United States
Environmental Protection
Agency

Office of
Emergency and
Remedial Response

EPA/ROD/R02-86/033
September 1986

EPA

Superfund Record of Decision:

Syncon Resins, NJ

TECHNICAL REPORT DATA

(Please read Instructions on the reverse before completing)

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EPA/ROD/R02-86/033		

4. TITLE AND SUBTITLE	5. REPORT DATE
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12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460	13. TYPE OF REPORT AND PERIOD COVERED Final ROD Report 14. SPONSORING AGENCY CODE 800/00
15. SUPPLEMENTARY NOTES	

16. ABSTRACT

The Syncon Resins site encompasses approximately 15 acres and is located in a heavily industrialized area of northern New Jersey. The Syncon Resin facility produced alkyd resin carriers for pigments, paints, and varnish products. In the production process excess xylene or toluene was separated from the wastewater and reused in subsequent reactions. The remaining wastewater was subsequently pumped to an unlined leaching pond (lagoon) to evaporate or percolate into the soil. The sampling performed during the remedial investigation indicated extensive onsite contamination in the soil, ground water, building dirt/dust, and stainless vessels and tanks. Four general classes of chemical contaminants were found onsite: organic compounds, pesticides, PCBs and metals.

The cost-effective remedial action selected for this site includes: removing the contents of the storage tanks and vessels for offsite disposal; decontaminating buildings and tank structures as necessary; excavation of lagoon liquids, sediments and grossly contaminated surface soils and dispose offsite; install a cover over the site that allows natural flushing; pump and treat ground water; and conduct supplemental studies to evaluate methods which enhance the effectiveness of flushing and/or treatment and destruction of contaminated soils. The estimated capital cost for the selected remedial action is $5,600,000 and annual O&M costs are approximately $209,000.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field.Group
Record of Decision Syncon Resins, NJ Contaminated Media: gw, sediment, soil Key contaminants: organic compounds, pesticides, PCBs, heavy metals		

18. DISTRIBUTION STATEMENT	19. SECURITY CLASS (This Report) None	21. NO. OF PAGES 62
	20. SECURITY CLASS (This page) None	22. PRICE

The ROD has been reviewed by the appropriate program offices within Region II and the State of New Jersey and their input and comments are reflected in this document. In addition, a letter from the State confirming its verbal concurrence of the selected remedy is forthcoming.

Attachment

RECORD OF DECISION

REMEDIAL ALTERNATIVE SELECTION

Site Syncon Resins, Kearny, New Jersey

Documents Reviewed

I am basing my decision on the following documents, which describe the analysis of remedial alternatives considered for the Syncon Resins site.

- Remedial Investigation Report, prepared by Ebasco Services, May 1986 (revised August 1986)

- Risk Assessment Report, prepared by Ebasco Services, June 1986 (revised August 1986)

- Identification and Screening of Remedial Alternatives, prepared by Ebasco Services, June 1986 (revised August 1986)

- Feasibility Study Report, prepared by Ebasco Services, July 1986 (revised August 1986)

- Responsiveness Summary, September 1986

- Staff summaries and recommendations

Description of Selected Remedy

- Remove the contents of storage tanks and vessels for disposal in accordance with applicable requirements

- Decontaminate buildings and tank structures as necessary

- Remove lagoon liquids and sediments for disposal in accordance with applicable requirements

- Remove grossly contaminated surface soils for disposal in accordance with applicable requirements

- Install an appropriate cover over the site to allow natural flushing of underlying soil and ground water contaminants

- Collect and treat contaminated waters from the shallow aquifer, with discharge to the Passaic River

- Conduct supplemental studies to evaluate methods to enhance the effectiveness of flushing and/or treatment and destruction of the contaminated soils

Declarations

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980, and the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), I have determined that the alternative described herein is an operable unit involving control of the source of contamination which is cost-effective and consistent with a permanent remedy.

I have further determined that this remedy is a cost-effective alternative that is technologically feasible and reliable, and which effectively mitigates and minimizes damages to and provides adequate protection of public health, welfare and the environment. Implementation of this operable unit is appropriate at this time, pending a determination of the need for any further remedial actions. It is also hereby determined that implementation of the selected remedy is appropriate when balanced against the availability of Trust Fund monies for use at other sites.

The State of New Jersey has been consulted and agrees with the selected remedy.

September 29, 1986
Date

Christopher J. Daggett
Regional Administrator

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

SYNCON RESINS SITE, KEARNY, NEW JERSEY

SITE LOCATION AND DESCRIPTION

The Syncon Resins site encompasses approximately 15 acres and is located in a heavily industrialized area of northern New Jersey. The site is located in Kearny, Hudson County, at approximately 40° 44' latitude and 74° 06' longitude. The site is bounded on its western edge by the Passaic River (Figure 1). Adjacent to the northern and southern boundaries of the site are two licensed hazardous waste haulers. The site is bounded on the eastern side by Jacobus Avenue and is across the street from a lacquer manufacturing facility.

The Syncon Resins site is situated on a narrow peninsula of land bordered by the Passaic and Hackensack Rivers, whose confluence 1.5 miles south of the site forms the upper reaches of Newark Bay. The site is relatively flat with minor topographic variations. The elevation at the site ranges from five to ten feet above mean sea level (MSL). Both the Passaic and Hackensack Rivers are tidal water bodies with a mean spring tidal range of approximately six feet. Newark Bay, the Passaic River, and the Hackensack River are major components of the Hudson River-New York Bight estuarine system.

The narrow peninsula on which the Syncon Resins site is located is heavily industrialized. Various chemical plants, hazardous waste transporters, manufacturing companies, petroleum facilities, and storage terminals are situated within the immediate area. The closest residential areas to the site are located approximately one mile due west in Newark and one and one-half miles due southeast in Jersey City. The shallow aquifer in the area is not utilized for any purpose. Ground water from the confined or deeper aquifer within the area is utilized solely for industrial purposes. All potable water for the area's users is supplied via municipal water purveyors.

The Syncon Resins site and the surrounding area are situated within the Hudson River drainage basin. The material overlying the bedrock comprises primarily alluvial sands, silts, clay and detritus. Immediately beneath the site are four major stratigraphic units within the alluvial material: 1) a surficial fine to coarse sand layer approximately 10 feet thick, 2) a highly plastic clay layer approximately 8-10 feet thick, 3) a medium sand layer approximately 10 feet thick, and 4) a deep layer of silty clay and very fine sand approximately 15 feet thick. All four stratigraphic units are continuous across the site.

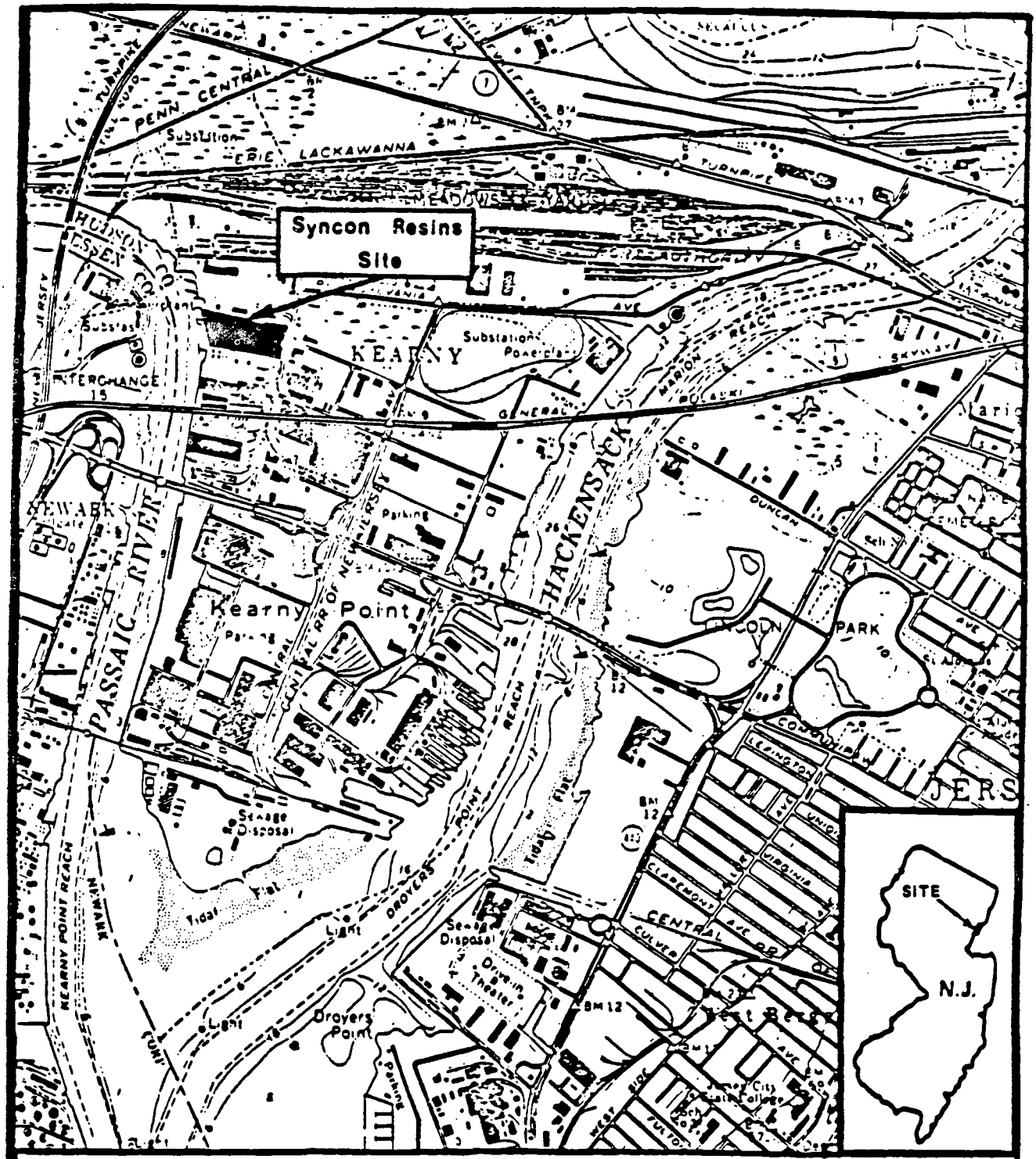


FIGURE 1

SITE LOCATION MAP, SYNCON RESINS SITE, HUDSON COUNTY, NEW JERSEY

The two sand layers are separated by the clay layer, which acts as an aquitard, thereby forming two aquifers beneath the Syncon Resins site: 1) a shallow, water table aquifer above the clay layer and 2) a deep, confined aquifer beneath the clay layer. Over most of the site, the water table is one to two feet below ground level and gently slopes to the west toward the Passaic River. The confining layer of clay underlying the site begins approximately 10 feet below grade. Ground water velocity within the shallow aquifer was calculated to be 31.2 feet per year. The deep aquifer has an estimated ground water velocity of 2.1 feet per year.

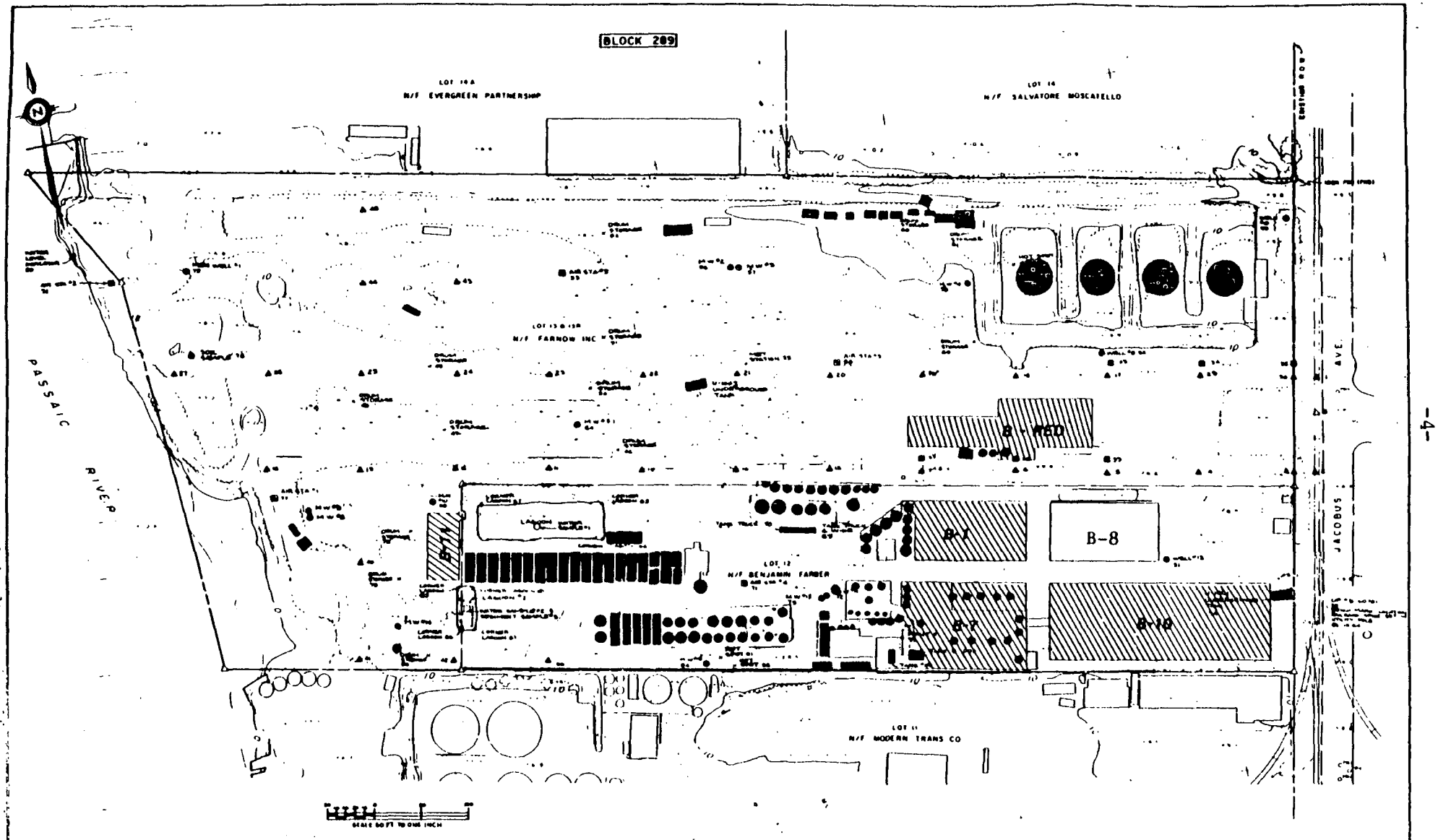
SITE HISTORY

The origin of the Syncon Resins site is obscure. The earliest evidence documenting the existence of the site consists of 1951 aerial photographs of the area. In November 1981, the New Jersey Department of Environmental Protection (NJDEP) investigated the site and ordered its owners to control and contain the hazards at the site. In May 1977, the owners of Syncon Resins filed for bankruptcy under Chapter 11 of the Bankruptcy Act; in 1982, the company ceased all operations. In December 1982, the site was listed on the National Priorities List.

The Syncon Resins facility produced alkyd resin carriers for pigments, paints, and varnish products. The processes that produced these resins were carried out in closed stainless steel vessels. Cooling water utilized in the production process was recycled within the system. In the production process, excess xylene or toluene was separated from the wastewater and reused in subsequent reactions. The remaining wastewater was subsequently pumped to an unlined leaching pond (lagoon), where it was allowed to evaporate or percolate into the soil. Apparently, much of the company's operations consisted of the reprocessing of off-specification resins purchased from other manufacturers.

The site consisted of at least two reactor buildings containing stainless steel vessels, various other buildings and structures, numerous large bulk storage tanks, two unlined lagoons, and an unknown number of underground tanks and associated piping systems (Figure 2). A total of 12,824 55-gallon drums of off-specification resins, raw materials, wastes and solvents stored at various locations on the site were removed in 1984, under a Cooperative Agreement between the NJDEP and the U.S. Environmental Protection Agency (EPA), at a cost of $2.4 million. Still remaining on-site are numerous laboratory chemicals and batch samples of resins which are scheduled to be removed in the near future.

As stated above, the two unlined lagoons at the site were used for discharging process wastewater. Lagoon 1 is the larger of the two lagoons, with approximate dimensions of 40 by 135 feet.



BUILDING AND TANK SAMPLING LOCATIONS (1985)

FIGURE 2

Lagoon 2 is approximately 40 by 15 feet in size. The depth of each lagoon has been estimated at 4 feet.

Six main buildings and seven ancillary structures exist on the Syncon Resins site. Building B-1 appeared to be primarily utilized for maintenance and storage, with the western third of the building being utilized for some production and/or process work. Building B-7 was the main production/process building and electrical service facility. Building B-10, near the front gate, contained administrative offices on the second floor and probably utilized the first floor as a storage area. Building B-11, near Lagoon 2, may have served as an equipment storage and/or maintenance area. Building B-RED, with loading docks adjacent to the railroad tracks and parking areas, most probably served as a shipping/receiving or short-term storage area. A laboratory (Building B-8) located near the main entrance and adjacent to Building B-10 was utilized for in-process formulations and quality checks of the finished product. The other buildings on-site were also used in process-related activities.

