

Site Review And Update

IMPERIAL OIL COMPANY INCORPORATED/CHAMPION CHEMICALS

MORGANVILLE, MONMOUTH COUNTY, NEW JERSEY

CERCLIS NO. NJD980654099

AUGUST 31, 1992

REVISED

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia

Site Review and Update: A Note of Explanation

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

REVISED SITE REVIEW AND UPDATE

IMPERIAL OIL COMPANY INC./CHAMPION CHEMICALS

MORGANVILLE, MONMOUTH COUNTY, NEW JERSEY

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Prepared By

**The New Jersey Department of Health
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry**

SUMMARY OF BACKGROUND AND HISTORY

The Imperial Oil/Champion Chemicals Company (IOC/CC) site is in the Morganville section of Marlboro Township, Monmouth County, New Jersey (Figure 1). The 15-acre site is leased to the Imperial Oil company. Currently, Imperial Oil is operating an active oil-blending facility. The site is currently owned by the Champion Chemicals Company. Approximately 4.2 acres of the site is developed; it consists of seven facility structures and 56 aboveground storage tanks with a capacity of 963,000 gallons (Figure 2). Two off-site areas of freshwater wetlands (Figure 3) have been affected by site-related contaminants (primarily petroleum hydrocarbon sludges) and have been the focus of expedited remedial activity by the New Jersey Department of Environmental Protection and Energy (NJDEPE).

Active since 1912, the site has been used by a variety of commercial chemical operations; it was acquired by the Champion Chemicals Company in 1950, which began oil reclamation activities. The Imperial Oil company has leased the property from Champion Chemicals since 1969. The oil reclamation process conducted by Champion Chemicals Company followed by Imperial Oil's blending operations have produced the following waste products: wash water, waste oils, sludges, and oily filter clay. As a result, on-site soils are grossly contaminated with petroleum hydrocarbons, and lead, barium, arsenic, and polychlorinated biphenyls (PCBs) are present at levels of concern. Off-site soil and sediment samples from the affected wetlands area have significant concentrations of petroleum hydrocarbons, PCBs, lead, and arsenic. A layer of raw product (oil) has been found floating on groundwater from on-site monitoring wells. Currently, EPA is removing the raw product from the ground water. The extraction wells were installed in the summer of 1992.

The IOC/CC site has been the subject of numerous investigations by NJDEPE (beginning in 1981), the U.S. Environmental Protection Agency (EPA) (Superfund Innovative Technology Evaluation, 1987), and the Monmouth County Prosecutors Office (1986). The Phase I remedial investigation was conducted in 1987; Phase II activities were conducted in 1989 and 1990. A record of decision (ROD) for remediation of the off-site wetlands area was signed in September 1990.

A health assessment of the IOC/CC site issued in July 1990 by the Agency for Toxic Substances and Disease Registry identified human exposure pathways associated with high concentrations of petroleum hydrocarbons in off-site areas. Local children were reported to play in those areas. Additional potential exposure pathways identified in the assessment were related to groundwater contamination (domestic wells), and potentially affected surface waters (Lake Lefferts, a recreational, fishing, and future reservoir area). Birch Swamp Brook is the surface water body adjacent to the IOC site and Lake Lefferts is about one mile downgradient. The primary community concerns about the site were the accessibility of the contaminated area and the possible public health consequences of its use by area residents.

The 1990 health assessment of the IOC/CC site concluded that the site was a public health concern because of past and current exposure to site contaminants through dermal contact and/or ingestion or inhalation of suspended soil particles. That assessment recommended restricting the public's access to off-site areas affected by site contaminants, and further characterization of the groundwater contamination.

CURRENT SITE CONDITIONS

Personnel from the New Jersey Department of Health (James Pasqualo) and NJDEPE toured the IOC/CC site on July 9, 1992. Access to the operational portion of the site was not granted; the visit was limited to off-site areas and the facility perimeter.

The IOC/CC site is in a rural/suburban area surrounded by wooded areas and single-family homes. Off-site areas (Figure 3) affected by the site were grossly contaminated by oil sludges; some soils were black, and vegetation in some areas was stressed. Off-site areas identified in the 1990 PHA as unrestricted have been fenced, and unauthorized access is not currently likely. No signs of trespassing were seen in the restricted areas. The off-site areas of contamination are not near agricultural or recreational areas, and contained no discernable physical hazards.

