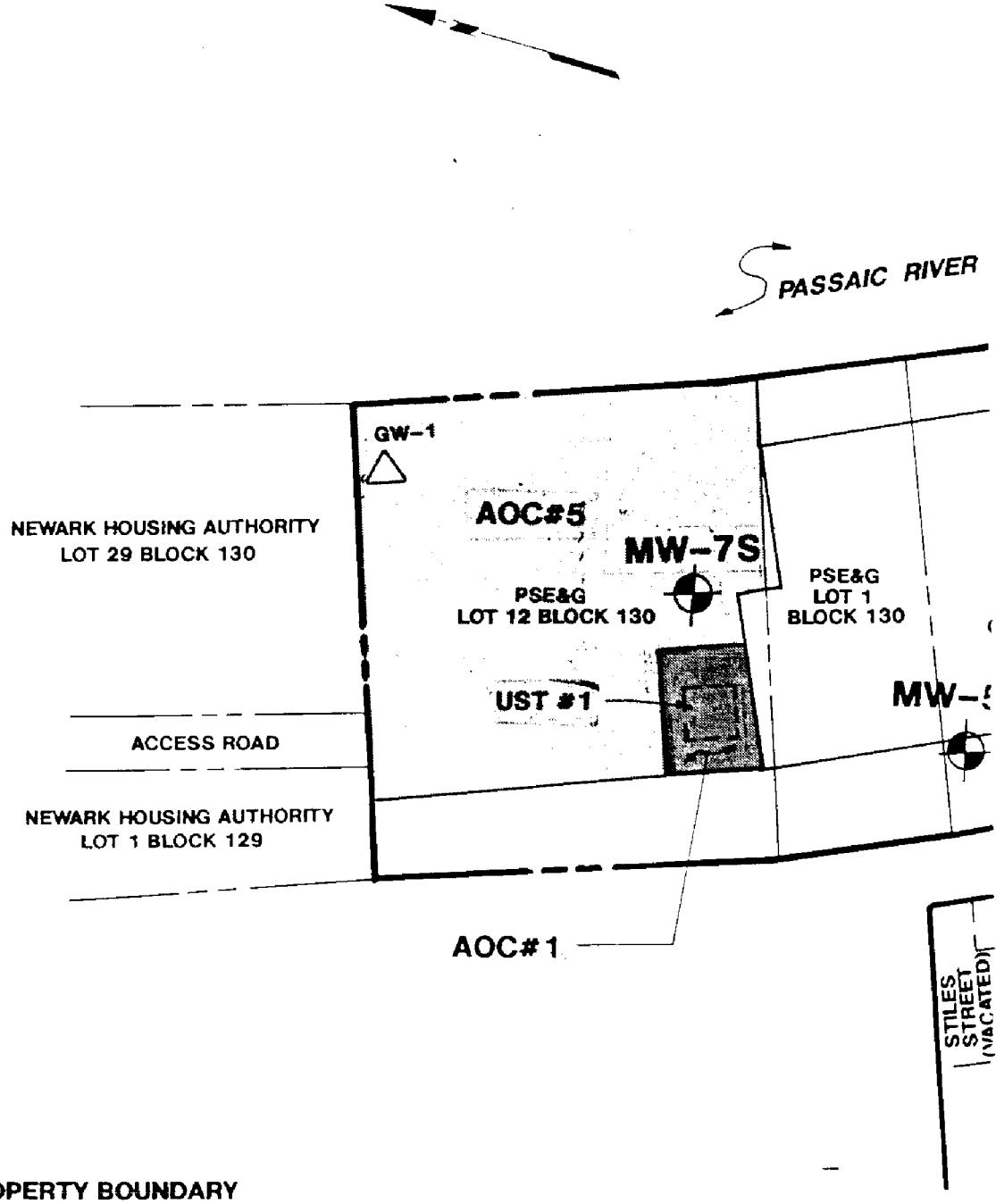
GROUNDWATER FLOW DIRECTION



Langan Engineering and Environmental Services
(201) 794-6900
Elmwood Park, NJ Doylestown, PA Miami, FL