CURRENT SITE STATUS

A. Previous Investigations

In 1982, a limited site investigation was performed by the NJDEP and the EPA at the Syncon Resins site. This investigation focused on a preliminary assessment of the types and extent of contaminants at the facility.

The investigation showed widespread contamination. Within the deep aquifer, six contaminants (benzene, methylene chloride, tetrachloroethylene, chloroform, carbon tetrachloride and PCBs) exceeded adjusted ambient water quality criteria (AAWQC). Shallow ground water was grossly contaminated with 24 organic compounds, of which fourteen exceeded AAWQC. Thirteen of these contaminants were found at extremely high concentrations (greater than 760 parts per million (ppm)), with nine of them present in the ground water at percent levels (parts per hundred). Seven contaminants found in the shallow ground water could not be compared to the water quality criteria since no criteria currently exist for these compounds.

Gross chemical contamination was found within the Syncon Resins facility's soils. Ten base/neutral compounds in excess of 400 ppm and high concentrations of toluene and methylene chloride were found in test pit soils. PCBs (greater than 33,000 ppm), DDT (in excess of 1400 ppm) and high concentrations of arsenic, chromium, lead, mercury, and zinc were also present. Nearly all of the compounds found in the test pit soils are suspected carcinogens.

Two localized areas of high concentrations of contaminants or "hot spots" were identified during this investigation:

1) the southwest corner of the site adjacent to the Passaic River, and 2) the northeast corner of the property near the large 600,000-gallon storage tanks. High concentrations of toluene and PCBs were found in the southwest corner, whereas elevated concentrations of naphthalene and petroleum hydrocarbons occurred in the northeast corner.

A survey of the 12,824 55-gallon drums stored at various on-site locations revealed three main classes of materials: non-PCB containing, PCB containing, and peroxides. Most of the drummed material did not contain PCBs and could be separated into five categories: bulk solids (2,441 tons), flammable solids (1,452 drums), lab packs (10 drums), flammable liquids (79,100 gallons) and base/neutral liquids (66,911 gallons). PCB containing materials were categorized as bulk solids (1 ton), drummed liquids (29 drums) and flammable materials (49 drums). Only six drums of peroxide were found on-site. All of these drummed materials were removed from the site by licensed waste haulers.

B. Present Site Investigations

The sampling performed during the remedial investigation indicated extensive on-site contamination in all of the matrices sampled (i.e., vessels and tanks, soil, ground water, and building dirt/dust), except for ambient air. Four general classes of chemical contaminants were found on-site: organic compounds (volatiles and base/neutral extractables), pesticides, PCBs, and metals. The organic compounds present are normal raw materials and/or resin components, and the metals seen are probably from metallic oxides or organo-metallics utilized as pigments or catalysts in the production processes.

A total of 150 tanks and vessels remain on-site including three which are underground. Approximately half of the on-site tanks are empty. Of those tanks containing material, most of the tanks contained either hexaneor water-soluble peroxides or hexane-soluble liquids and solids. Table 1 summarizes the tanks and vessels, their contents, and volumes of material.

Four tanks (approximately 7,000 gallons) contained aqueous liquids; whereas two tanks (approximately 900 gallons) contained cyanide-positive organics. Two tanks were essentially empty except for a minimal amount of a solid, hexane-soluble material. Fourteen tanks were categorized as special cases because it was difficult to assign them to a single general category. Most of these fourteen tanks contained flammable liquids or solids, crystalline or polymeric material, or sludge residues. In addition to their chemical content, some tanks and associated piping were encased in an asbestos-base material.

TABLE 1

TANKS AND VESSELS

Group	Category	Total Volume	No. of Tanks	Comments
1.	Empty		66	2 tanks*; 2 tanks**
2.	Near Empty		2	Hexane-soluble solids
3.	Cyanides	900 gal	2	
4.	Hexane-Soluble Peroxides	43,000 gal	16	
5.	Water-Soluble Peroxides	54,000 gal 20 CY solids	22	
6.	Hexane-Soluble Liquids	26,000 gal	11	2 tanks**; 1 tank***
7.	Hexane-Soluble Solids	30 CY	6	1 tank**
8.	Aqueous Liquids	7,000 gal	4	largely rainwater
9.	Special Cases		14	

PCB concentration ranges:

* 10-100 ppm
** 100-500 ppm
*** >500 ppm

Contamination from organic compounds exists throughout the Syncon Resins site (Tables 2 through 7). Volatile organic contaminant concentrations were greatest in the lagoon sediments, in saturated and unsaturated soils near the southwest corner of the site adjacent to Lagoon 2, and around Buildings 1 and 7. Primarily, the volatile contaminants were common solvents: toluene, xylene, trichloroethylene, ethylbenzene, benzene, 2-hexanone, methyl isobutyl ketone, and chlorobenzene. The data suggest that this contamination may have been caused, in part, by solvent carry-over into the wastewater and spills.

The shallow aquifer was contaminated primarily with the same volatile organic solvents as those found in the lagoon sediments and former process buildings (i.e., toluene, xylene, trichloroethylene). Generally, the greatest concentrations of these common solvents occurred in the south-central and south-western portions of the site near the tank farm and in the northeastern portion of the site near former drum storage areas. This suggests that tank and drum leakage or spillage may be the primary source of this contamination.

The confined aquifer beneath the clay layer did not contain any volatile organic solvents found in other on-site matrices. Thus, the confining clay layer beneath the site appears to act as a barrier to vertical migration of chemical contaminants. Two solvents (1,1-dichloroethane and chlorobenzene) were present in the deep aquifer, but their absence from on-site water matrices suggest an off-site source.

Acid/base/neutral organic compounds present in saturated and unsaturated soils on-site were principally phthalates, polyaromatic hydrocarbons, dichlorobenzene, N-nitrosodiphenylamine/diphenylamine and 4-methylphenol. Surficial phthalate contamination was found throughout the site, with the greatest concentrations occurring in the soils adjacent to the buildings at the southeast corner of the site near Jacobus Avenue. In contrast, none of the other acid/base/neutral compounds exhibited any vertical distributional pattern in the on-site soils. These compounds were instead concentrated in saturated and unsaturated soils in or near former storage, processing, or laboratory areas. This suggests that drums, tanks, or buildings may be possible point sources for these contaminants.

Base/neutral organic compounds, principally naphthalene and 2-methyl naphthalene, were present in the ground water near the south-central tank farm and the large 600,000-gallon storage tanks at the northeastern corner of the site. These compounds were found only in the shallow aquifer, above the clay layer. The close proximity of the base/neutral compounds within the shallow aquifer to the large storage tanks and tank farm suggests

TABLE 2

SUMMARY TABLE OF CONCENTRATION RANGES
FOR PESTICIDES/PCBs AND METALS DETECTED
IN UNSATURATED, SATURATED AND CLAY SAND LAYER SOILS
SAMPLED DURING THE 1985 SITE INVESTIGATIONS

Compound	Concentration Ranges		
	Unsaturated Soil	Saturated Soil	Clay Sand Layer Soil
Pesticides/PCBs:			
DDT	ND-120 ppm	ND-0.015 ppm	-
DDD	ND-20 ppm	-	-
DDE	ND-9.1 ppm	-	-
Aldrin	ND-0.168 ppm	-	-
PCB	ND-31 ppm	-	-
Metals*:			
Lead	ND-4919 ppm	ND-1233 ppm	-
Zinc	ND-994 ppm	25-330 ppm	13-21 ppm
Vanadium	ND-851 ppm	ND-60 ppm	-
Chromium	12-829 ppm	9-332 ppm	ND-12 ppm
Arsenic	8.5-256 ppm	ND-37 ppm	-
Nickel	ND-83 ppm	ND-315 ppm	-
Thallium	ND-69 ppm	ND-44 ppm	ND-13 ppm
Cadmium	ND-17 ppm	ND-9.3 ppm	-
Silver	ND-8.1 ppm	-	-
Mercury	ND-1.5 ppm	ND-1.8 ppm	0.21-1.4 ppm
Cobalt	-	ND-18 ppm	ND-5.5 ppm
Phenols	ND-51 ppm	ND-18 ppm	ND-5.5 ppm

Note: Clay Sand Layer Soil is soil obtained below the clay layer from the 17-19 foot depth interval.

* - Qualified data.

TABLE 3

SUMMARY TABLE OF CONCENTRATION RANGES
FOR VOLATILES, ACID/BASE NEUTRAL EXTRACTABLES AND
METALS DETECTED IN UNSATURATED
AND SATURATED SOILS DURING THE 1986 SITE
INVESTIGATIONS

Compound	Concentration Ranges	
	Unsaturated Soil	Saturated Soil
Volatile Organics		
Methylene Chloride	ND - 0.17 ppm	ND - 0.05 ppm
Toluene	ND - 2400 ppm	ND - 150 ppm
Xylene (Total)	ND - 1600 ppm	ND - 30 ppm
Chlorobenzene	ND - 24 ppm	ND - 1.2 ppm
Ethylbenzene	ND - 240 ppm	ND - 8.2 ppm
2-Hexanone (MBK)	ND - 2.1 ppm	ND - 0.12 ppm
4-Methyl-2-pentanone (MIBK)	-	ND - 0.11 ppm
1,1,2,2-Tetrachloroethane	-	ND - 0.04 ppm
Acid/Base Neutrals		
Naphthalene	ND - 0.84 ppm	ND - 1.4 ppm
2-Methylnaphthalene	ND - 0.77 ppm	ND - 2.6 ppm
Dibenzofuran	ND - 0.71 ppm	ND - 0.62 ppm
Diethylphthalate	ND - 0.59 ppm	ND - 0.66 ppm
Fluorene	ND - 0.83 ppm	ND - 2.5 ppm
Phenanthrene	ND - 12 ppm	ND - 27 ppm
Anthracene	ND - 5 ppm	ND - 41 ppm
Di-n-butylphthalate	ND - 330 ppm	ND - 5.8 ppm
Fluoranthene	ND - 41 ppm	ND - 190 ppm
Pyrene	ND - 12 ppm	ND - 160 ppm
Benzo(a)anthracene	ND - 8.2 ppm	ND - 79 ppm
bis(2-ethylhexyl)phthalate	0.44 - 210 ppm	ND - 44 ppm
Chrysene	ND - 8.6 ppm	ND - 74 ppm

TABLE 3 (Cont'd)

SUMMARY TABLE OF CONCENTRATION RANGES FOR VOLATILES, ACID/BASE NEUTRAL EXTRACTABLES AND METALS DETECTED IN UNSATURATED AND SATURATED SOILS DURING THE 1986 SITE INVESTIGATIONS

Compound	Concentration Ranges	
	Unsaturated Soil	Saturated Soil
Acid/Base Neutrals (Cont'd)		
Di-n-octylphthalate	ND - 210 ppm	ND - 2.3 ppm
Benzo(a)pyrene	ND - 9.4 ppm	ND - 87 ppm
Indeno(1,2,3-c,d)pyrene	ND - 11 ppm	ND - 84 ppm
Benzo(g,h,i)perylene	ND - 5.8 ppm	ND - 53 ppm
Acenaphthene	ND - 1.5 ppm	ND - 1.7 ppm
N-nitrosodiphenlyamine[1]	-	ND - 2.8 ppm
Benzo(b)fluoranthene	ND - 3.6 ppm	ND - 76 ppm
Benzo(k)fluoranthene	-	ND - 58 ppm
4-Methylphenol	-	ND - 0.67 ppm
Dibenzo(a,h)anthracene	ND - 2.2 ppm	ND - 1.4 ppm
1,2-Dichlorobenzene	ND - 19 ppm	-
Metals		
Arsenic	ND - 87 ppm	ND - 25 ppm
Cadmium	ND - 31 ppm	3 - 4 ppm
Lead	89 - 855 ppm	7.2 - 270 ppm
Nickel	ND - 89 ppm	ND - 57 ppm
Zinc	44 - 485 ppm	29 - 274 ppm
Silver	-	ND - 17 ppm
Chromium	15 - 113 ppm	10 - 68 ppm
Mercury	ND - 1.4 ppm	0.1 - 0.6 ppm

1 - Compound cannot be distinguished from diphenylamine.

TABLE 4

SUMMARY TABLE OF CONCENTRATION RANGES
FOR PRIORITY POLLUTANTS DETECTED
IN MONITORING WELL WATER SAMPLED
DURING THE 1985 SITE INVESTIGATIONS

Compound	Concentration Range	
	Shallow Groundwater	Deep Groundwater (Below Clay Layer)
Toluene	ND-280,000 ppb	ND-6 ppb
Xylene	ND-12,000 ppm	-
Methylene Chloride	ND-3,000 ppb	-
Trichloroethylene	ND-2000 ppb	ND-7 ppb
Chlorobenzene	-	ND-88 ppb
1,1-Dichloroethane	ND-5 ppb	ND-14 ppb
2-Methlynaphthalene*	ND-1500 ppb	-
Naphthalene*	ND-300 ppb	-
Arsenic	ND-76 ppb	-
Barium	ND-646 ppb	ND-261 ppb
Chromium	-	ND-12 ppb
Lead	ND-18 ppb	ND-12 ppb
Nickel	ND-131 ppb	-
Vanadium	ND-94 ppb	57-76 ppb
Zinc	ND-156 ppb	23-45 ppb

* - Qualified data

TABLE 7

SUMMARY TABLE OF CONCENTRATION RANGES
FOR VOLATILES, PESTICIDES/PCBs AND METALS DETECTED
ABOVE THE DETECTION LIMIT IN BUILDINGS SAMPLED
DURING THE 1985 SITE INVESTIGATIONS

Compound	B-1	B-7	B-10	B-11	B-RED
Trichloroethylene	1.5 ppm	1.5 ppm	1.6 ppm	2.6 ppm	1.7 ppm
Toluene	1.2 ppm	1.8 ppm	-	-	-
Xylene	1.0 ppm	15.0 ppm	-	0.6 ppm	-
Ethylbenzene	-	3.8 ppm	-	-	0.9 ppm
Chlordane	-	-	-	-	80 ppm
DDD	-	-	1.1 ppm	-	-
Arochlor1248	-	-	-	32 ppm	-
Anochlor 1254	17 ppm	2.7 ppm	-	24 ppm	-
Barium*	4650 ppm	6090 ppm	3820 ppm	5200 ppm	852 ppm
Chromium*	428 ppm	162 ppm	64 ppm	288 ppm	313 ppm
Lead*	4379 ppm	3360 ppm	3540 ppm	1540 ppm	1780 ppm
Nickel*	80 ppm	84 ppm	-	201 ppm	62 ppm
Vanadium*	99 ppm	65 ppm	-	-	-
Zinc*	10500 ppm	7250 ppm	3140 ppm	1460 ppm	6710 ppm
Cadmium*	17 ppm	96 ppm	7.3 ppm	14 ppm	146 ppm
Cobalt*	33 ppm	30 ppm	-	-	-

B-1 - Building B-1; probable former maintenance/pipe shop/storage and limited production/process area.

B-7 - Building B-7; probable former process/production building and electrical storage facility.

B-11 - Building B-11; probable former storage/mechanical maintenance area.

B-RED - Building B-RED; probable shipping/receiving/short term storage area.

* - Qualified data

that these vessels may be contaminant sources. The two base/neutral compounds present in the shallow aquifer would have been used in the manufacture of some of the facility's products.

Generally, the pesticides present at the Syncon Resins site were found in soils adjacent to former drum storage areas and in the building dust and dirt in former storage and shipping-receiving buildings. Pesticide contamination in the soil appeared to be a surficial phenomenon with the highest concentrations cccurring in unsaturated soils. The distribution of pesticide contamination in soils simply suggests spillage, but bears no apparent connection with resin plant operations.

PCB contamination at the Syncon Resins site is restricted to lagoon sediments, dirt and dust samples from former production/process buildings, and one soil area. It was also found in eight tanks (Table 1) and over 75 drums during the 1984 removal action. Again, there is no apparent connection between this contaminant (PCBs) and alkyd resin manufacturing.

While metal contamination was present in all non-air sample matrices, elevated individual metal concentrations exhibited distinct on-site distributional patterns within certain matrices. In soils, the highest metal concentrations were generally present within the western one-third of the site near the Passaic River and adjacent to former drum/tank storage areas. Spillage onto the soil in the drum/tank storage areas is the most probable cause of this contamination. In contrast, inorganic contamination of the shallow aquifer showed no specific distributional pattern except for arsenic, which also tended to be highest in surficial soils in the northern half of the site.

In general, inorganic constituents within the deep aquifer were metals not found within the shallow aquifer. Excluding barium and zinc, no other metals within the deep aquifer were detected in the shallow ground water above the clay layer, suggesting that the clay layer serves as an effective barrier to vertical migration.

The lagoon sediments and the building dirt/dust contain similar relative proportions of certain metal concentrations that would have been utilized at the Syncon Resins site during its operation. Thus, the bulk of the metal contamination at the Syncon Resins site may stem from improperly handled raw materials or by-products, especially with regard to catalysts and pigments.