The 1990 assessment was prepared using site data from 1987 and earlier. Since then, EPA and NJDEPE have signed a ROD for off-site contamination areas. Physical conditions and environmental contamination associated with the site have remained constant since the assessment was conducted.

The Phase II remedial investigation addressed the data gaps identified in the 1990 assessment. A ROD to address the on-site ground water contamination was signed in September 1992. Currently, EPA is in the process of conducting treatability studies for the on-site soil contamination. An EPA ROD for on-site soils and sediment is scheduled for 1994. Table 1 lists contaminants detected in off-site soils; of those, PCBs and inorganic compounds (antimony, arsenic, and beryllium) are at concentrations exceeding levels of concern.

CURRENT ISSUES

Past public health issues associated with the site focused on the off-site areas of contamination and the impact of the site on surface water quality in the area.

Because area residents have been provided with municipal water supplies, domestic groundwater use is minimal and limited to nondrinking uses. Current public health concerns include the site's effect on off-site wetland areas and (ultimately) surface waters such as Lake Lefferts. Lake Lefferts has been identified as a reservoir that may be used to supplement

diminished municipal well capacities in Matawan and other nearby communities; it also is used for fishing and other recreational activities.

The reports of undiscovered or hidden areas of drums containing oils and sludges, which were outlined in the 1990 assessment, are not supported by current site data and information. No current community concerns were identified. Past concerns about exposure to off-site contaminated soils have diminished since those areas were fenced.

CONCLUSIONS

The conclusion of the 1990 health assessment that the IOC/CC site influences the quality of area water resources (groundwater, surface water, and wetlands) and that the site should continue to be monitored, is valid in light of current site information.

Access to off-site areas has been restricted by NJDEPE, and human exposure risks associated with those areas have been minimized. Remedial actions that have already taken place, and those that will be conducted in the future, address the public health concerns documented in the 1990 assessment.

The data gaps identified in the original assessment have been addressed by subsequent remedial investigations.

In its current state and stage of remediation, the IOC/CC site is a public health hazard, but not an immediate threat to the public health. Because of that conclusion, additional evaluation of the site is needed when RI/FS documents are available for review.

RECOMMENDATIONS

ATSDR and NJDOH should prepare an addendum to the original health assessment when the RI/FSs for on-site operable units are available for review.

When available, new data and information about the site's impact on water resources in the area should be reviewed and evaluated for possible future public health implications.

The data and information developed in this site review and update have been evaluated to determine if follow-up actions may be indicated. Further site evaluation is needed to determine public health actions.

DOCUMENTS REVIEWED

1. E.C. Jordan Co. Remedial Investigation of the Imperial Oil/Champion Chemicals Site, Morganville, New Jersey. June 1990.
2. E.C. Jordan Co. Groundwater Control Feasibility Study, Imperial Oil/Champion Chemicals Site, Morganville, New Jersey. April 1992.
3. E.C. Jordan Co. Development and Initial Screening of Remedial Alternatives Report For Imperial Oil/Champion Chemicals Site, Morganville, New Jersey. October 1991.
4. New Jersey Department of Environmental Protection. Draft Proposed Plan For the Imperial Oil/Champion Chemicals Site. June 1990.
5. New Jersey Department of Environmental Protection. Record of Decision: Imperial Oil Company/Champion Chemicals Site (Operable Unit One). September 1990.
6. New Jersey Department of Environmental Protection, Site Status Report. November 1991.
7. Agency For Toxic Substances and Disease Registry. Public Health Assessment: Imperial Oil/Champion Chemicals Site. July 1990.
8. New Jersey Department of Environmental Protection, Division of Hazardous Site Mitigation. Focused Feasibility Study, Off-Site Areas 1 & 2, Imperial Oil/Champion Chemicals Site, Morganville, New Jersey. July 1990.

