NEWARK BAY STUDY AREA

ADDITIONAL SITES AND CANDIDATE PRPS FOR THE NEWARK BAY STUDY AREA

VOLUME II OF II

PRP DATA EXTRACTION FORM AND EVIDENCE CONCERNING:

BAYONNE INDUSTRIES, INC
BAYONNE, NEW JERSEY SITE

PREPARED BY:
TIERRA SOLUTIONS, INC.

SUBMITTED TO:
USEPA REGION II

APRIL 2009

SEWER SYSTEM REMEDIAL INVESTIGATION
QUARTERLY REPORT No. 4
Mid-MARCH, 2005 to Mid-JUNE, 2005

BAYONNE INDUSTRIES, Inc. (BII)
250 East 22nd Street
Bayonne, New Jersey 07002

Conducted as part of:
Memorandum of Agreement (MOA) dated 27 May, 1992
Remediation Agreement (RA) dated 22 January, 1999
ISRA Case # 98513

Remedial Investigation Work Plan (RIWP) dated 16 April, 2004

30 June, 2005

CCG000005

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APPENDIX	DESCRIPTION
A	**Photos**
B1	**Sewer Structure Inspection Forms**
B2	**Sewer Line Inspection Forms**
C	**Quarterly Analytical Results**
D	**Sewer Silt Manifests**
E	**EQIS – Underground Inspection Division Report** Includes DVD Copy of Camera Investigation
F	**DRAWINGS**

- **Plot Plan No. F-1662**
  Westside Sewer Layout (North Section)
- **Plot Plan No. F-1663**
  Westside Sewer Layout (South Section)
- **Schedule**
  BII Sewer Cleaning & Video Inspection Schedule,

G	**ANALYTICAL Qa/Qc REPORT (Separate Binder)**

CERTIFICATION

Any person making a submission to the Department required by N.J.A.C. 7:26E shall include the following signature and notarized certification pursuant to 7:26C-1.2(a) 1, for each technical submittal. Additionally, the certification shall indicate the case name and address, case number, and type of documents submitted for each technical submittal.

TYPE OF DOCUMENT Remedial Investigation Work Plan Quarterly Report #2

CASE NAME Bayonne Industries, Inc. (BII) Sewer Investigation

CASE ADDRESS 250 East 22nd Street, Bayonne, New Jersey 07002

MEMORANDUM OF AGREEMENT (MOA) Dated 27 May, 1992

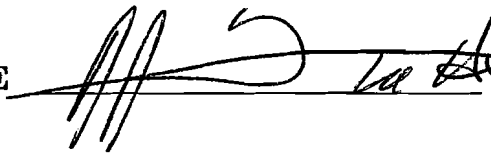
REMEDIATION AGREEMENT (RA) Dated 22 January, 1999

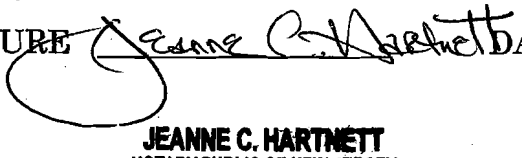
ISRA CASE No.: 98513

REMEDIAL INVESTIGATION WORK PLAN (RIWP) Dated 16 April, 2004

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statue, I am personally liable for penalties."

PRINTED NAME Richard R. Fisette TITLE Terminal Manager

SIGNATURE  DATE 7-8-05

NOTARY SIGNATURE  DATE July 8, 2005

NOTARY SEAL

JEANNE C. HARTNETT
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 02-11-09

1.0 PURPOSE and OBJECTIVES: Mid MARCH, 2005 through Mid JUNE, 2005

1.1 To sample, clean, video inspect and repair as necessary Trunk Line #3 off Sewer Main #1 to the Tank #1700 dike, with the intent of reactivating the gravity sewer line.

1.2 As a result of the initial work on Trunk Line #3 the investigation was expanded to include the sampling, cleaning, video inspection and repair as necessary of Trunk Line #2 off Sewer Main #1 to the Tank #1159 dike area.

1.3 As a result of the initial work on Trunk Line #3 the investigation was expanded to include the sampling, cleaning, video inspection and repair as necessary of Trunk Line #1 off Sewer Main #1 to the Tank #1066 dike area.