The Syncon Resins site exhibits extensive chemical contamination of organic compounds, pesticides, PCBs and metals. Although some specific contaminants were concentrated in particular on-site

areas, all of the apparent site-related contaminants were restricted to matrices located above the clay layer beneath the site.

Chemical constituents were present in the confined aquifer beneath the clay layer. These constituents, however, appears to stem from an off-site source.

The chemical contamination present at the Syncon Resins site is apparently restricted from vertical movement due to the clay layer beneath the site. However, lateral movements of contaminants within the shallow aquifer are not restricted. The ground water flow within the shallow aquifer can transport these contaminants to the Passaic River. This ground water movement, in conjunction with tidal flushing, is one of the principal means of off-site transport of contaminants.

PUBLIC HEALTH RISKS

Based on the geological, hydrological, and chemical contaminant characteristics of the Syncon Resins site, eleven potential exposure pathways have been identified. These pathways include ingestion, inhalation, and direct contact with various media.

Three on-site matrices (unsaturated soil, lagoon sediment, and building dirt and dust) exceeded health-based criteria for organic and metal contaminants and pose a health risk via direct contact and ingestion.

In addition to the various on-site matrices posing potential health risks, some of the on-site tanks and vessels contain materials that could pose potential health risks to exposed populations if left on-site.

ENFORCEMENT

A claim for cleanup costs incurred at the site has been filed in the Bankruptcy proceedings of Syncon Resins, Inc. A cost recovery action for part of these costs has been initiated against Benjamin A. Farber, former owner of the entire Syncon Resins site and present owner of a portion of the site.

An investigation is in progress to identify additional potentially responsible parties (PRP's) for purposes of potential cost recovery and enforcement actions in regard to future costs of remedial activities. Any such additional parties identified as PRP's will be included in all actions for recovery of cleanup costs and will be sent notice letters offering them the opportunity to perform the design and construction activities recommended in this document before EPA and NJDEP make a decision to fund any future work.

DESCRIPTION OF REMEDIAL ALTERNATIVES

The feasibility study process involves, as a first step, selecting technologies that are appropriate for remedying the public health and environmental concerns associated with a particular site. In the case of the Syncon Resins site, the remedial objective is to control the potential release of contaminants from the site.

The following remedial objectives were established as a result of the risk assessment performed for the site:

- Develop mitigative measures to prevent exposure of humans to organic and metal contaminants within the unsaturated soil, lagoon sediments, and building dirt/dust through direct contact and ingestion exposure routes;

- Implement mitigative measures to eliminate the potential hazard to exposed populations caused by the asbestos material covering the on-site tanks and vessels and the chemical materials remaining within them.

While the contaminated, on-site shallow ground water poses little risk of direct contact or ingestion, it eventually flows into the Passaic River and so constitutes a discharge of a hazardous substance. Various State statutes require that the NJDEP implement or require the implementation of corrective action programs where the waters of the State have been significantly degraded by hazardous substances.

The following remedial objectives were established as a result of NJDEP's policy on maintaining or improving existing ground water and receiving water conditions:

- Implement mitigative measures to remediate the contaminated ground water within the shallow aquifer to levels identified in the following guidance documents:

- Ground water criteria for Class GW3 aquifers (N.J.A.C. 7:9-6);

- NJPDES effluent limitations for discharge into the Passaic River (N.J.A.C. 7:9-5); and

- Best Available Technology (BAT) Limitations, Option III for Organics and Plastics and Synthetic Fibers, 40 CFR Parts 414 and 416, Proposed Rule.

° Develop mitigative measures to remediate the contaminated saturated soils above the continuous clay layer.

Considering available technologies and the site's existing physical conditions, several remedial alternatives were developed and are listed in Table 8, along with their capital costs, operation and maintenance costs, and total present worth costs. A summary of treatment, storage, and disposal methodologies for these alternatives is shown in Table 9.

Present worth costs for all alternatives were calculated using a thirty-year life cycle as a basis for comparison.

ALTERNATIVE 1 - NO ACTION

The no action alternative involves installation of a security fence around the perimeter of the site, removal of structurally unsafe buildings to an off-site landfill under the Resource Conservation and Recovery Act (RCRA), sealing of other on-site buildings, and long-term monitoring of the integrity of buildings, tanks, and air and ground water matrices. This alternative does not remove or reduce contaminant levels on-site. Hence, the risk and exposure pathways are not mitigated and the future reuse of the site would be restricted.

ALTERNATIVE 2 - REMOVE BUILDINGS, TANKS, AND SOIL, AND OFF-SITE WASTE DISPOSAL

This alternative involves the removal of all buildings, tanks, tank contents, piping, and other structures, as well as soil and sediment exceeding the cleanup criteria for off-site treatment or disposal. Uncontaminated soil would remain on-site. This remedial alternative would exceed applicable and relevant Federal public health and environmental standards and would allow for future reuse of the property.

a. Tanks

The total amount of liquid and solid wastes in the on-site tanks is estimated to be 167,000 gallons. A total of 69 tanks are currently considered to be hazardous based on the following criteria:

TABLE 8

CAPITAL, OPERATION AND MAINTENANCE (O&M), AND PRESENT WORTH COSTS

1986 Dollars (millions)

Remedial Alternatives	Capital	Year	Annual O&M	Present Worth O&M	Total Present Worth Cost
1. No Action	0.4	1-30	0.08	0.8	1.2
2. Remove Buildings, Tanks, and Soil, with Off-Site Waste Disposal	116.4	1-5 6-30	0.078 0.017	0.4	116.8
3. Decontaminate Buildings and Tanks, On-Site Incineration, and On-Site Soil Washing	53.9	1-5 6-30	0.08 0.019	0.4	54.3
4a. Decontaminate Buildings and Tanks, Impermeable Cap, and Leachate and Ground Water Control	5.2	1-30	0.213	2.0	7.2
4b. Decontaminate Buildings and Tanks, Permeable Cap, and Passive Flushing with Leachate and Ground Water Treatment**	5.6	1-30	0.209	2.0	7.6*
5. Remove Buildings and Tanks, and Site Encapsulation	20.5	1-30	0.103	1.0	21.5
6. Remove Buildings and Tanks, On-Site Chemical Fixation of Soil, and On-Site RCRA Landfill	55.2	1-5 6-30	0.092 0.032	0.5	55.7

* Subsequent additional actions to enhance the removal of contaminants from soils may increase the overall cleanup cost for the site by $10-20 million.

** This alternative was not included in the RI/FS as such, see pages 35-36 for further details.

TABLE 9

SUMMARY OF TREATMENT, STORAGE AND DISPOSAL METHODOLOGIES

ITEM	ALTERNATIVE					
	1	2	3	4	5	6
BUILDINGS						
SECURE	•			•		
DECONTAMINATE			•	•		
DEMOLISH	• (OIL BLDG)	•	•		•	•
TANKS						
SECURE	•					
DECONTAMINATE			•	•	•	
DEMOLISH		•	•		•	•
UNSATURATED SOILS						
ENCAPSULATE				• (PARTIAL)	•	
OFF-SITE HAZARDOUS		•				
OFF-SITE NON-HAZARDOUS		•				
ON-SITE HAZARDOUS				•	•	•
ON-SITE NON-HAZARDOUS			• (SOIL WASHING)			• (CHEMICAL FIXATION)
SATURATED SOILS						
ENCAPSULATE				• (PARTIAL)	•	
OFF-SITE HAZARDOUS		•				
OFF-SITE NON-HAZARDOUS		•				
ON-SITE HAZARDOUS					•	•
ON-SITE NON-HAZARDOUS			• (SOIL WASHING)	• (NATURAL FLUSHING)		• (CHEMICAL FIXATION)
GROUNDWATER, DECONTAMINATION WATER AND WASTEWATER						
ON-SITE			• (SOIL WASHING INCL GROUNDWATER)	• (GROUND WATER DECON WATER)		
OFF-SITE		• (GROUNDWATER)				
DISPOSAL OF TANK CONTENTS/ DECON MATERIAL/BUILDINGS/ TANKS						
OFF-SITE HAZARDOUS	• (OIL BLDG)	•		•	•	• (LIQUIDS)
OFF-SITE NON-HAZARDOUS		•	•	•	•	•
ON-SITE HAZARDOUS						• (TANKS & BLDGS)
ON-SITE NON-HAZARDOUS			• (INCINERATION SOIL WASHING)			
OTHER		DEWATER SATURATED SOIL		CONCRETE BARRIER ALONG RIVER		ON-SITE RCRA LANDFILL
MONITORING-LONG TERM GROUNDWATER AND AIR	•	•	•	•	•	•

ALTERNATIVE NO. DESCRIPTION:

1. NO ACTION
2. REMOVE BUILDINGS, TANKS AND SOIL WITH OFF-SITE WASTE DISPOSAL
3. DECONTAMINATE AND DEMOLISH BUILDINGS AND TANKS, ON-SITE INCINERATION AND ON-SITE SOILS WASHING
4. DECONTAMINATE BUILDING AND TANKS, LEACHATE AND GROUNDWATER CONTROL
5. REMOVE BUILDINGS AND TANKS, OFF-SITE RCRA LANDFILL AND SITE ENCAPSULATION
6. REMOVE BUILDINGS AND TANKS WITH ON-SITE CHEMICAL FIXATION OF SOIL AND ON-SITE RCRA LANDFILL

- Flammable contents (flash point below 60°C)
- PCB contamination
- pH 2.0 and below or 12.0 and higher
- Asbestos insulation of the tank

Liquid hazardous wastes would be pumped from the tanks and transferred for off-site treatment such as incineration. Non-hazardous waste materials would be transferred off-site for treatment at an industrial wastewater treatment plant with the appropriate permits. All tanks would be demolished. The tanks and rubble which are not contaminated with hazardous waste would be transferred to a permitted off-site sanitary landfill. Contaminated tanks and rubble would be removed and transferred to an off-site RCRA permitted landfill facility.

b. Buildings

Based upon limited analytical data, all thirteen buildings on the site are considered contaminated. Seven buildings were not sampled due to extensive visible signs of resin-like encrustation on interior and exterior walls, floors and interior ancillary items. The Oil Building was not sampled as it was judged structurally unsound. The five buildings sampled were contaminated at levels exceeding the maximum acceptable soil concentrations for contaminants as presented in Table 10. These recommended cleanup criteria were developed under the Environmental Cleanup Responsibilities Act (ECRA).

All buildings would be demolished and the resulting rubble and building contents would be disposed of in an off-site RCRA landfill.

c. Soils and Sediments

To distinguish between contaminated and non-contaminated soils, the cleanup criteria identified in Table 10 were utilized. It was assumed these criteria would apply to all soils and lagoon sediments on-site. Based on a preliminary engineering judgment, approximately 50 percent of the saturated soil, 100 percent of the lagoon sediment, and 85 percent of the unsaturated soil at the site above the clay layer is contaminated.

After removal of tanks and buildings, excavation activities would begin. A sampling program would be implemented concurrent with the excavation to determine the extent of contamination. Non-contaminated soil would remain

TABLE 10

CLEANUP CRITERIA FOR SOILS, BUILDING DIRT/DUST, AND LAGOON SEDIMENTS

Contaminant	Cleanup Criteria Concentration*
Total Volatile Organics	1 ppm
Metals	
Chromium	15 ppm
Lead	317 ppm
Mercury	1 ppm
Nickel	18 ppm
Zinc	196 ppm
Arsenic	20 ppm
Cadmium	3 ppm
Beryllium	Not Detected
PCBs	5 ppm
Benzo-a-pyrene	10 ppm
Base Neutrals (as a class)	100 ppm

*Criteria based on the State of New Jersey Environmental Cleanup Responsibilities Act (ECRA).

on-site. Contaminated soil would be disposed of off-site in a RCRA landfill. Contaminated water from saturated soil dewatering would be collected and treated off-site at an appropriately permitted facility. The site would be restored by filling and grading with a storm runoff drainage system.

d. Monitoring

A long-term monitoring program for ground water would be performed quarterly.

ALTERNATIVE 3 - DECONTAMINATE BUILDINGS AND TANKS, ON-SITE INCINERATION AND ON-SITE SOIL WASHING

This alternative would provide on-site incineration for incinerable contaminated waste and on-site soil washing for unincinerable contaminated waste. Incineration uses high temperature oxidation to degrade organic substances into products that generally include CO_2, H_2O, NO_x and HCl vapors, and ash. The undesirable products of the thermal destruction (e.g., particulates, SO_2, NO_x, HCl, and products of incomplete combustion) will be removed by air pollution control equipment to prevent their release to the atmosphere. Contaminated materials containing high metal concentrations may not be suitable for incineration. If so, soil washing would be an alternative on-site treatment method. Soil washing processes would leach both organic and inorganic contaminants from soils and the recovered wastewater would be treated by such processes as physical-chemical precipitation, air stripping and activated carbon adsorption. The combination of incineration and soil washing would provide complete on-site treatment for the hazardous wastes and contaminated matrices identified at the site. This remedial alternative would provide direct source control and would attain or exceed the applicable and relevant Federal public health and environmental standards. Upon completion of this alternative, the property would likely be suitable for reuse.

a. Tanks

All waste from the tanks would be removed and segregated into hazardous and non-hazardous groups. The hazardous waste would be treated by on-site incineration and the non-hazardous waste would be treated by the on-site wastewater treatment facility. Tanks containing hazardous material would be decontaminated, demolished, and disposed of in an off-site sanitary landfill or as scrap metal. Tanks containing non-hazardous material would not be decontaminated but would be disposed of in an off-site sanitary landfill or sold as scrap.

An estimated seven of the 47 insulated tanks utilize an asbestos material. The asbestos insulation would be

removed and disposed in an off-site RCRA landfill. Insulation from the remaining forty tanks will be tested, removed, and disposed in an off-site sanitary landfill.

It is proposed to decontaminate the tanks through repeated hydro-blasting and water-washing. The first application would involve the application of high pressure water. The second pass, if required, would involve the application of a water detergent rinse, while the final pass would involve the application of a water rinse. Liquid and solid wastes from the decontamination would be handled in the wastewater treatment system.

All above-ground pipes, conduit racks, tank dikes, and revetments would be considered contaminated and be transferred to an off-site RCRA storage facility.

b. Buildings

Each building, with the exception of the Oil Building, would be decontaminated, after which all buildings would be demolished. Decontamination would first involve vacuuming and wiping. For those areas requiring additional decontamination, grit blasting would be utilized. Contaminated waste generated during building decontamination would be treated on-site using incineration and/or the wastewater treatment system. Demolition rubble from the decontaminated buildings would be disposed of in an off-site sanitary landfill. Oil Building rubble and building contents would be disposed of separately in an off-site RCRA landfill.

c. Soils and Sediments

As described in Alternative 2, contaminated soil would be excavated as indicated by the sampling results. Nearly all of the contaminated soil would be treated on-site by soil washing. Highly contaminated soil and sediments would be dewatered and incinerated on-site. After treatment, the decontaminated soil would be re-deposited on-site with additional clean soil.

d. Monitoring

A long-term ground water monitoring program would be performed quarterly.

ALTERNATIVE 4a. - DECONTAMINATE BUILDINGS AND TANKS, IMPERMEABLE CAP, AND LEACHATE AND GROUND WATER CONTROL

This alternative would provide for the decontamination of tanks and buildings, collection and on-site treatment of leachate and

contaminated ground water, and partial capping of the site. The leachate/ground water control system is intended to prevent the discharge of contaminants to the Passaic River. The on-site ground water treatment system would utilize physical-chemical precipitation, air stripping and activated carbon adsorption, and would discharge to the Passaic River. Thirteen of the fifteen acres affected (excluding structure footprints) would be provided with a clay/ soil cover to reduce surface runoff and rainfall infiltration. The cover would consist of one foot of clay and one foot of topsoil, which would be graded. This remedial alternative would attain the applicable and relevant Federal public health and environmental standards. However, this alternative would not allow future reuse of the property.

a. Tanks

All hazardous waste from the tanks would be removed and transferred off-site for appropriate disposal, as discussed in Alternative 2. Non-hazardous tank liquids would be treated on-site in the ground water treatment system. The empty tanks would be decontaminated and would be left on-site. Wastewater from tank decontamination would also be treated on-site in the leachate/ground water treatment system. All above-ground pipes, conduit racks, and insulation would be classified as hazardous or non-hazardous and disposed of accordingly.

b. Buildings

All buildings, except the Oil Building, would be decontaminated as described in Alternative 3. The Oil Building would be demolished and disposed of in an off-site RCRA landfill along with the contaminated contents from the other buildings.

c. Soils and Sediments

A downgradient subsurface drain system (Figure 3) would be installed along the edge of the Passaic River and along portions of the northern and southern property line. This drain system would be approximately 1,000 feet in length including a subsurface concrete barrier. The purpose of this drain system would be to collect leachate and contaminated ground water for treatment. The purpose of the concrete wall is to prevent tidal intrusion of river water onto the site. The collected wastewater would be treated on-site.

d. Monitoring

A long-term ground water monitoring program would be implemented and would include quarterly sampling.