Project **PSE&G FORMER COAL STREET SITE**
GROUNDWATER ELEVATION CONTOUR MAP
NEWARK **16 NOVEMBER 2000** NEW JERSEY

Job No.	Date	Scale	Dwg. No.
1432502	11/14/00	1"=100'	3



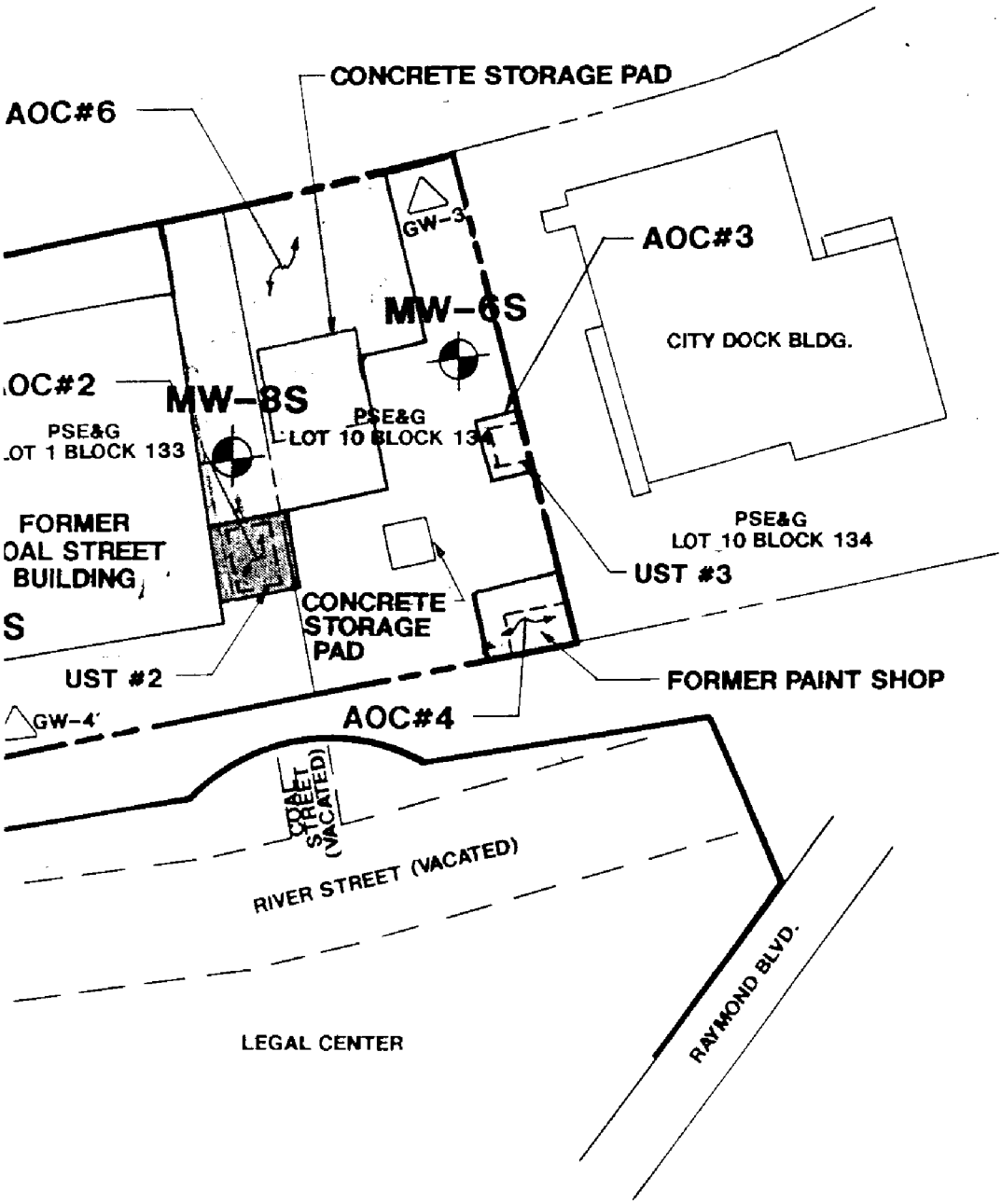
LEGEND

PROPERTY BOUNDARY

AOC#1 — AREA OF CONCERN

MW-5S — MONITORING WELL

GW-1 — PIEZOMETER



Langan Engineering and Environmental Services (201) 794-6900 Elmwood Park, NJ Doylestown, PA Miami, FL	Project PSE&G FORMER COAL STREET SITE AREA OF CONCERN, UST, AND MONITORING WELL LOCATIONS NEWARK NEW JERSEY		
Job No. 1432502	Date 11/14/00	Scale 1"=100'	Dwg. No. 2

TIERRA-B-018047