1.4 To clean and video investigate the lateral(s) to the Tank #1701 Dike area, off both the #1 & #3 Sewer Mains, with the intent of reactivating the gravity sewer lines and decommissioning the dike lift station.

1.5 To continue cleaning, video investigating and repairing as necessary Sewer Main #3 from Cogen Road upstream to Yard #6.

1.6 To continue updating drawings F-1662, *Westside Sewer Layout (South Section)* and F-1663, *Westside Sewer Layout (North Section).*

2.0 NARRATIVE

Video Inspection proceeded at the fastest pace yet, as summarized in Table 2-0 below, even though the Jet Cleaner/Vacuum Truck was down for repairs from May 2 to May 20.

Paper copies of the video inspection reports completed this quarter can be found attached in Appendix E, *EQIS – Underground Inspection Division Report.* Also included are DVD copies of the camera Investigation.

In the initial RIWP submitted on April, 16, 2004, it was noted that the historical 1953 Tide Water Sewer Drawing indicated that the sewers in Trunk Lines 1, 2 & 3 off sewer Main #1 were of wood stave construction. Furthermore, drawing F-1557, revision 0, included in the RIWP submitted on April 16, 2004, indicated that trunk line #3 had already been abandoned in place and that trunk line #1 was to be replaced.

These plans changed as a result of a project to clean the sediment from the Westside Wastewater Treatment Plant Lagoon. A large contained, impermeable area was needed as a staging area for the sediment. The area serviced by Trunk #3 off Sewer Main #1, had been demolished years ago resulting in a large flat area devoid of aboveground tanks, piping or other equipment that was within an existing dike. The area was graded and a plastic liner installed to act as a pad for the storage of the sludge from the lagoon; see photos #1 & #2 in Appendix A, *Photos.*

However, the area needed a means to direct stormwater runoff from the sediment storage pad to the West Side Wastewater Treatment Plant. As a result the existing sewer Trunk Line #3 off Sewer Main #1 was cleaned and investigated. A new catch basin (CB3T3L3-1) with drain block valve was constructed and tied into Trunk Line #3 off Sewer Main #1 at MH1T3-1; see photo #3 in Appendix A, *Photos.*

TABLE 2-0

LINEAR FEET VIDEO INSPECTED WEEKLY

Week Ending on Sunday	Linear Feet Wood 10" 14"	Conc. / Clay 8" 12" 15"	CI / DI / Steel 8" 12" 20" 24"	TOTAL
3/27/2005				0
4/03/2005				0
4/10/2005		402.3		402.3
4/17/2005		63.6		63.6
4/24/2005		239.9	303.6	543.5
5/01/2005		505.7	230.7	736.4
5/08/2005	JET NOZZLE / VACUUM TRUCK DOWN FOR REPAIRS			0
5/15/2005				0
5/22/2005				0
5/29/2005		649.1	281.2	930.3
6/05/2005		170.7		170.7
6/12/2005	599.8			599.8
TOTALS	**599.8**	**2,031.3**	**815.5**	**3,446.6**
			AVERAGE	**287.2**
			REPAIR ADJUSTED AVERAGE	**383.0**

2.1 TRUNK LINE #3 OFF SEWER MAIN #1

Of the five manholes in the abandoned sewer system, only one was not buried and could initially be found. The undisturbed silt in this structure was sampled on 06 April, 2005. The results are discussed below in Section 4, *Analytical Results,* and summarized in Appendix C, *Quarterly Analytical Results.* A complete paper copy of the laboratory Qa/Qc package can be found in a separate binder as Appendix G, *Analytical Qa/Qc Report.*

Since the other abandoned structures were found by video inspection after jet cleaning of the sewer pipes, it was impossible to obtain undisturbed silt samples from these structures for analysis.

The video inspection of the sewers in Trunk Line #3 off Sewer Main #1 revealed that they were constructed of Cast Iron and not wood stave as had been indicated on the historical drawings. As a result it was decided to also sample, clean and video inspect the sewers in Trunk Lines 1 & 2, in the hope that they would also be found not to be of wood stave construction.