ALTERNATIVE 4A
SUBSURFACE AND SURFACE DRAINAGE SYSTEMS
AND SURFACE COVER

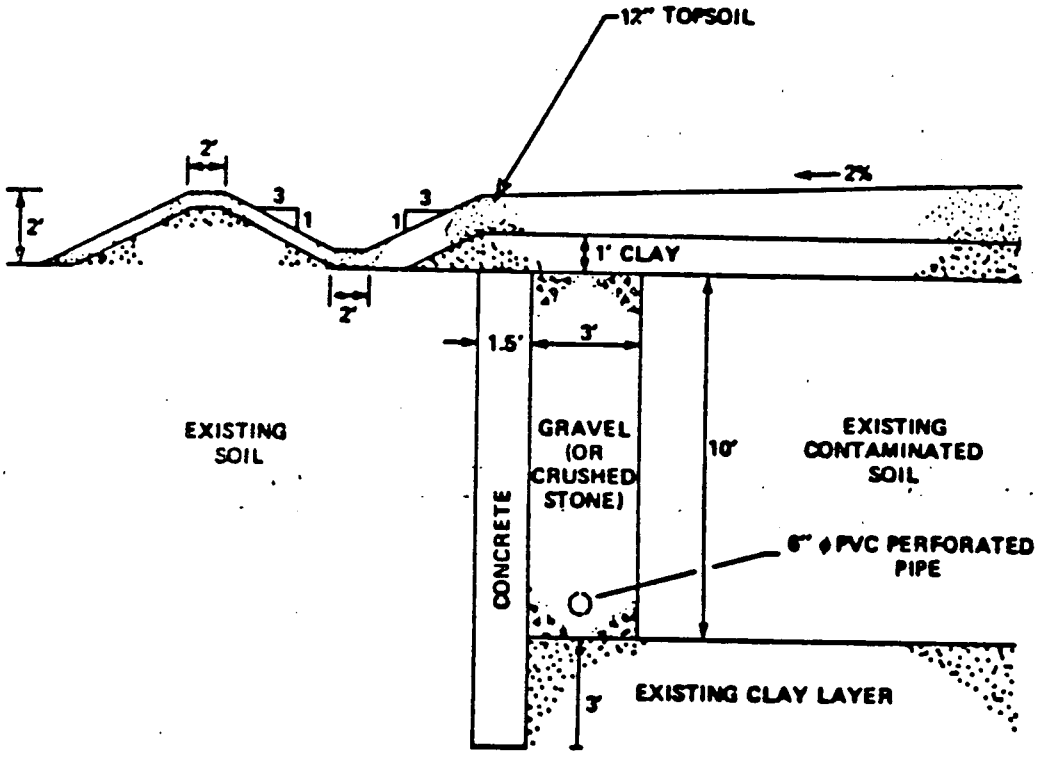


FIGURE 3

ALTERNATIVE 4b. - DECONTAMINATE BUILDINGS AND TANKS, PERMEABLE CAP, PASSIVE FLUSHING, AND LEACHATE AND GROUNDWATER TREATMENT

Alternative 4b was developed to evaluate enhanced flushing to cleanse the saturated and unsaturated soils, and to remove the more significant soil contamination from the site. The goal of Alternative 4b is to result in a site that could be considered for future reuse and that would attain all applicable and relevant State requirements for that reuse (i.e. ECRA, ground water quality). The major differences between Alternative 4a and Alternative 4b consist of substituting a crushed stone cover over the open areas of the site instead of the soil/clay cap, and excavation of approximately 700 cubic yards (cy) of sediment and soils beneath the two lagoons. To better prepare the site for future application of in-situ technologies, approximately 2,000 cy of highly contaminated soils around the site will be excavated. This alternative is an operable unit. Future studies will be undertaken to evaluate further enhancement of the site cleanup to attain this alternative's goal.

° Tanks, Vessels, and Buildings

The existing above-ground structures, including buildings, tanks, and storage vessels, would be decontaminated as appropriate. The Oil Building would be demolished and disposed of in an off-site RCRA landfill. Hazardous wastes will be removed and transferred off-site for appropriate disposal, as discussed in Alternative 2. All non-hazardous aqueous wastes will be treated in an on-site treatment system. Non-hazardous solids will be disposed of at a sanitary landfill.

° Soils and Lagoon Sediments

Lagoon sediments and highly contaminated surface soils will be removed and transferred off-site for disposal or treatment at an approved hazardous waste treatment, storage, or disposal (TSD) facility. The surface of the site will then be covered with gravel or crushed stone to enhance natural flushing of underlying contaminants. The contaminated ground water would be collected and treated on-site.

° Ground Water

A containment system consisting of a cut-off wall and a concrete retaining wall will be constructed partially around the site and adjacent to the river. Both walls will be keyed into the underlying clay layer to prevent river water from entering the site and contaminants from migrating off-site. A trench drain system will collect contaminated ground water. An on-site wastewater treatment system will treat collected surface and ground water and discharge the treated effluent to the Passaic River.

° New Technologies

After installation of the on-site systems described above, a variety of technologies will be investigated to further enhance the natural flushing action, so as to attain the goal of potential future reuse of the site. The technologies to be evaluated include active flushing with or without additives, in-situ biological treatment, and in-situ vitrification.

° Monitoring

A long-term monitoring program will be implemented after the completion of remedial action to protect public health and the environment. The effectiveness of the site remedy will be evaluated throughout the planned action and potential future modifications.

ALTERNATIVE 5 - REMOVE BUILDINGS AND TANKS, AND SITE ENCAPSULATION

This alternative would remove all tanks and buildings to appropriate off-site hazardous and sanitary waste disposal facilities and encapsulate the entire site. Encapsulation would separate the contaminants from the surrounding hydrogeologic regime and would prevent further migration of contaminants off-site. The lateral barrier wall would be keyed into the clay layer beneath the site to provide an effective bottom barrier. Lateral barrier walls may consist of a slurry wall, grout curtains, or steel sheet piling. The materials selected for use in barrier construction should withstand any chemical attack by the contained contaminants. This remedial alternative would attain the applicable and relevant Federal public health and environmental standards. However, the site would be restricted from any potential future reuse.

a. Tanks

All waste from tanks would be removed and transferred for appropriate off-site disposal as discussed in Alternative 2. Tanks having hazardous residues would be decontaminated and demolished as described in Alternative 3. The decontaminated, demolished tanks would be disposed of in an off-site sanitary landfill or sold as scrap. Tanks containing non-hazardous wastes would not be decontaminated but would be demolished and disposed of in an off-site sanitary landfill or sold as scrap.

b. Buildings

All thirteen buildings located on the site would be considered contaminated and would be demolished. Service

facilities, including ductwork, process piping, and unit heaters, would also be considered contaminated and would be demolished. The resulting rubble and debris would be disposed of in an off-site RCRA landfill.

c. Soil and Sediments

To contain the remaining contaminated soils and ground water, the entire site would be enclosed with an impermeable perimeter barrier wall keyed into the underlying impermeable clay layer. A parallel concrete barrier would be installed adjacent to the impermeable barrier along the Passaic River to furnish protection from tidal action. The site would then be covered with a RCRA cap (Figure 4). These measures would effectively encapsulate the contaminated soil and ground water remaining on the site.

d. Monitoring

A long-term ground water monitoring program would be performed quarterly.

ALTERNATIVE 6 - REMOVE BUILDING AND TANKS, ON-SITE CHEMICAL FIXATION OF SOIL, AND ON-SITE RCRA LANDFILL

This alternative would remove hazardous tanks and contaminated buildings and transfer them to an on-site RCRA landfill facility. Liquid hazardous waste from the tanks would be transferred off-site for treatment. In addition, contaminated soil would be removed, mixed with chemical additives for waste fixation, and used as part of the containment system. Since the contaminated soils on-site contain an average of less than one-tenth of a percent of organic contaminants, chemical fixation which limits the mobility of chemical constituents is feasible.

As shown in Figure 5, the on-site RCRA landfill will be isolated by the solidified soil above and around its perimeter, and by a double 40 mil synthetic liner and the existing clay layer below. A leachate collection system and leak detection system will be installed during construction of the landfill. This remedial alternative would attain the applicable and relevant Federal public health and environmental standards. However, future site use would be restricted.

a. Tanks

The wastes removed from the tanks would be disposed of in an off-site treatment facility as described in Alternative 2. The empty hazardous tanks would be demolished and disposed

ALTERNATIVE 5

RCRA CAPPING SYSTEM

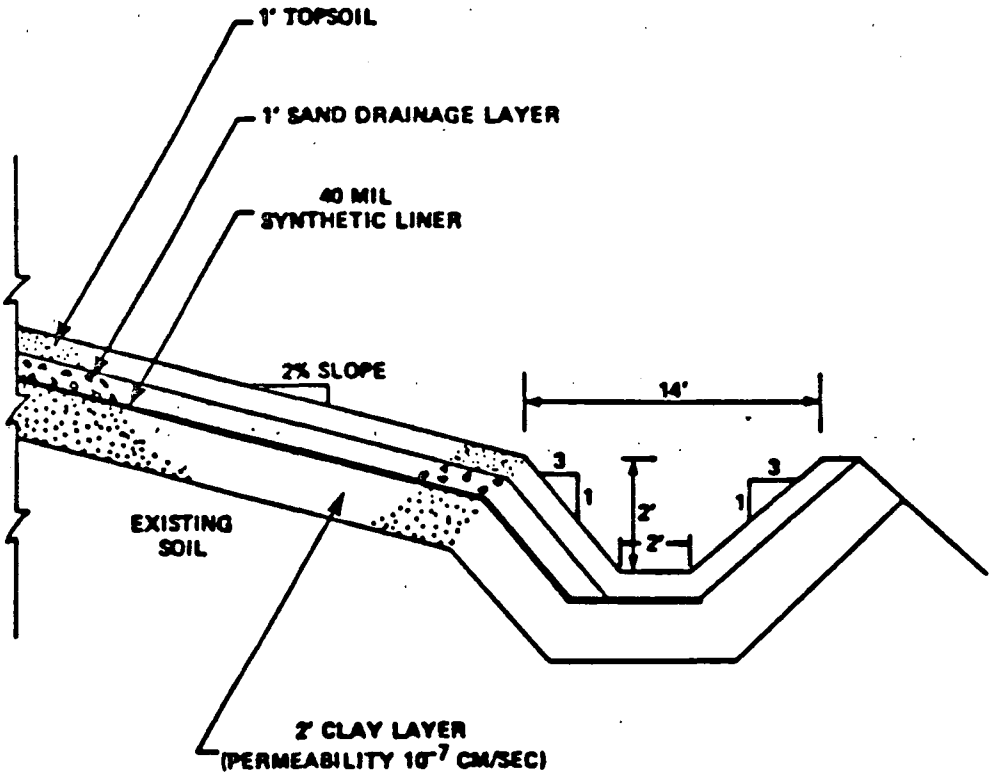


FIGURE 4

ALTERNATIVE 6

RCRA LANDFILL PROFILE

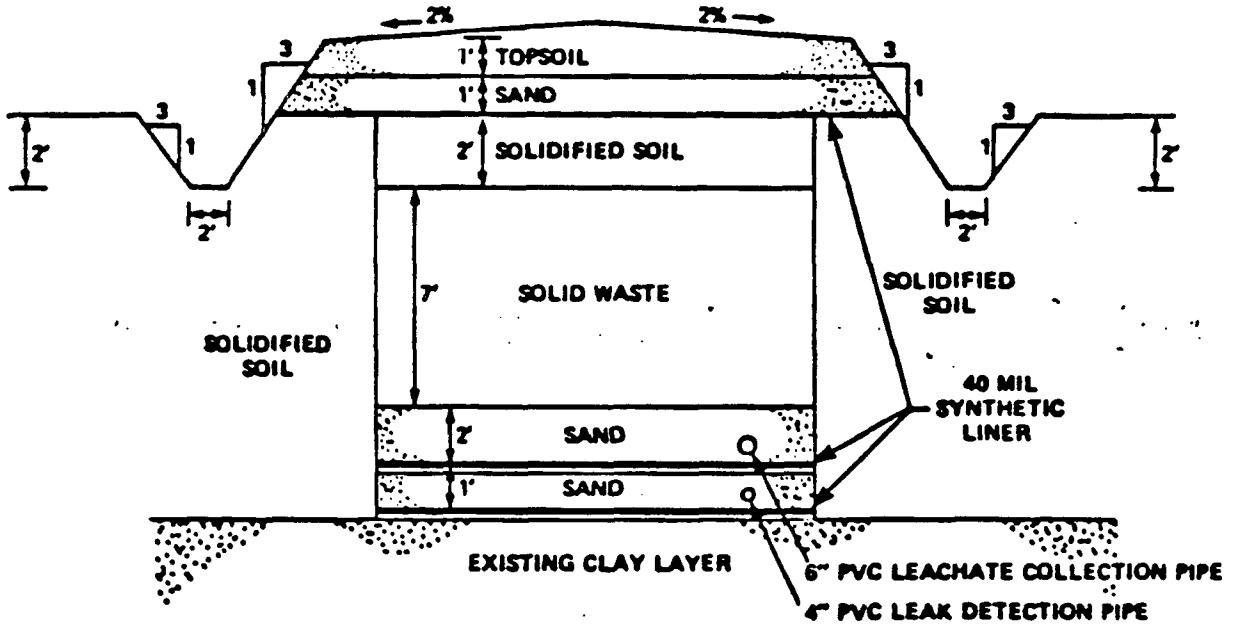


FIGURE 5

of in the on-site RCRA landfill. The empty non-hazardous tanks would be demolished and disposed of off-site in a sanitary landfill.

b. Buildings

The buildings would not be decontaminated but demolished and disposed of in the on-site RCRA landfill. It is estimated that approximately two acres would be required for the disposal of the demolished buildings and tanks.

c. Soil and Sediments

All soil above the clay layer, including the lagoon sediments, would be excavated and treated on-site by chemical fixation. The soil would be blended with a chemical binder such as lime or sodium silicate, and Portland cement. The blended soil would be deposited and cured in place. Chemical fixation is expected to minimize leachate generation. The site would then be restored by regrading to accommodate storm water runoff.

d. Monitoring

A long-term ground water monitoring program would be performed quarterly.

EVALUATION OF ALTERNATIVES

To ensure that the remedial objectives for the protection of public health and the environment are fulfilled, the alternatives developed were evaluated in terms of technical, environmental, public health, and cost-effectiveness, as well as for their institutional requirements which include the appropriate and relevant State and Federal environmental regulations.

The no action alternative does not remove or reduce contaminant levels on-site. Therefore, the risks and exposure pathways, which include direct contact, ingestion, and inhalation, are not mitigated. In the absence of contaminant removal from the unsaturated and saturated zones, the potential remains for further contamination of the shallow aquifer and the Passaic River. Tank leakage may also contaminate the soil and ground water. This alternative, while minimizing access, maintains the negative environmental and public health impacts and so is unacceptable. In addition, this alternative requires that the site is restricted from any future use because of its associated health risk.

Alternative 2 involves the removal of all above-ground structures and contents and contaminated soils for off-site disposal. While eliminating the long-term health risks, the construction activities may result in a short-term exposure to contamination through direct contact and airborne particulate dispersion. Construction-related impacts may be minimized by implementing an effective health and safety plan, a dust control and traffic control plan, and a soil erosion and sediment control plan. This alternative eliminates any site-related contaminant contributions to the shallow aquifer or to the river. Restoration of the site by replacing the contaminated soil with clean soil increases the potential for future reuse.

Alternative 3 results in the removal of contaminated materials from the site via on-site treatment of major waste streams and off-site disposal of some contaminated materials at a RCRA landfill. The benefits include eventual elimination of exposure pathways and reduction of contamination of the ground water and the Passaic River. The potential negative impacts of this alternative involve: air emissions from the incineration operation; direct contact, inhalation, and ingestion of contaminated materials during handling and treatment; and spillage of contaminated soil into the river via erosion or mishandling. Measures can be taken to minimize these negative impacts, including implementation of an air emissions control plan, an effective health and safety plan, and an soil erosion and sediment control plan. Overall, this alternative produces positive environmental and public health impacts and increases the potential for future site reuse.

Alternative 4a involves off-site disposal of hazardous materials, decontamination of tanks and buildings, installation of a clay/soil surface cover and concrete barrier, natural flushing of the saturated soils, and ground water/leachate collection and on-site treatment. The benefits of this alternative include minimizing the direct contact exposure pathway of the unsaturated soils via capping, removal of contamination from buildings and tanks, minimizing construction-related impacts by reducing on-site activities, and a gradual reduction in ground water contamination over the long term. The negative environmental and public health impacts of this alternative include an incomplete sealing of the surface due to the presence of tanks and buildings, and the long-term operation of the ground water/leachate collection and treatment system. Contaminated, unsaturated soils will remain on-site essentially untreated, minimizing the potential for reuse of the site.

Alternative 4b includes off-site disposal of hazardous materials, decontamination of tanks and buildings, removal and off-site disposal of the contaminated sediments and soils beneath and

adjacent to the two lagoons and other "hot spots", a containment system, a permeable cover, passive flushing, and on-site treatment of the leachate/ground water. The benefits of this alternative include minimizing the direct contact exposure pathway of the unsaturated soils, removal of the contamination from buildings and tanks, and minimizing construction-related impacts. The major advantages of this alternative over Alternative 4a is the removal of the more grossly contaminated soils and the promotion of natural flushing, which would result in a more significant reduction of contamination in the ground water and both the saturated and unsaturated soils. The negative environmental and public health impacts of this alternative include the long-term operation of the natural flushing and ground water treatment processes. Future studies will be undertaken to further enhance and accelerate the the cleansing of the site. The implementation of the remedial actions under this alternative and any subsequent remedial action will increase the potential for future reuse of the site.