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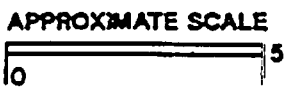
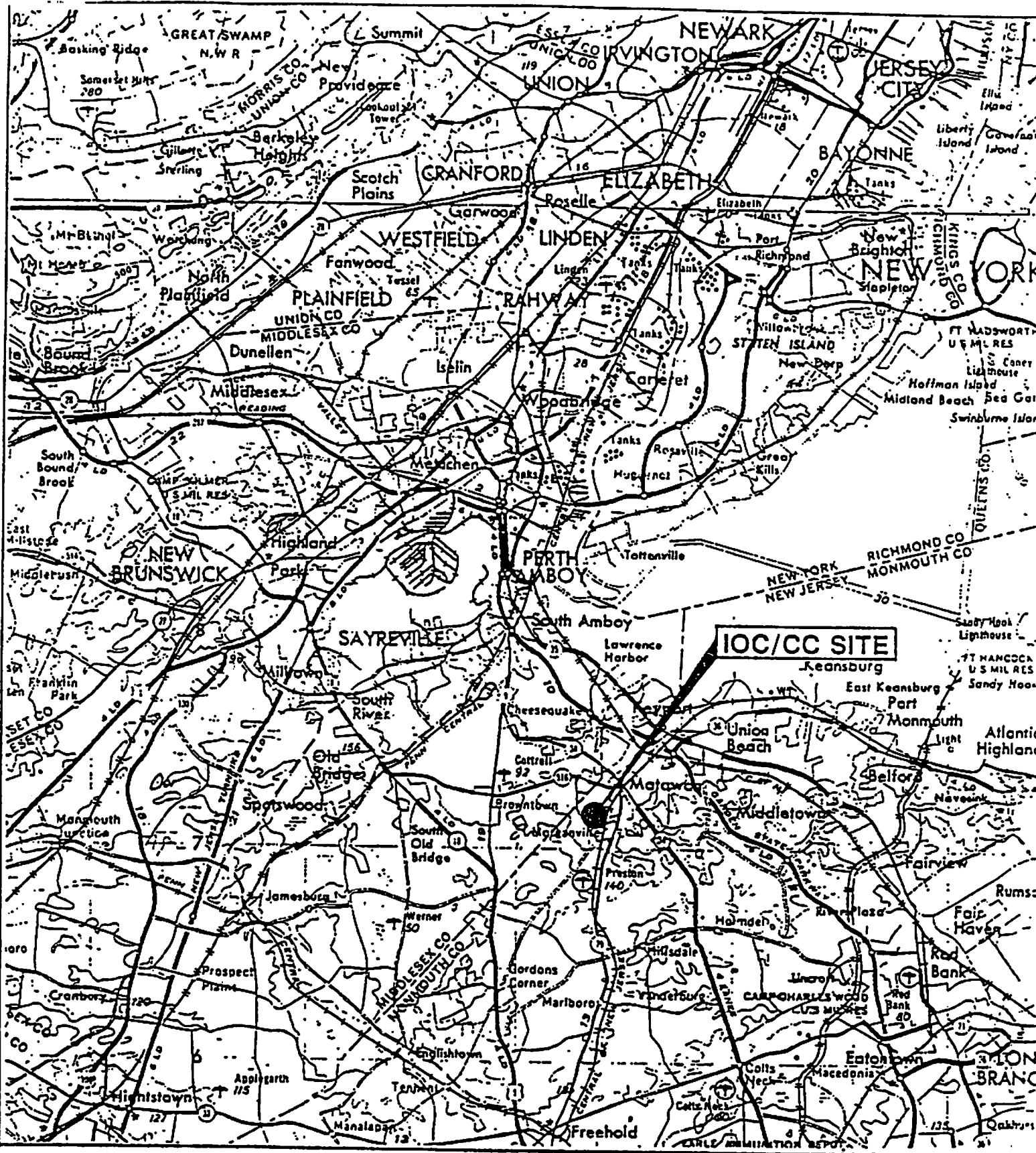
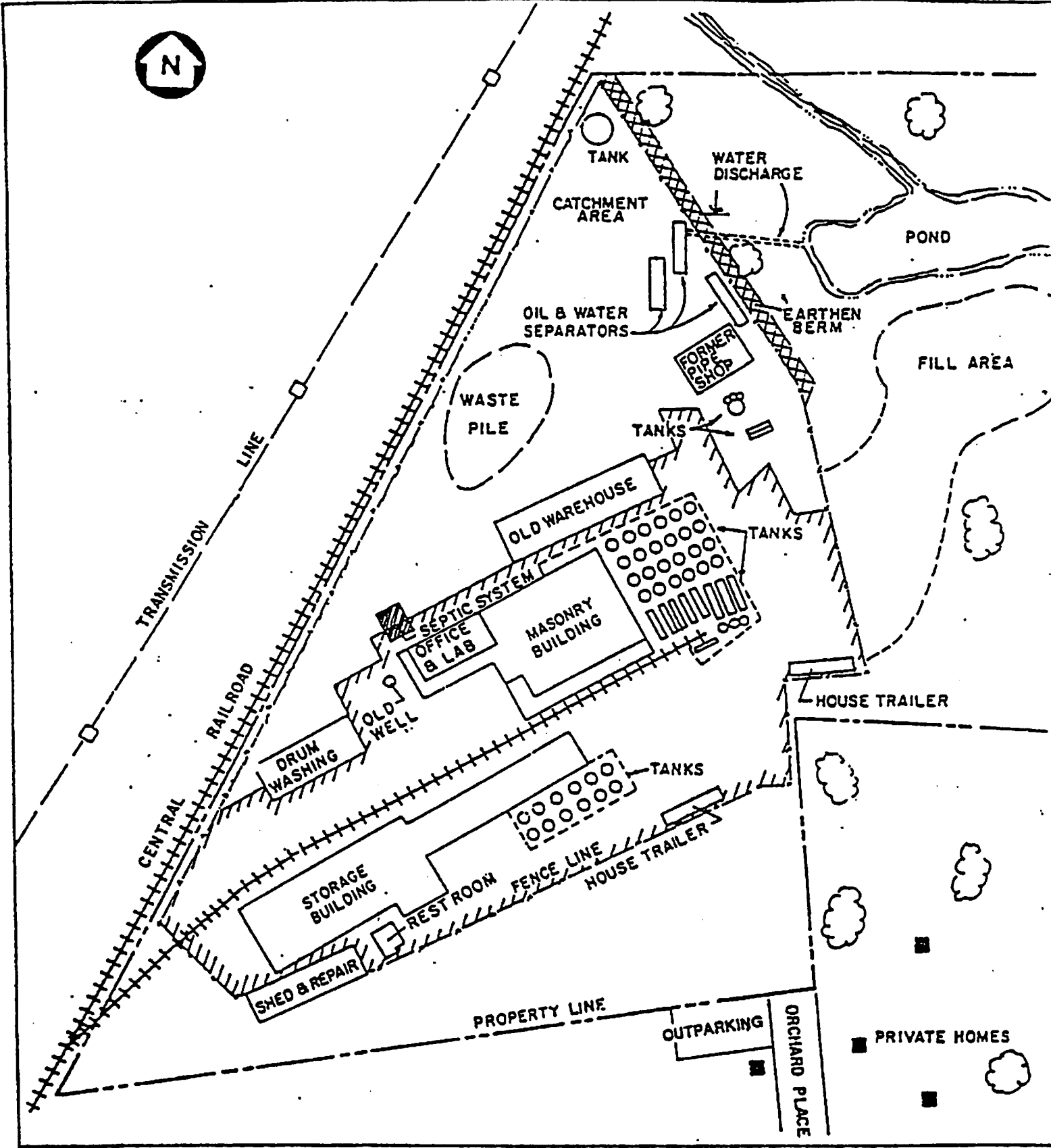