As previously stated only one of the five principal manholes was not buried. The other structures were found through jet cleaning and video inspection of the sewer lines. In addition each of the five manholes were found to be of concrete construction and compartmented with an underflow oil baffle wall. Connections were found in each manhole which had been water draw-off lines from tanks which had been demolished years ago. Each of these water draw-off lines were cut off and plugged at the manholes as summarized in Table 2-1 below and shown in photos #4 through #7 of Appendix A, *Photos.*

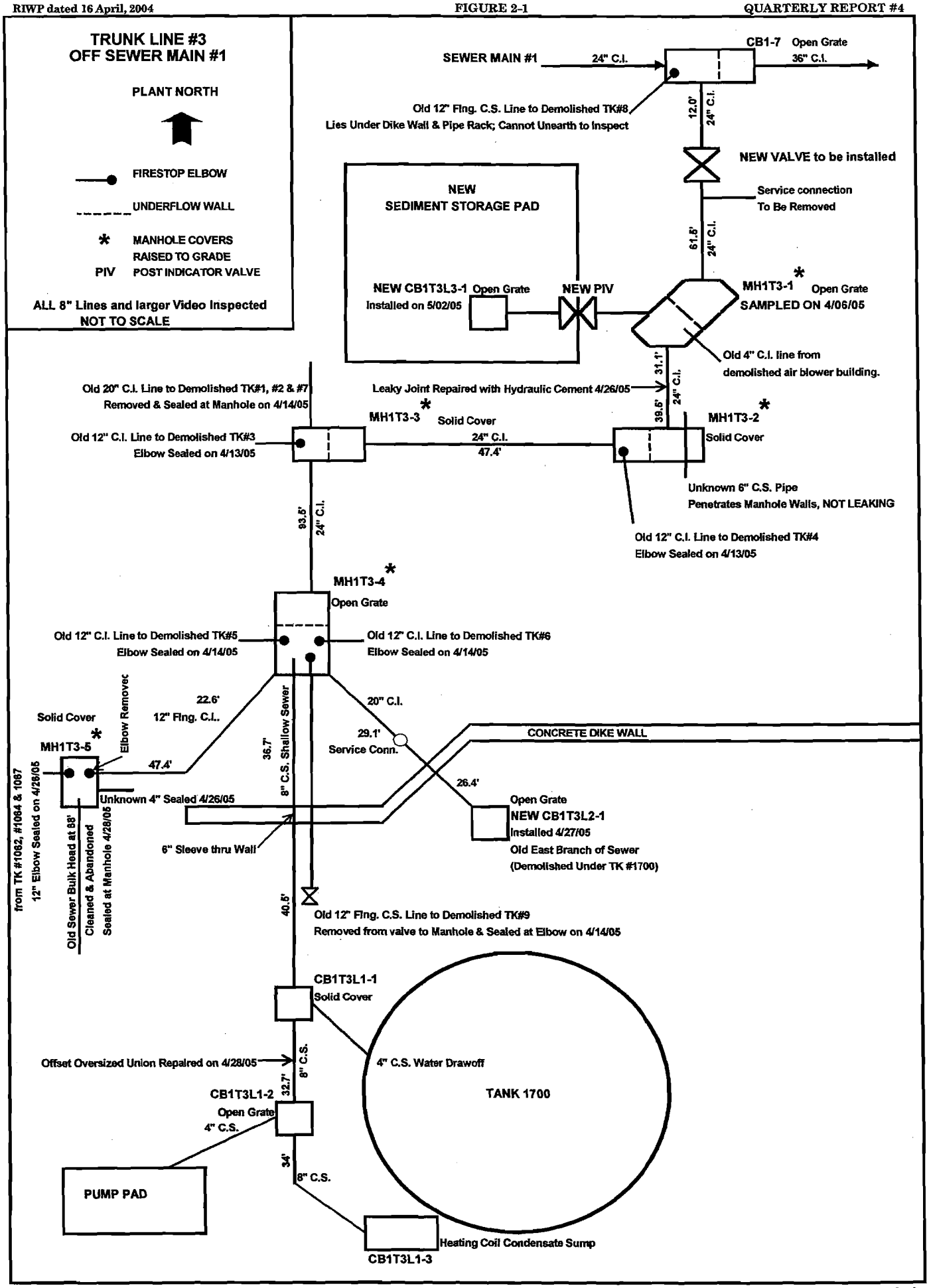
In addition a 6" carbon steel line of unknown origin was found to penetrate the concrete walls and pass through manhole MH1T3-2; see photo #8 in Appendix A; *Photos.* Since no leaks were observed, the pipe was left in place.