Alternative 5 involves total site encapsulation after buildings, tanks, dikes, revetments, tank contents, conduits, ductwork, etc. have been disposed of off-site. Under this alternative, the exposure pathways of ingestion, direct contact and inhalation are eliminated, along with site-related contamination of the river. Encapsulation of the site reduces the amount of excavation required, thereby reducing construction-related exposure. This alternative, however, only contains the contaminated soil and ground water and does not treat them. Under this alternative, the potential for site reuse is minimal. In addition, encapsulating the site will affect the ground water flow pattern, which would have a positive health impact and a negative environmental impact.

Alternative 6 involves off-site disposal or treatment of hazardous tank contents, chemical fixation of the unsaturated and saturated soil, and disposal of building rubble, tanks, pipes, ductwork, conduits, and other related materials in an on-site RCRA landfill. While this alternative reduces the exposure pathways of direct contact, ingestion, and inhalation, it does not eliminate them. Securing contaminated materials in the on-site RCRA landfill reduces the potential for site reuse. Chemical fixation reduces the permeability of the soils and hence reduces contaminant migration and leachate generation. Construction activities would temporarily increase exposure by direct contact, ingestion, and inhalation. These impacts, however, can be minimized by the implementation of an effective health and safety plan. In addition, hydrogeologic patterns would change due to the reduced permeability, thus producing a positive health impact and a negative environmental impact.

COMMUNITY RELATIONS

A public meeting was held on September 4, 1986 to present the results of the remedial investigation and feasibility study (RI/FS) and the recommended alternative. Copies of the FS

report were distributed to the public on August 21 but it did not include Alternative 4b per se. However, most of the components which make up this alternative are discussed in the description of Alternative 4a. The modifications to Alternative 4a which produced Alternative 4b, as well as Alternative 4b in toto, were fully explained at the public meeting. In addition, a handout describing Alternative 4b was distributed at that time. No objections to it were raised at the meeting. The public comment period was open until September 11. Responses to all comments raised at the public meeting and in a subsequent letter are included in the Responsiveness Summary (Attachment 1).

RECOMMENDED ALTERNATIVE

In the RI/FS, the six alternatives were evaluated in terms of technical, environmental, and public health effectiveness and institutional requirements, and a matrix was developed to compare the environmental advantages against costs (Table 11). Alternative 4 (or Alternative 4a, as now designated) was determined to be the most cost-effective. In further evaluating this alternative, it was felt that the modifications which eventually led to the development of Alternative 4b may achieve an even more cost-effective, environmentally sound alternative.

The most important of these modifications is the substitution of a crushed stone cover over the open areas of the site instead of the soil/clay cap. This permeable cap would have numerous benefits. It effectively eliminates the public health risk due to direct contact or ingestion of surface soils, yet allows rainwater to flush through the unsaturated and saturated soils to hasten the remediation of the contaminated soils and ground water. It also provides flexibility by providing a good working surface for trucks or heavy equipment, while allowing easy access to the surface, if needed, for subsequent monitoring or the application of new technologies.

Another significant modification involves the excavation and removal of approximately 700 cubic yards of sediment and highly contaminated soils that lie beneath or adjacent to the two lagoons. Finally, approximately 2,000 cubic yards of highly contaminated surface soils will be removed for off-site disposal. The removal of these soils are cost-effective in that they reduce the volume of contaminants to be handled under in-situ treatment methods.

If the design is optimized to its full potential and properly implemented, the passive flushing technique may in itself restore the site to the appropriate cleanup levels. However, innovative technologies will be evaluated to further enhance the ability of flushing to cleanse the soil of contaminants. Although the costs of any future remedial actions cannot now be accurately estimated, it is believed that the added costs

TABLE 11

OVERALL COST-EFFECTIVENESS RATING OF ALTERNATIVES

REMEDIAL ALTERNATIVE	COST EFFECTIVENESS (PRESENT WORTH) (1)	TECHNICAL EFFECTIVENESS (2)	ENVIRONMENTAL EFFECTIVENESS (3)	PUBLIC HEALTH EFFECTIVENESS (4)	INSTITUTIONAL REQUIREMENTS (5)	TOTAL EFFECTIVENESS (6) (2)+(3)+(4)+(5)=(6)	TOTAL COST-EFFECTIVENESS RATING (7) (1) x (6)	OVERALL COST-EFFECTIVENESS RANKING
1	5	4	1	1	1	7	35	4
2	1	3	5	5	5	18	18	5
3	3	2	4	3	5	14	42	3
4	5	4	3	2	3	12	60	1
5	4	4	3	3	4	14	56	2
6	3	3	4	4	5	14	42	3

REMEDIAL ALTERNATIVES

ALT. 1 – NO ACTION

ALT. 2 – REMOVE BUILDINGS, TANKS AND SOIL AND OFF-SITE DISPOSAL

ALT. 3 – DECONTAMINATE BUILDINGS AND TANKS, ON-SITE INCINERATION, AND ON-SITE SOIL WASHING

ALT. 4 – DECONTAMINATE BUILDINGS AND TANKS, AND LEACHATE AND GROUND WATER CONTROL

ALT. 5 – REMOVE BUILDINGS AND TANKS, AND SITE ENCAPSULATION

ALT. 6 – REMOVE BUILDINGS AND TANKS, ON SITE CHEMICAL FIXATION OF SOIL, AND ON-SITE RCRA LANDFILL.

LEGEND

EFFECTIVENESS	RANKING
1 – LOWEST RATING	1 – HIGHEST RANKING
5 – HIGHEST RATING	5 – LOWEST RANKING

(see footnote on Table 8) would still make this remedial alternative cost-effective in comparison to the others. Should none of the methods evaluated under Alternative 4b be successful in attaining the applicable cleanup levels, the site would still be nearer to these levels than under any other alternative, except total excavation and removal of contaminated material which is prohibitively expensive.

Therefore, Alternative 4b was selected as the recommended alternative and includes the following components:

° Tanks, Vessels, and Buildings

The existing above-ground structures, including buildings, tanks, and process vessels, will be decontaminated, as appropriate. The Oil Building would be demolished and disposed of in an off-site RCRA landfill. Hazardous wastes will be removed off-site to an approved hazardous waste treatment, storage, or disposal (TSD) facility. All non-hazardous aqueous wastes will be treated in an on-site wasteater treatment system. Non-hazardous solids will be disposed of at a sanitary landfill.

° Soils and Lagoon Sediments

Lagoon sediments and highly contaminated soils will be removed and transported to an approved hazardous waste TSD facility. The surface of the site will then be covered with gravel or crushed stone to enhance natural flushing of underlying contaminants in the soil and ground water, before collection and treatment.

° Ground Water

A containment system consisting of a cut-off wall and a concrete retaining wall will be constructed partially around the site and adjacent to the river. Both walls will be keyed into the underlying clay layer to prevent river water from entering the site and contaminants from migrating off-site. A down-gradient drain system will collect contaminated ground water. An on-site wastewater treatment system will treat collected surface and ground water and discharge the treated effluent to the Passaic River.

° New Technologies

After installation of the on-site systems described above, a variety of technologies will be investigated to further enhance the natural flushing action. The technologies which would be evaluated include active flushing with or without additives, in-situ biological treatment, in-situ vitrification, etc.

° Monitoring

A long-term monitoring program will be implemented after the completion of remedial action to protect public health and the environment. The effectiveness of the site remedy will be evaluated throughout the planned action and any potential future modifications.

OPERABLE UNITS

The recommended alternative will be the first operable unit for this site. Depending on the results of the study to enhance the natural flushing process, a future operable unit may implement the study findings.

COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS AND REQUIREMENTS

The recommended alternative, as envisioned, would be in full compliance with all applicable existing environmental statutes, save the exceptions discussed below.

Resource Conservation and Recovery Act (RCRA) Cap, 40 CFR PART 264

While the implementation of the recommended alternative will not meet the RCRA closure requirements for a RCRA Subtitle C cap, this alternative is the first operable unit and not the final remedy.

The recommended alternative includes a permeable layer at the surface. This permeable layer would be installed to enhance natural flushing, which will cleanse the site of contaminants. Meanwhile, this type of protective cover will prevent direct contact exposure.

Future studies will evaluate technologies to further enhance and accelerate natural flushing under Alternative 4b. The goal of Alternative 4b and future actions will be to attain cleanup criteria so as to result in a site that could be considered for reuse. Should these criteria not be met, the need to close the site under RCRA will be re-evaluated.

OPERATION AND MAINTENANCE

All the remedial components of the recommended alternative require operation and maintenance (O&M) to varying degrees. The wastewater treatment facility, the surface cover, and the collection system must be operated and maintained. The buildings and tanks must be periodically inspected. O&M will also include long-term monitoring. The monitoring program will include sampling of ground water, air, and treated effluent prior to discharge to the Passaic River. The total annual O&M cost for this program is estimated to be $209,000.

Responsiveness Summary
for the
Completion of the Remedial Investigation/Feasibility Study
at the
Syncon Resins site
Kearny
Hudson County
New Jersey

This Community Relations Responsiveness Summary, prepared as part of the Record of Decision (ROD), is divided into the following sections:

I. Background on Community Involvement and Concerns
This is a brief history of community interest concerning the Syncon Resins site and a summary of community relations activities conducted by the New Jersey Department of Environmental Protection (NJDEP) and the United States Environmental Protection Agency (USEPA) prior to and during the Remedial Investigation/Feasibility Study (RI/FS).

II. Summary of Major Questions and Comments Received During the Public Comment Period and NJDEP's Responses
This is a summary of major questions and comments directed to NJDEP during the September 4, 1986 public meeting regarding the results of the Feasibility Study and sent to NJDEP during the public comment period. NJDEP's responses are included in this section.

III. Remaining Concerns
This is a discussion of remaining community concerns of which NJDEP and USEPA should be aware in conducting the remedial design and remedial actions at the Syncon Resins site.

Attachments

Attachment A

Attendance sheet and Information Package distributed at the February 21, 1984 Public Meeting.

Attachment B

Attendance sheet and Information Package distributed at the April 25, 1985 Public Meeting.

Attachment C

Attendance sheet and Information Package distributed at the September 4, 1986 Public Meeting.

Attachment D

Copy of the letter received by NJDEP during the public comment period.

I. Background on Community Involvement and Concerns

Concern focusing on the Syncon Resins site prior to the RI/FS began in 1976 after the NJDEP uncovered violations of the Clean Water Act at this facility. Media attention was generated and a group called the Kearny Environmental Committee of Concerned Citizens was established. At this time, this group focused attention on the presence and hazards of chemical wastes in Kearny. They were concerned that their community might serve as a waste storage center for the entire region. On September 30, 1981 the NJDEP provided Kearny citizens an opportunity to comment on the development of a new site for a hazardous waste storage and transportation operation. After reviewing public comment, the NJDEP did not approve plans for development of this operation.

On December 20, 1982 the USEPA issued a press release noting that funds had been allocated for cleanup work at two New Jersey hazardous waste sites. One of those was the Syncon Resins site and a brief description of the problems at the site was included. In particular, it was stated that $2 million would be spent to remove approximately 10,000 drums on site.

On September 9, 1983 a Community Relations Plan (CRP) was completed for this site. In January 1984 the NJDEP attempted to locate additional citizens and citizen groups interested in the Syncon Resins site. Mayor Henry Hill responded and completed our Community Relations Response Form, supplying numerous names to compliment our CRP contact list.

Prior to the initiation of the Initial Remedial Measure (IRM) for the drum removal at this site, a series of meetings and briefing sessions were held. On February 10, 1984 a briefing to keep Kearny officials informed as to the status of the Syncon Resins cleanup was held. The project was outlined and town officials inquired and were informed about contingency plans, waste transportation routes and material handling. All questions were answered directly or commitments were made by NJDEP to provide answers. A short discussion followed concerning the upcoming public meeting scheduled for February 21, 1984.

The public meeting on the removal of waste storage drums from the Syncon Resins Hazardous Waste site was held on February 21, 1984. Notification of the meeting was accomplished through press releases and a direct mailing of notices to municipal, county, state and federal officials, as well as to all concerned citizens and citizen groups. Approximately 20 people attended the meeting and agendas and information packages were distributed. (See Attachment A.) Major issues and concerns raised during the meeting and responses given included:

Question: Who will remove waste and do the soil tests?

Response: The drum disposal will be handled by three contractors: Applied Technology, AETC, Inc. and S & W Waste. Soil conditions will be addressed in a subsequent RI/FS.

Question: Will sites neighboring [Syncon] be regulated?

Response: The Hazardous Site Mitigation Administration does not regulate these facilities but other units within the NJDEP do.

Question: What will happen to the Syncon property after the cleanup?

Response: At this time we cannot answer specifically since the site is in litigation as to ownership.

On February 24, 1984 the NJDEP held a press briefing at the Syncon site to explain procedures that will be used during the cleanup project. The Kearny Health officer was quoted in a Star Ledger article of February 25, 1984 saying, "We're pleased with the setup of the safety feature of the whole project."

A press release was issued by the NJDEP on September 12, 1984 announcing completion of the IRM. A total of 12,824 drums were removed at a cost of $2 million dollars with federal Superfund paying 90% and the state Spill Fund paying 10%. (Actual cleanup cost amounted to $2.4 million dollars.)

Throughout the IRM, the NJDEP received numerous requests for information concerning progress of the clean-up. Responses were given both verbally over the telephone or in writing by the NJDEP, Bureau of Community Relations. In addition, the NJDEP sent out an early meeting notice in May 1984 to advise concerned citizens that we were planning to schedule a public meeting to discuss the initiation of the RI/FS; the specific date and location to be announced in a subsequent notice. This correspondence also emphasized stages in the remedial process in which NJDEP solicits the benefit of public comment before site decisions are made.

On April 25, 1985 the NJDEP held a public meeting to discuss the initiation of the RI/FS at this site. Notification of the meeting was accomplished through press releases and direct mailing of notices to municipal, county, state and federal officials as well as concerned citizens and citizen groups. Approximately 11 people attended the meeting and each received an agenda, fact sheet and an overview of the community relations program. (See Attachment B.) Issues and concerns raised during the meeting and responses given included:

Question: What do you plan to do with the tanks?

Response: It is premature to say at this time but there are several possible options. 1) If tanks can be sufficiently decontaminated then they may remain on-site. 2) If the tanks can't be sufficiently decontaminated then they may have to be cut up and disposed of as hazardous waste. 3) As an additional but very expensive alternative, it may be possible to remove whole tanks.

Question: Do you know the depth of soil contamination?

Response: That will be determined in the RI/FS.

Comment: It seems like you should dike and put an impervious cover over the site.

Response: That may be an option. It would be premature to make that decision before completing the study. There will be another public meeting at the end of the RI/FS when decisions begin to be made. That is really the most important meeting in this process. Meanwhile, if you have

questions after this meeting you can contact the Bureau of Community Relations (NJDEP).

Question: Do you have any idea how far the plume has gone through the aquifer? Kearny has six square miles of contaminated aquifer (the largest in the world!).

Response: That will be determined in the RI/FS.

Question: Do you see any evidence of low grade toxicity in your workers?

Response: No. We do have a stringent medical surveillance program to monitor our workers' health.

II. Summary of Major Questions and Comments Received During the Public Comment Period and NJDEP's Responses

On August 21, 1986 the RI/FS was placed in the following repositories for public review: Kearny Town Hall, Kearny Public Library, Hudson County Law Library in Jersey City and the NJDEP, Division of Hazardous Site Mitigation in Trenton. The NJDEP issued a press release and contacted local officials, as well as interested citizen groups regarding the availability of the RI/FS at these repositories.

On September 4, 1986 the NJDEP held a public meeting to present the results of and to receive comments/questions regarding the RI/FS. Notification of this meeting was also accomplished through press releases and direct mailing of notices to municipal, county, state and federal officials, as well as to concerned citizens and citizen groups. Approximately 25 people attended this meeting and each received an agenda, fact sheet, an overview of the community relations program and steps in a major hazardous waste site cleanup. (See Attachment C.) Responses to questions and comments, for the most part, were stated at the meeting. The public comment period was held from August 21, 1986 through September 11, 1986. In addition to the comments made during the public meeting, one letter was received by the NJDEP during this period. (See Attachment D.) This written comment is included in this section.

During the public meeting, Mr. Thomas Granger, Manager of Projects of Ebasco Services, Inc. presented six remedial alternatives for long-term site remediation. These are:

- Minimal action.
- Removal of buildings, tanks and soil for off-site disposal.
- Removal of buildings* and tanks, on-site incineration and on-site soil washing.
- Decontamination of buildings and tanks and leachate and ground water control.
- Removal of buildings* and tanks and site encapsulation.
- Removal of buildings and tanks, on-site chemical fixation of soil and construction of an on-site RCRA Landfill.