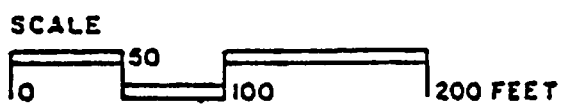


FIGURE 1
SITE LOCATION MAP
IMPERIAL OIL/CHAMPION CHEMICALS SITE
MORGANVILLE, NE



LEGEND

 EXTENT OF PAVED AREA



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FIGURE 2
SCHEMATIC LAYOUT OF
IMPERIAL OIL CO. FACILITY
IMPERIAL OIL/CHAMPION CHEMICALS SITE
MORGANVILLE, NEW JERSEY

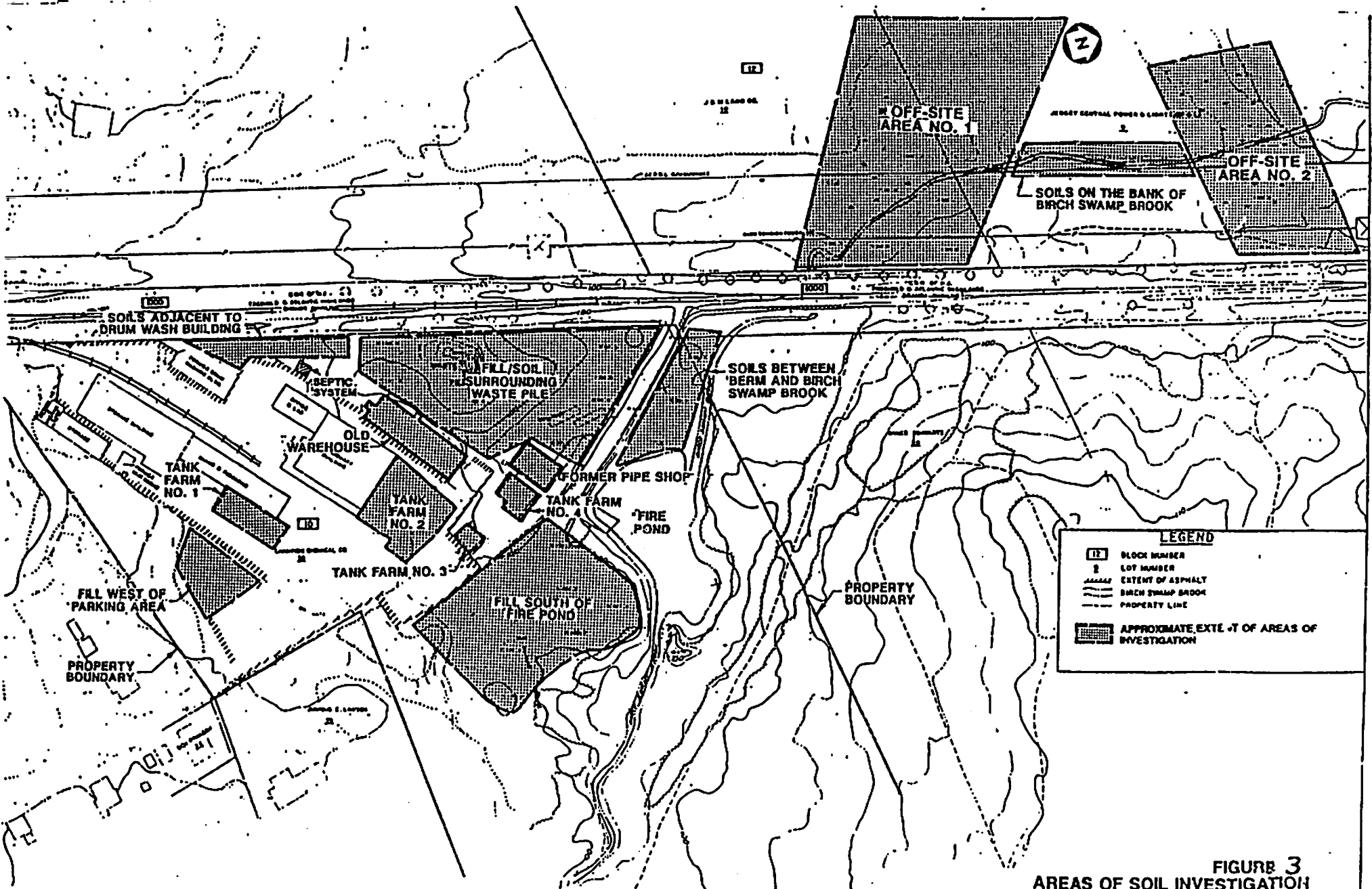


FIGURE 3
AREAS OF SOIL INVESTIGATION
IMPERIAL OIL/CHAMPION CHEMICALS
MORGANVILLE, NEW JERSEY

TABLE 1

CHEMICALS DETECTED IN SOILS (0-3 FEET)
OFF-SITE AREAS 1 AND 2

CHEMICAL COMPOUNDS	CONCENTRATION LEVEL	
	<u>MAXIMUM</u>	<u>MEAN</u>
VOLATILES (PPB)		
Benzene	16.0	2.37
Ethylbenzene	170.0	27.30
Toluene	740.0	89.20
Xylenes	660.0	69.40
SEMI-VOLATILES (PPB)		
Bis(2-ethylhexyl) phthalate	140000.0	33158.00
Butyl benzyl phthalate	19000.0	3979.00
Chrysene	41.0	3.15
Di-n-butyl phthalate	5700.0	651.00
Fluoranthene	49.0	3.77
Phenanthrene	270.0	20.76
2-Methylnaphthalene	700.0	117.00
Pyrene	590.0	100.15
PCBS (PPB)		
Aroclors	22040.0	1465.00
INORGANICS (PPM)		
Antimony	96.2	14.2
Arsenic	203.0	31.9
Beryllium	3.6	0.897
Chromium	71.5	18.4
Copper	107.0	22.5
Lead	2330.0	178.0

NOTES: • Concentration levels presented in this table represent Contract Laboratory Program (CLP) analyzed data, and does not include results from field screening activities.

- Parts per million is denoted by ppm.
- Parts per billion is denoted by ppb.