The area was graded and all five manholes were raised to grade. The final unearthed and repaired sewer system as it now exists is shown below diagrammatically in Figure 2-1, *Trunk Line #3 Off Sewer Main #1* and on attached Drawing F-1662, *Westside Sewer Layout (South Section),* in Appendix F, *Drawings.*

TABLE 2-1

SEALED SEWER LINES IN STRUCTURES IN TRUNK LINE #3 OFF SEWER MAIN #1

STRUCTURE	DATE	SEWER LINE
MH1T3-1		Old 4" C.I. from demolished air blower building.
MH1T3-2	4/13/2005	12" C.I. water draw-off from demolished tank #4; see photo #4 in Appendix A, *Photos*.
		6" C.S. line through manhole, source unknown, not leaking; see photo #8 in Appendix A, *Photos*.
MH1T3-3	4/13/2005	12" C.I. water draw-off from demolished tank #3; see photo #5 in Appendix A, *Photos*.
	4/14/2005	20" C.I. water draw-off from demolished tanks #1, #2, & #7; see photo #5 in Appendix A, *Photos*.
MH1T3-4	4/14/2005	12" C.I. water draw-off from demolished tank #5 see photo #6 in Appendix A, *Photos*.
		12" C.I. water draw-off from demolished tank #6; see photo #6 in Appendix A, *Photos*.
		12" Flanged C.S. water draw-off from demolished tank #9; see photo #6 in Appendix A, *Photos*.
MH1T3-5	4/26/2005	8" Flanged C.S. water draw-off from demolished tanks #1062, #1064 & #1067; see photo #7 in Appendix A, *Photos*.
		4" C.I. line from unknown source; see photo #7 in Appendix A, *Photos*.
		12" C.I. Trunk Line #3 to unknown sewer structure; see photo #7 in Appendix A, *Photos*.


TRUNK LINE #3
OFF SEWER MAIN #1
PLANT NORTH
FIRESTOP ELBOW
UNDERFLOW WALL
* MANHOLE COVERS RAISED TO GRADE
PIV POST INDICATOR VALVE
ALL 8" Lines and larger Video Inspected
NOT TO SCALE
SEWER MAIN #1
24" C.I.
CB1-7 Open Grate
36" C.I.
Old 12" Flng. C.S. Line to Demolished TK#8
Lies Under Dike Wall & Pipe Rack; Cannot Unearth to Inspect
12.0'
24" C.I.
NEW VALVE to be installed
Service connection
To Be Removed
NEW
SEDIMENT STORAGE PAD
61.8'
24" C.I.
NEW CB1T3L3-1 Open Grate
Installed on 5/02/05
NEW PIV
MH1T3-1 *
Open Grate
SAMPLED ON 4/06/05
Old 4" C.I. line from
demolished air blower building.
31.1'
24" C.I.
Old 20" C.I. Line to Demolished TK#1, #2 & #7
Removed & Sealed at Manhole on 4/14/05
Leaky Joint Repaired with Hydraulic Cement 4/26/05
MH1T3-3 *
Solid Cover
MH1T3-2 *
Solid Cover
39.6'
Old 12" C.I. Line to Demolished TK#3
Elbow Sealed on 4/13/05
24" C.I.
47.4'
Unknown 6" C.S. Pipe
Penetrates Manhole Walls, NOT LEAKING
93.5'
24" C.I.
Old 12" C.I. Line to Demolished TK#4
Elbow Sealed on 4/13/05
MH1T3-4 *
Open Grate
Old 12" C.I. Line to Demolished TK#5
Elbow Sealed on 4/14/05
Old 12" C.I. Line to Demolished TK#6
Elbow Sealed on 4/14/05
Solid Cover
MH1T3-5 *
Elbow Removed
22.6'
12" Flng. C.I.
47.4'
36.7'
8" C.S. Shallow Sewer
20" C.I.
29.1'
Service Conn.
CONCRETE DIKE WALL
26.4'
Unknown 4" Sealed 4/26/05
Open Grate
NEW CB1T3L2-1
Installed 4/27/05
Old East Branch of Sewer
(Demolished Under TK #1700)
6" Sleeve thru Wall
from TK #1062, #1064 & 1067
12" Elbow Sealed on 4/26/05
Old Sewer Bulk Head at 88'
Cleaned & Abandoned
Sealed at Manhole 4/28/05
40.5'
Old 12" Flng. C.S. Line to Demolished TK#9
Removed from valve to Manhole & Sealed at Elbow on 4/14/05
CB1T3L1-1
Solid Cover
Offset Oversized Union Repaired on 4/28/05
8" C.S.
4" C.S. Water Drawoff
TANK 1700
32.7'
CB1T3L1-2
Open Grate
4" C.S.
34'
8" C.S.
PUMP PAD
Heating Coil Condensate Sump
CB1T3L1-3