*Buildings and/or tanks are decontaminated prior to removal as solid non-hazardous waste to a sanitary landfill.

Mr. Richard Salkie, P.E., Acting Director of NJDEP's Division of Hazardous Site Mitigation, then discussed NJDEP's recommended alternative which is primarily a composite of various components of the alternatives (modified alternative #4) previously mentioned. This includes decontamination of tanks, vessels and buildings, excavation plus off-site disposal of lagoon sediments, site covering with crushed stone, installation of a downgradient collection trench to collect water to be treated on-site and discharged to the Passaic River, a continuous 30-year monitoring program, improvement of site access and fence conditions and additional studies to evaluate a variety of technologies to enhance natural flushing/treatment/destruction of contaminants. Comments and questions were then received from the audience. In addition to Director Salkie, and Mr. Granger, other representatives of NJDEP were present and responded to questions relevant to areas of their expertise.

In general, the tone of the comments at the public meeting and of those received during the public comment period was very positive. Several individuals, including Kearny Mayor Henry J. Hill and New Jersey Assemblyman Charles Catrillo, expressed appreciation for NJDEP's presentation. Margaret Halloway, President of the Kearny Environmental Committee of Concerned Citizens, expressed support with some reservation for a remedy to the contamination. There were, however, some areas of concern. These are summarized by subject as follows:

- Movement and Extent of Contamination.
- Costs of Alternatives.
- Siting of an Incinerator in Kearny for this Site or Other Uses.
- Site Security-Past, Present, and Future.
- Future Use of the Site.
- Other Issues

Movement and Extent of Contamination

Question: What is the amount of contamination (poison) allowed into the water? Is the contamination still discharging into the Passaic River?

Response: The surface water criteria is set forth in the NJDEP Effluent Limitations for Discharge into the Passaic River (NJAC 7:9-5) and the ground water criteria is based on the GW3 class aquifer (NJAC 7:9-6). Presently, the contaminated ground water is discharging into the surface water (Passaic River) through normal aquifer movement. NJDEP proposes to construct a concrete wall to contain the movement of the contaminated water and control river tide. Then the contaminated water will be treated on-site to meet the required standards prior to release into the Passaic River.

Question: What do the measurements in the RI/FS regarding mercury and other contaminants mean? What measurement is used to evaluate each contaminant? What does the measurement ND-1400 mean?

Response: The levels of contaminants indicate the amounts that existed on the site at the time of the sampling. The measurements of each contaminant are in parts per billion (ppb) within the saturated soil. The ND-1400 means that levels of the contaminants were found within the range of not detectable to 1400 ppb.

Question: I am curious how such highly toxic poisons as mercury, cyanide, lead and arsenic were used in a paint factory? Are these materials normally associated with paint production?

Response: It was found that the contamination on site, in fact, did relate very well with the processes conducted at Syncon Resins. Mercury, cyanide, lead and arsenic are part of the catalysts utilized in the resins manufacturing process, reprocessing of resins, or varnish manufacturing. The other contaminants (i.e., pesticides) were probably brought on site for a specific use (pest control).

Question: To what location were the 12,000-plus drums removed? Were any of the drums disposed of in Kearny?

Response: The drums were removed to licensed hazardous waste facilities within New Jersey and out of state. None of the drums were disposed of in Kearny.

Question: How many feet below the surface is there evidence of definite contamination?

Response: The contamination is found mainly in the first ten feet. A clay layer is found at that point under the surface, providing a barrier to prevent further migration of the contaminants. In this area, the groundwater is found about two feet below the ground's surface.

Question: Can you give an idea of how long it will take to remove the contaminants found below the surface?

Response: The proposed alternative will take the water that passes through the site and prevent it from leaving the site. The water will be collected and treated on-site to meet relevant standards prior to discharge into the Passaic River. The length of time required, by this method, to remove the contaminants will be determined by treatability tests and further identification and evaluation of various technologies.

Question: From the soil data in the report, it appears there are areas of heavy contamination (hot spots). Do you plan to do additional characterization of those sites to see if it is necessary to remove contaminated soil removal?

Response: We will do additional characterization. Then we will make a determination as to whether there will be some removal in specific hot spots or whether all the highly contaminated areas will be removed. That will be evaluated during the conceptual design in terms of cost effectiveness. Also, we will consider whether it is most cost effective in achieving the objectives to run the treatment system with natural flushing for a long period of time or just to remove the contaminated soil at the beginning of the project.

Question: Will the characterization of contaminants be done prior to any work on this site?

Response: Following the signing of the ROD (Record of Decision) with EPA, we will begin the development of the conceptual design. At that stage, further characterization and the full evaluation of that area will be made. There was a strong feeling among NJDEP staff that part of the contaminated soil (hot spots) should be removed.

Question: Is the general intent to flush the contaminated soil rather than remove it?

Response: The expectation is that some contaminated material will be removed. Prior to full evaluation by the engineers, I cannot tell you how much soil, what area of soil will be removed, or even guarantee that the soil will be removed.

Question: A newspaper article mentioned that after the removal of the 12,000-plus barrels that two barrels remained. We would like to know why you forgot the two, since they were visible from the street and only ten feet from the fence?

Response: As far as I can tell from the picture (with the article) and your description, those barrels are full of the cuttings taken from the ground during the soil borings. During the drilling of a well, a certain amount of material is extracted. This material was placed in the two drums to secure them on site until they would be removed, when additional clean up work is completed.

Comment: The newspaper article also alleged that the laboratory was filled with many harmful chemicals and the natural gas jets were still burning. They could have been easily turned off when the 12,000-plus barrels were removed.

Response: A contract is being developed through the procurement process to remove all the lab bottles and materials. We thought that all the utilities (gas and electric) were shut off prior to the removal of the 12,000 drums. I understand that all the utilities are shut off now.

Question: Has there been any testing on the adjacent property (to the south) for possible contamination?

Response: There was a trench that separated the two properties of Syncon Resins and Modern Transportation. The trench seemed to be a catch basin collecting the contaminated run off from Syncon and directing it into the Passaic River. The trench has since been filled in. To date, there has not been any off-site testing.

Costs of Alternatives

Question: Can you tell me how much money has been spent, to date, on the Syncon cleanup and in what year did this cleanup process begin?

Response: As mentioned in the opening presentation, $2 million was spent in the barrel removal (actual cost is $2.4 million) and approximately $550,000 was spent on the RI/FS. The clean up work to remove the barrels began in February 1984.

Question: What will you spend to clean up the contamination caused by negligence?

Response: The expected capital cost of the recommended alternative is $8.3* million. The total present worth cost, which includes all the operating and maintenance costs for a 30 year period, will be $10.3* million.

Question: Is the cost of the soil removal from the hot spots included in the $8.3* million?

Response: Extensive soil removal costs are not part of the $8.3* million.

Question: Is the $2.6 million spent already on Syncon Resins part of the $8* million clean up cost? (Actual total is $3.0 million already spent.)

Response: The $8 million is in addition to the $2.6 million already spent. (Actual total is $3.0 million already spent.)

*Subsequent to the public meeting, cost estimates were recalculated and an error was discovered. The correct capital cost is $5.6 million and the total present worth cost including operations and maintenance for the 30-year period is $7.6 million.

Siting of an Incinerator in Kearny for This Site or Other Uses

Question: Your report mentions that you prefer to incinerate some of the contaminated material. Will the incinerator be located in Kearny?

Response: One of the considered alternatives did include on-site incineration, but that was not selected. The contaminated materials will be removed and sent to an existing, licensed incinerator, probably out of state. There are no plans to construct an incinerator anywhere for this waste. The amount of material would not justify constructing an incinerator to be used only for this site.

Comment: The Town of Kearny is concerned that an incinerator site will be constructed in South Kearny to burn the contaminated materials from the Syncon site.

Response: An incinerator field would fall within the jurisdiction of the Hazardous Waste Siting Commission. A petition would have to be made to the commission for a permit to site any hazardous waste incinerator or facility. There are no known plans of such considerations for Kearny. It is not the NJDEP or the USEPA preferred alternative to construct an incinerator, and, presumably, it is not Kearny's preferred alternative.

Comment: I think our town should demand, in writing, that the NJDEP or USEPA (whoever is in charge of the site) provide a legal guarantee that an incinerator will not be placed in South Kearny under any circumstances.

Response: When the Record of Decision (ROD) is made with the final selected alternative, it will be in writing. It will serve as a basis for the grant that EPA would provide for the design and construction phases for mitigation of the Syncon site. There are no plans, at this point in time, to construct an incinerator to burn the waste materials.

Site Security - Past, Present, and Future

Comment: Mr. Dewling in a written response to our letter stated that the Syncon site was secure. Several individuals, including a reporter, went to the Syncon site and were able to go between sections of the fence onto the site. Children are riding their bicycles and walking around the site due to a lack of security or proper fencing. You must have a security guard.

Response: That will be taken back to Trenton and considered.

Comment: The newspaper article (mentioned earlier) about the site indicates the failure of the fencing to secure the site. Due to the overall inexpensiveness of new fencing compared to the total project, I would think at least the fencing problem could be immediately resolved.

Response: We can look into that right away.

Question: Are you going to extend the fence into the water to prevent entry to the site?

Response: The fence will go across the river bank at the site.

Future Use of the Site

Comment*: We agree that the proposed alternative is the most feasible, but strongly recommend alternative #2, which is the removal of buildings, tanks and soil to an off-site waste disposal unit. Alternative #2, while more expensive, would provide the most protection for health, environment and the use of the land as a ratable for the Town of Kearny.

* This is the only written comment received. (See Attachment D.)

Response: As you indicate, alternative #2 would provide the most complete health and environmental protection by eliminating exposure pathways through complete excavation and off-site disposal. This would lead to an enhanced potential for site re-use in the shortest period of time.

Unfortunately, this option does not represent the most feasible and cost-effective alternative for remediating conditions at this site. Alternative #2 accounts for a massive expenditure of over $115,000,000 and the transportation to and from the site of over 300,000 cubic yards of material. It would be an ideal solution if we had the resources and off-site facilities to dispose of large amounts of contaminated material in an environmentally acceptable manner. It is a common situation at hazardous waste sites statewide that off-site cleanup costs and the scarcity of off-site disposal facilities prohibit selection of this type of alternative.

Question: How many years will it take before the site will be usable as a development area for other companies?

Response: Monitoring will continue for 30 years on this site. We will return after five years to reassess and evaluate the progress of the system in operation. Following completion of the reassessment and evaluation, a determination will be made regarding specific actions necessary for a permanent solution.

Question: What influence will the pollution from the Syncon Resins site have on the surrounding area regarding the future development of that area?

Response: The flow of the ground water within the Syncon site is from the NE to SW towards the Passaic River. The contamination tends to move from various locations on the site directly towards the river. The operation included in the recommended alternative would be within the boundaries of the 15 acres of the site. As part of the alternative, a barrier wall will be constructed from the ground surface into the clay layer along part of the southern boundary, the entire river boundary, and along part of the northern boundary to prevent ground water from leaving the site or coming in. French drains will be constructed to collect the water from the site for on-site treatment. Following treatment of the water to acceptable standards, it will de discharged into the Passaic River.

Question: How much of the site will be restricted from future development for the 30-year period?

Response: Development will be prohibited for the entire site for 30 years.

Question: What is the purpose of keeping 50 year old buildings? If you want to develop the land, I do not see retaining the buildings as a feasible alternative. Would it not cost more to decontaminate the buildings than to destroy them?

Response: It will cost a great deal more to destroy the buildings than it would to decontaminate them. If they were destroyed, they would have to be removed and disposed of in a hazardous waste facility. The buildings that are structurally sound will be left in place. The buildings that are not structurally sound will be demolished and removed to a hazardous waste facility. (The study determined that one small building will be removed.)

Other Issues

Question: During the RI/FS presentation I counted four different Alternative #3's shown. Each one was different than the one explained in the hand out (fact sheet). The third alternative on the fact sheet is the only reasonable one. If I wish to write a letter to the Commissioner of DEP, how will he know which Alternative #3 I am referring to?

Response: All the Alternative #3's are the same. In the fact sheet the description is more detailed than the descriptions used on the over head transparencies. The transparencies are for highlighting purposes. The real purpose of these meetings is to hear from you, the public. As a result, we have directed our consultants to shorten their presentations to allow more time for public comments. The original

presentation was about three times as long as tonight's. The shortening of the presentation may have led to a little confusion because every step was not presented in detail. Maybe we are learning from the experience that the presentation should not be too brief.

Comment: The people that owned the Syncon Resins company should be brought forward and made to pay for the destruction that they caused in South Kearny.

Response: The company is in bankruptcy. The NJDEP is the same as any other party seeking restitution. The NJDEP is already pursuing that issue.

Question: How soon will the clean up begin at Syncon Resins?

Response: The process begins with a comment period to receive additional suggestions in writing regarding NJDEP's recommended alternative. At the close of the comment period, all suggestions (written and those made during this meeting) will be evaluated. Then the NJDEP will develop a Responsiveness Summary to be incorporated in the Record of Decision (ROD). These comments are submitted to the USEPA and evaluated by them. If the NJDEP and USEPA agree, the ROD is signed. This is followed by: NJDEP's request to USEPA for funding; the signing by both agencies of a cooperative agreement; the receipt of the grant for funding by DEP; the procurement process to hire an engineering firm; completion of the design by the engineering firm; reapplication to EPA for construction funds; the procurement process again to hire a contractor for construction; and then the construction on site. This process will probably take a total of two and one-half to three years.

Question: May we have a copy of all the materials from the presentation mailed to us?

Response: A copy of the summary presentation of the RI/FS will be sent to you. You are welcome to that.

Comment: We would like members of the NJDEP to take interested parties (local and state officials and concerned citizens) on a tour of the Syncon site. We also would like tours of the site at various stages of the clean up.

Response: The NJDEP does not provide routine tours of hazardous waste sites for the public. Hazardous waste sites are hazardous and only properly equipped and trained individuals can enter these locations. If anyone calls the NJDEP, Bureau of Community Relations (609-984-3081), we would gladly provide status updates regarding on-site conditions, schedules, etc.

Question: If I come to the NJDEP in Trenton, can someone sit down with me to explain the proposed alternative from A to Z? Then I will be able to provide an explanation of the plan to the citizens of Kearny at meetings and by flyers.

We are here tonight to do just that; to provide explanations of the plan and to solicit your comments. If you have additional questions,

please call the NJDEP, Bureau of Community Relations at (609) 984-3081 and arrangements can then be made to provide answers via the telephone or by meeting with you directly.

III. Remaining Concerns

Basically, the community seemed pleased with the recommended alternative for the Syncon Resins site. There are primarily three remaining concerns:

- The Security of the Site,
  NJDEP will immediately look into securing the site with the necessary fencing.
- The effect of the site on redevelopment under the Master Plan of South Kearny.
  NJDEP stated that the cleanup of Syncon Resins will be conducted within the boundaries of that site.
- The length of time until the Syncon Resins site could again be a productive ratable.
  NJDEP explained that all development will be prohibited for the entire site for 30 years.

Note: September 4, 1986 Public Meeting Fact Sheet corrections:

p.1 Replace "147 bulk storage tanks" with "150 bulk storage tanks and vessels".

p.1 Replace "ranging in capacity from 200 to 1,323,000 gallons" with "ranging in capacity from 200 to 610,000 gallons".

p.1 (For clarification, please note) Although a Cooperative Agreement was signed for the IRM for $2,000,000., the final cleanup cost for the IRM was actually $2,400,000.

p.3 Replace "a total of 147 tanks" with "a total of 150 tanks".

ATTACHMENT A

N.J. Department of Environmental Protection
Division of Waste Management
Hazardous Site Mitigation Administration
Public Meeting to Discuss the Removal of Waste Storage Drums
from the Syncon Resins Superfund Site
Kearny, Hudson County, New Jersey
Tuesday, February 21, 1984
7:00 p.m.
Kearny Town Hall
400 Kearny Avenue
Kearny, New Jersey

	NAME	AFFILIATION	ADDRESS
1.	Albert T. Stewart	Kearny Beautification + Environmental Comm.	Town Hall
2.	Edward Grosvenor	Health Dept.	Kearny
3.	JOHN MATEO	EPA	N.Y.C.
	Chief Joseph Phillips	Kearny	Fire Dept.
5.	Lillian Cardoza	Bd of Health	512 Belgrove Dr K
6.	Caroline A. Jerry	Rec Comm.	Kearny
7.	Mary Arnone	256 Wilson Ave	Kearny
8.	Robert Scabella	742 Devon St	"
9.	George Hawin	573 Davis Ave	"
0.	Commissioner of Health		
1.	Gloria P. Ness	44 Columbia Ave	Ky
*	John Ness	"	"
3.	Harry Moscatelli	RD 2 Box 147	English Town (S&W)

	NAME	AFFILIATION	ADDRESS
14.	Joseph R. Skelly	S. Kearny HR Hig Commission	186 Highland Ave
15.	Robert Sheppard	B&E	22 Patterson St
16.	Rosemary Robertson	councilwoman	
17.	Michael O'Keefe		366 Elm St.
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N.J. Department of Environmental Protection
Division of Waste Management
Hazardous Site Mitigation Administration

Removal of Waste Storage Drums
from the
Syncon Resins Hazardous Waste Site

Tuesday, February 21, 1984
7:00 p.m.
Kearny Town Hall
Kearny, N.J.