On April 14, 2005, jet nozzle cleaning of the 24" Cast Iron (CI) Trunk Line #3 from where it enters Sewer Main #1 at CB1-7 indicated an obstruction approximately 12 feet in. At this point work on Trunk Line #3 was suspended and the video equipment was used to inspect repairs made to sewer Main #3 in the Tank 1701 Alleyway, as previously reported in QR#3.

All video inspections of the sewer lines in Trunk Line #3 off Sewer Main #1 revealed concrete manholes, cast iron sewer pipe and tight joints with no anomalies, except as described below.

On April 18, 2005, video inspection of the 24" CI Sewer Trunk Line #3 revealed a partially closed reduced size valve in the line and leaky service connection of unknown origin; see photos #9 & #10 in Appendix A, *Photos*. Excavation revealed a buried gate valve and an old abandoned "P" trap type connection; see photo #11 in Appendix A. This valve will be repaired or replaced next quarter and access from the surface provided. The "P" trap connection will also be removed.

On April 21, 2005, video inspection of the 24" C.I. sewer line between MH1T3-1 and MH1T3-2 revealed infiltration at a joint 39.5 foot downstream from MH1T3-2; see photo #12 in Appendix A, *Photos*. This joint was excavated and repaired with hydraulic cement on April 26, 2005; see photo #13 in Appendix A. Subsequent video inspection on April 26, 2005, revealed the repair to be water tight; see photo # 14.

On April 21, 2005, a 20" Cast Iron sewer line of unknown origin entering MH1T3-4 was video inspected. A service connection was found in the roof at 29.1 feet upstream from MH1T3-4; see photo #15 in Appendix A, *Photos*. The video inspection ended at 55.5 feet where a sewer pipe reduction from 20" to a 12" closed valve was found; see photo #16 in Appendix A. This line went under an intermediate concrete dike wall toward tank # 1700 which was erected in 1958. It is believed that the sewer lines shown in this area on drawing F-1557, revision 0, (based on the 1953 Tide Water Sewer Drawing) included in the RIWP submitted on April 16, 2004, were demolished during the construction of Tank #1700. Therefore, the valve was excavated and removed and a new catch basin CB1T3L2-1 was installed on April 27, 2005; see photo #17 in Appendix A.

On April 26, 2005, a 12" Flanged Cast Iron sewer entering MH1T3-5 from an unknown source was video inspected. Several circumferential cracks were found at 16 to 20 feet into this line. At 68 feet a concrete plug was found; see photo #18 in Appendix A, *Photos*. This line was excavated, broken at the manhole and plugged with concrete on April 28, 2005; see photo #7 in Appendix A, *Photos*.

A relatively new 8" carbon steel sewer was found running across the top of and into MH1T3-4. The origin of this line was found to service the water draw-off and steam coil condensate sump on tank 1700, as well as, the pump pad associated with the tank. It is believed that this line was installed when the tank was erected in 1958. This lateral was designated as Lateral #1, on Trunk Line #3 off Sewer Main #1. The entire lateral was cleaned and all lines equal to or greater than 8" were video inspected.