Agenda

1.	Opening Remarks on Community imput in Superfund Program and introduction of DEP members	Grace Singer
2.	Overview of situation and introduction of contractor, O.H. Materials Company of Findlay, Ohio	Jorge Berkowitz
3.	Presentation: O.H. Materials Company, contractors	Robert Panning/ John Hitchings
4.	Questions and Answers	

FACT SHEET

REMOVAL OF WASTE STORAGE DRUMS FROM THE SYNCON RESINS SUPERFUND SITE IN KEARNY, NEW JERSEY

SITE DESCRIPTION

Syncon Resins, Inc. is an inactive paint, varnish, and resin manufacturing facility located on a 15 acre tract in South Kearny. The company which formerly operated the plant has filed for bankruptcy.

The site is situated within a coastal wetlands management area and is bordered on the west by the Passaic River, a tidal waterway.

There are now approximately 9,000 to 11,000 55-gallon drums on site, most of which are in poor condition and leaking. Analysis indicated that many drums contain hazardous substances, some of which are volatile and flammable posing the threat of fire and air pollution. Several bulk liquid storage tanks suspected of containing hazardous substances are also on the site. Two unlined ponds used for subsurface disposal of process waste were sampled and found to contain hazardous organic chemicals.

Tests have indicated the presence of Priority Pollutants and PCBs in soil and groundwater samples.

PROJECT DESCRIPTION

Remedial response for this site is divided into four segments:

Part I — Project initiation for Part I is scheduled for early February, 1984 and is expected to take six months to complete.
Phase I includes staging, testing, and removal of the 55-gallon drums presently on site as well as inspection of the bulk liquid storage tanks.
Phase II is disposal of the drums.

Part II — Work on Part II activities is scheduled to begin in the 4th quarter of 1984 and is expected to take nine months to complete.
This part of the project will include a Remedial Investigation to assess site contamination and a Feasibility Study to investigate remedial action alternatives.

Part III — Work on the engineering Design is scheduled to begin in the 1st quarter of 1986 and is expected to take three months to complete.

Part IV — Scheduling of the implementation of the design is dependent on the work detailed in that document.

PROJECT FUNDING

Two million dollars to complete Part I of the remedial action project, 90% of which is provided by the United States Environmental Protection Agency as part of the Superfund Program. The remaining 10% will be provided by the State of New Jersey from its Spill Compensation Fund.

N.J. Department of Environmental Protection

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT

HAZARDOUS SITE MITIGATION ADMINISTRATION

A Community Relations Program at Superfund Hazardous Waste Sites

As part of the federal/state program of cleanup of hazardous waste sites, a Community Relations Program is conducted to receive local input and to advise local residents and officials about the planned remedial actions at the three major stages of the cleanup: 1) feasibility study 2) engineering design and 3) removal/treatment/construction. Local briefings and public meetings are conducted with elected officials and residents and generally take place at:

1) The commencement of a feasibility study so that local concerns can be addressed early in the process.

2) The completion of a feasibility study to discuss the alternative courses of remedial action. There is a 30-day comment period after public presentation of the alternatives.

3) The engineering design stage to carry out the mandates of the selected remedial alternative.

4) The commencement of the removal/treatment/construction stage to advise of the expected physical remedial action.

5) The completion of the remedial action.

In addition to the more formal activities outlined above, there is generally informal communication with local officials and residents. Depending upon whether the New Jersey Department of Environmental Protection (DEP) or the U.S. Environmental Protection Agency (EPA) has the lead in remedial action at a site, community relations activity is conducted by the relevant state or federal agency.

In New Jersey at DEP, the Community Relations Program is conducted by Grace Singer, Community Relations Program Manager (609) 984-3081. At Region II, EPA, the contact person is Lillian Johnson (212) 264-2515.

STEPS INVOLVED IN A MAJOR HAZARDOUS WASTE SITE CLEANUP INVOLVING EPA AND SUPERFUND MONIES

Site Identified and Referred (1)

Initial Site Investigation (2)

Secure Site (3)

Site Analysis Evaluation and Assessment (4)

Prioritization (5)

Remedial Action Master Plan and Determination of Lead (6)

Community Relations Plan Activated (7)

Signing of Contract of Cooperative Agreement (8)

Hiring of Contractor for Feasibility Study (9)

Preparation of Feasibility Study (10)

Selection of Remedial Action Alternative (11)

Hiring of Contractor for Design (12)

Hiring of Construction or Removal Contractor and Cleanup (13)

Cleanup Evaluation (14)

Contractor Audit and Close out (15)

ATTACHMENT B

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
Public Meeting to Discuss Commencement of
Remedial Investigation/Feasibility Study
at
Syncon Resins Site
Thursday, April 25, 1985
7:00 p.m.
Kearny Town Hall
Kearny, New Jersey

NAME	AFFILIATION	ADDRESS
M. Beard	K.H.D.	645 Kearny Ave
E. Grosvenor	K.H.D - H.O.	" "
J. McNamara	K.H.D	"
J. SKELLY	K. MUN. PORT. AUTH.	402 KEARNY AVE.
Y. RUDUMANSKI	KHD	
P. McCarthy - Aide Son Thomas Cowan		
Tom Moran	SW	15 Jacobs
Dolores Cali	Congressman Guarini	15 Path Plaza JC 07306
Gary McLaughlin	Councilman	33 Patterson St.
Nick Dedes		10 Alpine Pl. Ky

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
CN 028, Trenton, N.J. 08625

MARWAN M. SADAT, P.E.
DIRECTOR

JORGE H. BERKOWITZ, PH.D.
ADMINISTRATOR

NOTICE

3 APR 1985

Public Meeting To Discuss
Commencement of
Remedial Investigation/Feasibility Study
at
Syncon Resins
Town of Kearny
Hudson County

A public meeting will be held by the New Jersey Department of Environmental Protection to discuss the initiation of the Remedial Investigation/Feasibility Study at the Syncon Resins site. This meeting has been scheduled to replace the January 31, 1985 public meeting which was cancelled due to a weather emergency.

The meeting will be held on:

Thursday, April 25, 1985
7:00 p.m.
Kearny Town Hall
400 Kearny Avenue
Kearny, NJ
(201) 991-2700

For further information, please contact Grace Singer at (609) 984-3081.

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT

HAZARDOUS SITE MITIGATION ADMINISTRATION

Public Meeting
on
Commencement of
Remedial Investigation/Feasibility Study
at the
Syncon Resins Site

Thursday, January 31, 1985
7:00 p.m.
Kearny Town Hall
400 Kearny Avenue
Kearny, NJ

AGENDA

1)	Opening Remarks; Introduction of NJDEP personnel	Ms. Grace L. Singer, Chief Office of Community Relations NJDEP
2)	Overview of Past History and Current Situation; Introduction of Contractor: Ebasco Services, Inc.	Mr. Russell Trice. Site Manager Bureau of Site Management NJDEP
3)	Presentation: Remedial Investigation/Feasibility Study	Mr. Garry Cusack, Project Director Ebasco Services, Inc.
4)	Questions and Answers	

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

FACT SHEET

Public Meeting
on
Commencement of
Remedial Investigation/Feasibility Study
at
Syncon Resins Site
Town of Kearny
Hudson County
April 25, 1985

Site Description: Syncon Resins is an inactive paint, varnish, and resin manufacturing facility situated within an industrialized section of a coastal wetlands management area. This 15-acre site is bordered on the west by the Passaic River, a tidal waterway, and on the east by Jacobus Avenue. There were 12,824 55-gallon drums on site, most of which were in poor condition and leaking. Analyses indicated that many contained hazardous substances including volatile and flammable materials which posed an immediate fire and air pollution threat. Presently remaining on site are: 144 bulk storage tanks, ranging in capacity from 375 gallons to 600,000 gallons and containing various hazardous materials; two unlined lagoons used for subsurface disposal of process waste which were sampled and found to contain hazardous organic chemicals; and five suspected underground storage tanks with their associated piping systems. Among the diverse contaminants found at this site are: solvents, waste oils, corrosives, organic liquids, solids, acids, alkalies, ketones, and inorganic liquids and solids. Soil, shallow ground water and surface water samples indicate the presence of various pollutants including toluene, xylene, PCBs, heavy metals, pesticides and cyanide.

Background: In November 1981, an Administrative Order was issued by the New Jersey Department of Environmental Protection (NJDEP) requiring Syncon Resins to control and contain the hazards at the site. However, the company has since filed for bankruptcy. A Remedial Action Master Plan (RAMP) was prepared by the United States Environmental Protection Agency (USEPA) in November, 1982. A Cooperative Agreement was signed in December 1982 committing $2,000,000 for the Initial Remedial Measure (IRM) and $350,000 for a subsequent Remedial Investigation/Feasibility Study (RI/FS).

Cleanup work in the Initial Remedial Measure began in February, 1984 and was completed in August, 1984. This included:

- the inspection, sampling, and disposal of all 12,824 drums. (Prior to the disposal, the contents were grouped into categories of compatibility.);

- the completion of a Tank and Vessel Report which determined the capacity and integrity of each tank and vessel, the quantity and phase (liquid, solid or gas) of the contained material with a number assigned to each;

- transportation, treatment and/or disposal of the waste.

Status:

In November, 1984 NJDEP awarded the contract for a Remedial Investigation/Feasibility Study to Ebasco Services, Inc. of New York City. The scope-of-work involves the following activities:

- Evaluation of all background information, confirmation of the level of protective equipment to be provided to personnel during site investigations and preparation of a Health and Safety Plan, a Field Sampling Plan and a Quality Assurance/Quality Control Plan for the Syncon Resins site.

- Identification, to the extent possible, of the type, source, location and quantity of hazardous wastes present at the site.

- Determination of the nature, extent and severity of ground water contamination beneath the site and its impact on the surrounding areas.

- Determination of the nature, extent and severity of soil contamination at the site.

- Determination of the nature, extent and severity of surface water contamination at the site and its impact on related surface streams and water bodies.

- Air monitoring to determine the nature and extent of gaseous emissions.

- Selection of remedial response objectives and identification of alternatives.

- Evaluation of alternatives and selection of an environmentally sound, cost-effective remedial action.

- Development of the conceptual design of the selected remedial action and preparation of the final report.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT

HAZARDOUS SITE MITIGATION ADMINISTRATION

A Community Relations Program at Superfund Hazardous Waste Sites

As part of the federal/state program of cleanup at hazardous waste sites, a Community Relations Program is conducted to receive local input and to advise local residents and officials about the planned remedial actions at the three major stages of the cleanup: 1) remedial investigation/feasibility study 2) engineering design and 3) removal/treatment/construction. Local briefings and meetings are conducted with elected officials and residents and generally take place at:

1) The commencement of a remedial investigation/feasibility study so that local concerns can be addressed early in the process.

2) The completion of a feasibility study to discuss the alternative courses of remedial action. There is a 30-day comment period after public presentation of the alternatives during which the feasibility study is available in local repositories.

3) The engineering design stage to carry out the mandates of the selected remedial alternative.

4) The commencement of the removal/treatment/construction stage to advise of the expected physical remedial action.

5) The completion of the remedial action.

In addition to the activities outlined above, there is generally ongoing communication with local officials and residents as required. Depending upon whether the New Jersey Department of Environmental Protection (DEP) or the United States Environmental Protection Agency (EPA) has the lead in remedial action at a site, community relations activities are conducted by the relevant State or Federal agency.

In New Jersey, the DEP Community Relations Program is directed by Grace Singer, Chief, Office of Community Relations (609) 984-3081. At Region II, EPA, the contact person is Lillian Johnson, Community Relations Coordinator (212) 264-2515.

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STEPS INVOLVED IN A MAJOR HAZARDOUS WASTE SITE CLEANUP

(1) Site Identified and Referred	(2) Initial Site Investigation	(3) Secure Site	(4) Site Analysis Evaluation and Assessment
(5) Prioritization	(6) Determination of Lead	(7) Community Relations Plan Activated	(8) Signing of Contract or Cooperative Agreement
(9) Hiring of Contractor for Remedial Investigation/Feasibility Study	(10) Preparation of Feasibility Study	(11) Selection of Remedial Action Alternative	(12) Hiring of Contractor for Engineering Design
(13) Hiring of Construction/ Removal Cleanup Contractor	4) Cleanup Evaluation	(15) Contractor Audit and Close out	

New Jersey Department of Environmental Protection
5/84

ATTACHMENT C

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS SITE MITIGATION

Public Meeting to Discuss Completion of the
Remedial Investigation/Feasibility Study

at
Syncon Resins site
Thursday, September 4, 1986
7:00 P.M.
Kearny Town Hall
400 Kearny Avenue
Kearny, NJ

PLEASE PRINT

	NAME	AFFILIATION	ADDRESS
1.	ROBERT CHIREN	S+W WASTE, INC	105 JACOBUS AVE
2.	Paul Moscatiello	Inc.	115 Jacobus Ave.
3.	Margaret Halloran	259 Duke St Kearny N.J.	
4.	Frank Ejiler	S+W Waste Inc	105 Jacobus Ave
5.	Marguerite Petrillo	405 Hamilton St. Harrison N.J.	
6.	GARY GARETANO	HUDSON REGIONAL HEALTH	215 HARRISON AVE HARRI N.J
7.	Bob Fixter	S+W Waste	115 Jacobus Ave, Kearny
8.	X Ed GROSVENOR	KEARNY HEALTH	645 KEARNY AVE.
9.	Asst Atty	DEP	Trenton, NJ
10.	Ed Finnerty	EPA	
11.	Ronald Borsellino	EPA	NEW YORK
12.	Charles Grhillo	Assembly man Dist 32	10 Kearny Ave.
13.	ANTHONY T. CAVALIER	DEP	METRO FIELD OF WEST ORANGE

	NAME	AFFILIATION	ADDRESS
14.	Jerry Thomas	Star-Ledger	1 Star-Ledger Plaza Newark, N.J. 07101
15.	Frank J. Borgia	Assemblyman 32	10 Kearny Ave Kearny N.J.
16.	Joseph E. Blaucci	Legislative Aide 32dis	10 Kearny Ave. Kearny, N.J.
17.	Barry Lewis	705 Schuyler Ave	Kearny N.J.
18.	K DeRay	108 Kearny St	Kearny N.J.
19.	Tom MacFarland	42 Park Pl	Kearny N.J.
20.	Hugh Dalzell	16 Alexander Ave	Kearny N.J.
21.	Henry J. Hill	Mayor Kearny Town Hall	
22.	Jim Kopchains	Jersey Journal	
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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS SITE MITIGATION

Public Meeting
on

Completion of
Remedial Investigation/Feasibility Study
at

Syncon Resins Site
Town of Kearny
Hudson County
Thursday, September 4, 1986
7:00 P.M.
Kearny Town Hall
400 Kearny Avenue
Kearny, NJ

AGENDA

1.	Opening Remarks and Introductions	Mr. Richard C. Salkie, P.E., Acting Director Division of Hazardous Site Mitigation
2.	Overview of Past History and Current Situation	Dr. Adi Aleti, P.E., Site Manager Division of Hazardous Site Mitigation
3.	Presentation: Remedial Investigation/ Feasibility Study	Mr. Thomas Granger, Project Manager Ebasco Services, Inc.
4.	NJDEP Recommended Alternative	Mr. Richard C. Salkie, P.E.
5.	Comments and Questions	The floor will be open for comments and questions at this time.

FACT SHEET

Results of
Remedial Investigation/Feasibility Study
at
Syncon Resins Site
Town of Kearny
Hudson County
September 4, 1986

Site Description

Syncon Resins is an inactive paint, varnish, and resin manufacturing facility situated within an industrialized section of a coastal wetlands management area. This 15-acre site is bordered on the west by the Passaic River, and on the east by Jacobus Avenue. There were 12,824 55-gallon drums on site, most of which were in poor condition and leaking prior to their disposal in 1984. Analyses indicated that many of these drums contained hazardous substances including volatile and flammable materials which posed an immediate fire and air pollution threat.

Presently remaining on site are: thirteen structures and buildings; 147 bulk storage tanks (ranging in capacity from 200 to 1,323,000 gallons and containing various hazardous materials); two unlined lagoons (used for subsurface disposal of process waste) containing hazardous organic chemicals; and five suspected underground storage tanks with their associated piping systems. Among the diverse contaminants found at this site are: solvents, waste oils, corrosives, organic liquids, solids, acids, alkalies, ketones, and inorganic liquids and solids. Soil, shallow ground water and surface water samples indicate the presence of various pollutants including toluene, xylene, polychlorinated biphenyls (PCBs), heavy metals, pesticides and cyanide.

Background

In November 1981, an Administrative Order was issued by the New Jersey Department of Environmental Protection Agency (NJDEP) requiring Syncon Resins to control and contain the hazards at the site. However, the company ceased operation in 1982 and filed for bankruptcy. The Syncon Resins site was included on the National Priorities List (NPL) in September 1983. Of the 97 New Jersey Sites on NPL, the Syncon Resins site is ranked 48th. A Remedial Action Master Plan (RAMP) was prepared by the United States Environmental Protection Agency (USEPA) in November 1982. A Cooperative Agreement was signed by the USEPA and NJDEP in December 1982, committing $2,000,000 in federal funds for the Initial Remedial Measure (IRM). Cleanup work under the IRM began in February 1984 and was completed in August 1984. This included: disposal of all 12,824 drums; treatment and/or removal of the wastes that were contained in the 12,824 drums; and an inventory and content evaluation of the tanks and vessels.

In December 1982, the NJDEP and the USEPA signed a Cooperative Agreement for a Remedial Investigation/Feasibility Study (RI/FS) at this site. In November 1984, NJDEP awarded the contract for the Remedial Investigation/Feasibility Study to

Ebasco Services, Inc. of New York City. The cost of this study is approximately $550,000.

Status

The Draft Remedial Investigation/Feasibility Study was completed in August 1986 and has been available since August 21, 1986 at the following repositories: Kearny Public Library in Kearny, Hudson County Law Library in Jersey City, Kearny Town Hall in Kearny, and the NJDEP, Division of Hazardous Site Mitigation in Trenton. The public comment period will extend until September 11, 1986. Any comments on the study should be submitted to Kevin Kratina at NJDEP, Bureau of Community Relations, CN028 - 432 East State Street, Trenton, NJ 08625. After considering all public comments, NJDEP and USEPA will determine the selected remedial alternative for the site and sign a Record of Decision which will specify the details of the long-term site cleanup.

Summary of Remedial Investigation/Feasibility Study

The following remedial objectives were established for the site as a result of the site investigations and risk assessment:

- Mitigative measures should be developed to prevent human exposure to organic and metal contaminants found within unsaturated soil, lagoon sediments, and dirt/dust in on-site buildings.
- Mitigative measures should be taken to eliminate the potential hazard to nearby populations caused by the chemical materials remaining in the on-site tanks and vessels and their asbestos coverings.
- Mitigative measures should be taken to remediate the contaminated ground water within the shallow aquifer and saturated soils above the continuous clay layer.

Based on the above listed objectives, the Remedial Investigation included the following activities:

- Identification of the type, source, location and quantity of hazardous wastes at the site.
- Determination of the nature, extent and severity of ground water contamination beneath the site and its impact on the surrounding areas.
- Determination of the nature, extent and severity of soil contamination at the site.
- Determination of the nature, extent and severity of surface water contamination at the site and its impact on related surface streams and water bodies.
- Air monitoring to determine the nature and extent of gaseous emissions.

Results of the Remedial Investigation

- A total of 147 tanks and vessels are present on site. Seventy-three tanks contain less than three inches of liquid material or contain residual scale material. Thirty-eight tanks contain either hexane or water soluble peroxides. Nineteen tanks contain hexane soluble liquids and solids. Fourteen tanks contain flammable liquids or solids, crystalline and polymeric material, or sludge residues. Four tanks contain aqueous liquids and two tanks contain cyanide positive organic liquids. Eight tanks contain PCBs at concentrations greater than 50 parts per million (ppm).

- Contamination with organic compounds is widespread throughout the site. The greatest concentrations of volatile organics were found in lagoon sediments, soil at the southwest corner of the site, and in two buildings. These primarily include toluene, xylene, trichloroethylene (TCE), ethylbenzene, 2-hexanone (MBK), methyl isobutyl ketone (MIBK), and chlorobenzene. The shallow ground water beneath the site is also contaminated with primarily the same volatile organic solvents, but only at certain locations. Two other organic compound solvents (i.e. 1,1-dichloroethane and chlorobenzene) are present in the deep aquifer at very low levels.

- Contamination with acid/base neutral organic compounds is widespread throughout the site. The on-site soils above the clay layer contain principally phthalates (diethyl, dibutyl, dioctyl, and bis (2-ethylhexyl phthalate), polyaromatic hydrocarbons (17 compounds), dichlorobenzene, N-nitrosodiphenylamine, and 4-methylphenol. The shallow water table (above the clay layer) contains principally naphthalene and 2-methyl naphthalene in two general areas. No base neutral compounds were detected in the deep aquifer beneath the clay layer.

- Pesticide contamination (aldrin, DDT and its associated breakdown products) was found in the soils in several areas, including the dust/dirt inside several buildings.

- PCB contamination is restricted to lagoon sediments, tank contents, certain buildings, and soil in specific locations of the site.

- Metal contamination is present in the soil, shallow ground water, lagoon sediment, and buildings. The major contaminants in the shallow ground water are arsenic, cadmium, chromium, lead and zinc. The lagoon sediments and the buildings' dirt/dust contain chromium, cadmium, nickel and barium.

Summary of Remedial Alternatives for Long-Term Site Remediation

° Alternative 1 - Minimal Action

This entails securing the structures and improving fencing conditions around the perimeter of the site.

° Alternative 2 - Removal of Buildings, Tanks, and Soil for Off-Site Disposal

Removal and off-site disposal of all buildings, tanks, tank contents, and soils exceeding the established cleanup criteria.

° Alternative 3 - Removal of Buildings and Tanks, On-Site Incineration and On-Site Soil Washing

Removal and on-site incineration of hazardous tank contents and off-site disposal of non-hazardous tank contents; decontamination and off-site disposal of all buildings and tanks; on-site soil washing of hazardous soils.

° Alternative 4 - Decontamination of Buildings and Tanks, and Leachate and Ground Water Control

Removal and off-site disposal of tank contents; decontamination and securing of buildings and tanks; placement of a hazardous waste cap in open areas; extraction and on-site treatment of ground water and leachate.

° Alternative 5 - Removal of Buildings and Tanks, and Site Encapsulation
Removal and off-site disposal of all buildings, tanks, tank contents and waste materials; and site encapsulation with a perimeter slurry wall and a hazardous waste cap.

° Alternative 6 - Removal of Buildings and Tanks, On-Site Chemical Fixation Soil, and On-Site RCRA Landfill

Removal and disposal of hazardous buildings, tanks and solid tank contents to an on-site hazardous waste landfill; off-site disposal of liquid tank contents and soil dewatered wastewater; and chemical fixation of soils.

Syncon Resins
September 4, 1986 Public Meeting
NJDEP Recommended Alternative

Based on the results of the RI/FS, the NJDEP recommends the following alternative for site remediation. This recommendation includes various components of alternatives described previously in this fact sheet.

- Tanks, Vessels, and Buildings
  The existing above-ground structures including all buildings, tanks, and storage vessels will be decontaminated. Hazardous contents and decontamination wastes will be removed for either incineration (preferred option) or landfilling at an approved hazardous waste facility. All non-hazardous aqueous wastes will be treated in an on-site treatment system. Non-hazardous solids will be disposed of at a sanitary landfill.

- Soil (Unsaturated, Saturated, and Lagoon Sediments)
  Sediments from the two lagoons will be excavated and disposed of off site by incineration (preferred) or landfilling at an approved hazardous waste facility. Soils will be covered with a layer of crushed stone to prevent contact with the soil and to allow natural flushing of the contaminants by rain water. A downgradient collection trench will be installed to collect the contaminated water which will be treated on site and discharged to the Passaic River.

- Monitoring
  A continuous 30-year monitoring program will be implemented after the completion of remedial action to ensure the safety of public health and the environment.

- Site Access
  The site will be secured by improving fence conditions, including a locked gate. Access roads will be constructed.

- Additional Studies
  This will include the evaluation of a variety of technologies that will enhance the natural flushing and/or treatment/destruction of contaminants. These technologies are meant to achieve a more permanent solution for the contaminated soil. After these studies are complete, the site will be reassessed to determine specific actions for a more permanant remedy. Additional soil samples will be collected/analyzed to ensure public and environmental safety. If soil analyses indicate a potential environmental problem, excavation and off-site disposal will be considered.

For further information contact Kevin Kratina of NJDEP's Bureau of Community Relations at (609) 984-3081.

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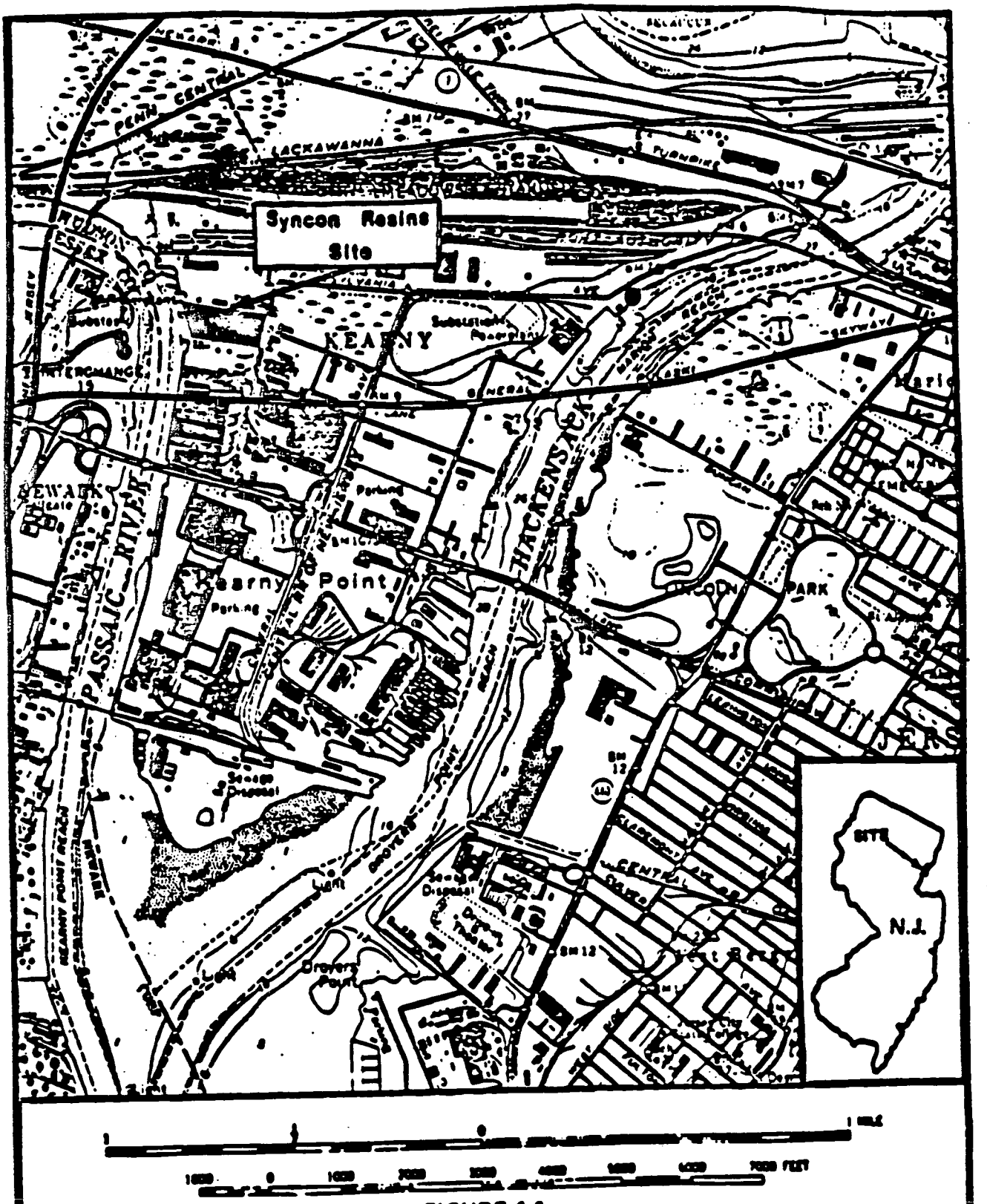

FIGURE 1-1
SITE LOCATION MAP, SYNCON RESINS SITE,
HUDSON COUNTY, NEW JERSEY

Glossary of Terms

Administrative Consent Order (ACO): A binding legal document between a government agency and a responsible party. It is issued by the government in the form of an order that specifies site mitigation activities to be undertaken by the responsible party.

Contract: The legal agreement that outlines federal and state government responsibilities at USEPA-lead sites on the National Priorities List (Superfund sites) as authorized by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Cooperative Agreement: An agreement whereby USEPA transfers funds and other resources to a state for the accomplishment of certain remedial activities at sites on the National Priorities List (Superfund sites) as authorized by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Engineering Design (Remedial Design): Following a feasibility study, an engineering design is executed to translate the selected remedy in accordance with engineering criteria in a bid package, enabling implementation of the site remedy.

Focused Feasibility Study (FFS): A limited feasibility study which is performed on a certain aspect of site remediation and/or when more than one remedial measure is considered technically viable for the immediate control of a threat.

Immediate Removal Actions (IRAs): Actions taken to prevent or mitigate immediate and significant risk to human life, health or to the environment.

Initial Remedial Measures (IRMs): Actions that can be taken quickly to limit exposure or threat of exposure to a significant health or environmental hazard at sites where planning for remedial actions is underway.

Monitoring Well: A well installed under strict design specifications that, when sampled, will reveal hydrogeologic data at its point of installation. Monitoring wells are installed at predetermined locations, usually in groups, to gain knowledge of site conditions including: extent and type of ground water contamination, soil types, depth to ground water and direction of ground water flow.

National Contingency Plan (NCP): The basic policy directive for federal response actions under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). It sets forth the Hazard Ranking System and procedures and standards for responding to releases of hazardous substances, pollutants, and contaminants. The NCP is a regulation subject to regular revision.

National Priorities List (NPL): A list of the highest priority releases or potential releases of hazardous substances, based upon State and U.S. Environmental Protection Agency (USEPA) Regional submissions of candidate sites and the criteria and methodology contained in the Hazard Ranking System (HRS), for the purpose of allocating funds for remedial response under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Published by the USEPA, the NPL is updated periodically. Sites on the NPL are commonly called Superfund sites.

over...

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS SITE MITIGATION

A Community Relations Program at Superfund Hazardous Waste Sites

As part of the federal/state program of cleanup at hazardous waste sites, a Community Relations Program is conducted to receive local input and to advise local residents and officials about the planned remedial actions at major stages of the cleanup. Local briefings and meetings are conducted with elected officials and residents and generally take place at:

1) The commencement of a remedial investigation/feasibility study so that local concerns can be addressed early in the process.

2) The completion of a feasibility study to discuss the alternative courses of remedial action. There is a 21-day comment period on the alternatives during which the feasibility study is available in local repositories.

3) The commencement of the removal/treatment/construction stage to advise of the expected physical remedial action.

4) The completion of the remedial action.

In addition to the activities outlined above, there is generally ongoing communication with local officials and residents as required. Depending upon whether the New Jersey Department of Environmental Protection (DEP) or the United States Environmental Protection Agency (EPA) is the lead agency in remedial action at a site, community relations activities are conducted by the relevant State or Federal agency.

In New Jersey, the DEP Community Relations Program is directed by Grace Singer, Chief, Bureau of Community Relations (609) 984-3081. At Region II, EPA, the Community Relations Coordinator is Lillian Johnson, (212) 264-2515.

7/86

over...

STEPS INVOLVED IN A MAJOR HAZARDOUS WASTE SITE CLEANUP

(1)	(2)	(3)	(4)
Site Identified and Referred	Initial Site Investigation	Site Secured	Site Analysis Evaluation and Assessment
(5)	(6)	(7)	(8)
Prioritization	Determination of Agency Lead (NJDEP or USEPA)	Community Relations Plan Activated	Signing of Contract or Cooperative Agreement
(9)	(10)	(11)	(12)
Hiring of Contractor for Remedial Investigation/Feasibility Study	Preparation of Feasibility Study	Selection of Remedial Action Alternative	Hiring of Contractor for Engineering Design
(13)	(14)	(15)	
Hiring of Construction/ Treatment/Removal Cleanup Contractor	Cleanup Evaluation	Contractor Audit and Close out	

ATTACHMENT D

Kearny
Department of Public Health and Environmental Protection

BOARD MEETS
THIRD WEDNESDAY OF EACH MONTH
AT HEALTH CENTER
645 KEARNY AVENUE
KEARNY, N.J. 07032

997-0600

EDWARD GROSVENOR
HEALTH OFFICER

COMMISSIONERS
KEARNY BOARD OF HEALTH

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September 8, 198

Mr. Kevin Kratina
N.J. Dept. of Environmental Protection
Bureau of Community Relations
CN-208
432 East State Street
Trenton, New Jersey 08625

RE: SYNCON RESINS SITE, KEARNY, NEW JERSEY

Dear Mr. Kratina:

Being present at the Public Hearing on September 4, 1986, we were delighted that the Remedial Investigation/Feasibility Study was completed and that decisions will be made as to what alternative to initiate at the site in the near future.

We agree that the presented alternative is the most feasible, but, strongly recommend alternative #2, which is removal of buildings, tanks, and soil to an off-site waste disposal unit. Alternative #2, while more expensive, would provide the most protection against health environment and the use of the land as a ratable to the Town of Kearny. We can ill afford to have industrial sites sitting idle while other clean-up studies are conducted. We could conceivably have hundreds of acres of prime industrial land under long range maintenance programs providing no tax ratable at all.

Thanking you in advance for your consideration, I am

Sincerely,

Edward Grosvenor,
Health Officer

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