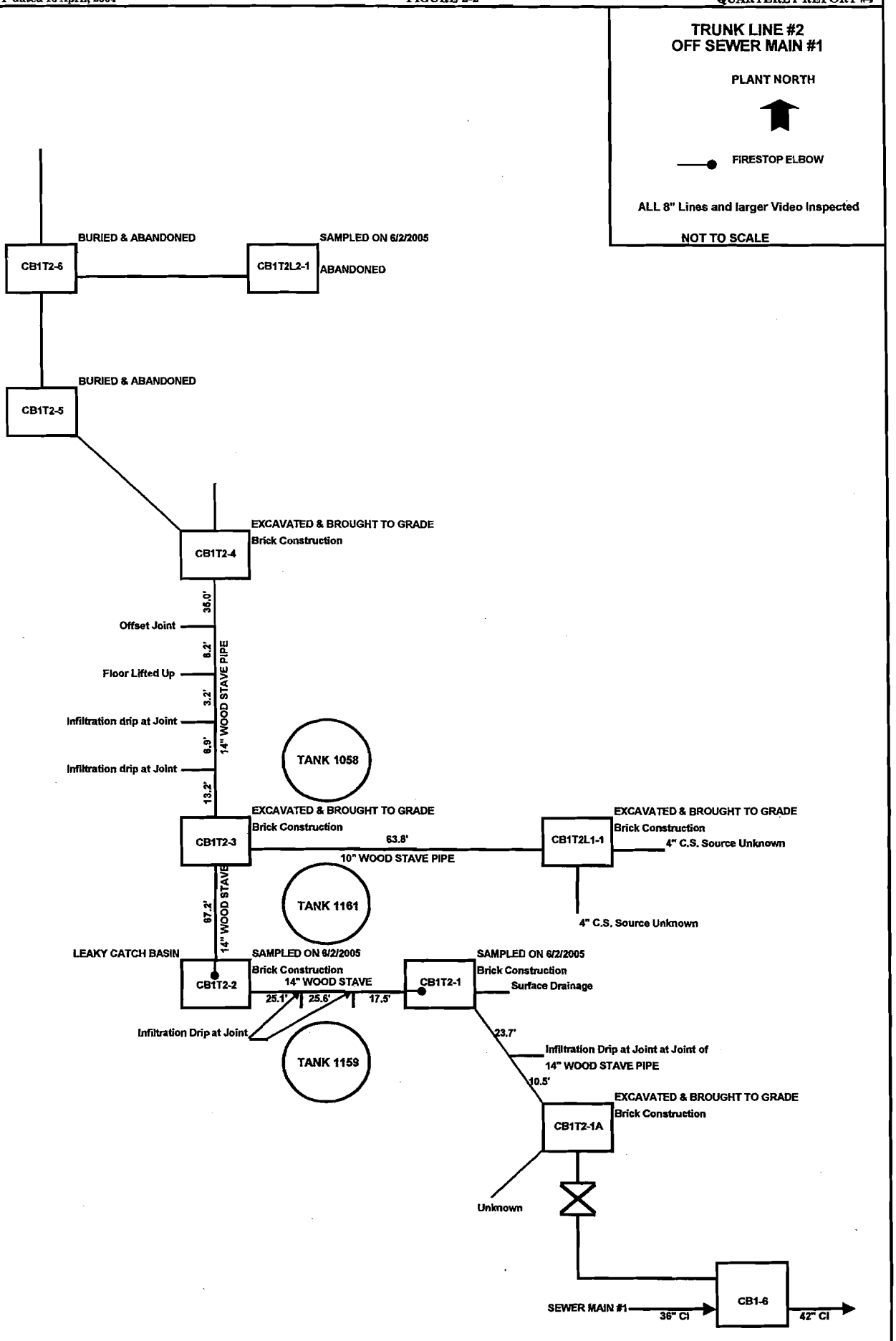
On April 26, 2005, during the video inspection of Lateral #1 an 8" carbon steel sewer line was inspected between CB1T3L1-1 and CB1T3L1-2. An off-set leaky pipe union was found 32.7 feet down stream from CB1T3L1-2; see photo #19 in Appendix A, *Photos*. It was excavated and repaired on April 28, 2005; see photo #20 in Appendix A. Subsequent video inspection of the repair on July 07, 2005, revealed a tight joint; see photo #21 in Appendix A.

2.2 TRUNK LINE #2 OFF SEWER MAIN #1

Undisturbed silt samples from the sewer structures in Trunk Line #2 off Sewer Main #1 were taken on June 02, 2005. These included sewer structures CB1T2-1, CB1T2-2 and CB1T2L2-1, as these were the only structures that were not buried. Since the other abandoned structures were found by video inspection after jet cleaning of the sewer pipes, it was impossible to obtain undisturbed silt samples from these structures for analysis. Analytical results have not been received yet and will be reported in the next QR#5.

Sewer cleaning and inspection began on June 2, 2005. The catch basins were found to be of brick construction and the sewers were wood stave construction. Even though the sewers were of wood construction it was decided to clean and video inspect those portions of Trunk Line #2 off Sewer Main #1 that were presently being used to see if there condition was suitable for possible future lining.

This includes CB1T2-4 downstream to CB1-4 and all laterals as shown on drawing F-1662, *Westside Sewer Layout (South Section)*, revision #1, attached in Appendix F, *Drawings*. The sewer layout as revealed by the video inspection is shown diagrammatically in attached Figure 2-2 below, *Active Portions of Trunk Line #2 off Sewer Main #1.*


TRUNK LINE #2
OFF SEWER MAIN #1
PLANT NORTH
FIRESTOP ELBOW
ALL 8" Lines and larger Video Inspected
NOT TO SCALE
BURIED & ABANDONED
CB1T2-6
SAMPLED ON 6/2/2005
CB1T2L2-1
ABANDONED
BURIED & ABANDONED
CB1T2-5
EXCAVATED & BROUGHT TO GRADE
Brick Construction
CB1T2-4
35.0'
Offset Joint
8.2'
Floor Lifted Up
3.2'
Infiltration drip at Joint
6.3'
Infiltration drip at Joint
13.2'
14" WOOD STAVE PIPE
TANK 1058
EXCAVATED & BROUGHT TO GRADE
Brick Construction
CB1T2-3
63.8'
10" WOOD STAVE PIPE
EXCAVATED & BROUGHT TO GRADE
Brick Construction
CB1T2L1-1
4" C.S. Source Unknown
4" C.S. Source Unknown
67.2'
14" WOOD STAVE
TANK 1161
LEAKY CATCH BASIN
SAMPLED ON 6/2/2005
Brick Construction
CB1T2-2
14" WOOD STAVE
25.1'
25.6'
17.5'
SAMPLED ON 6/2/2005
Brick Construction
CB1T2-1
Surface Drainage
Infiltration Drip at Joint
TANK 1159
23.7'
Infiltration Drip at Joint at Joint of
14" WOOD STAVE PIPE
10.5'
EXCAVATED & BROUGHT TO GRADE
Brick Construction
CB1T2-1A
Unknown
SEWER MAIN #1
36" CI
CB1-6
42" CI

All video inspections of the sewer lines in Trunk Line #2 off Sewer Main #1 revealed brick catch basins, wood stave sewer pipe and tight joints with no anomalies, except as described below.

On June 06, 2005, video inspection of the 14" wood sewer between CB1T2-3 and CB1T2-2 revealed that catch basin CB1T2-2 was leaking; see photo #22 in Appendix A, *Photos*.

On June 06, 2005 video inspection of the 14" wood sewer between CB1T2-3 and CB1T2-4 revealed:

- Infiltration dripping at joints 13.2 and 22.1 feet upstream from CB1T2-3,
- Deformed pipe at 25.3 feet upstream from CB1T2-3; see photo #23 in Appendix A, *Photos*.
- An offset joint at 31.5 feet upstream from CB1T2-3; see photo #24 in Appendix A, *Photos*.

On June 06, 2005 video inspection of the 14" wood sewer between CB1T2-2 and CB1T2-1 revealed infiltration dripping at joints 25.1 and 50.7 feet downstream from CB1T2-2.

On June 07, 2005, video inspection of the 10" wood sewer between CB1T2-3 and CB1T2L1-1 revealed infiltration at a joint 2 feet upstream from CB1T2-3.

On June 08, 2005, video inspection of the 14" wood sewer pipe between CB1T2-1 and discovered CB1T2-1A revealed infiltration dripping at 23.7 feet downstream from CB1T2-1.

None of the above anomalies were considered sever enough to interfere with the possible lining of the wood sewer pipe at a future date.

The section from CB1T2-1A to the juncture with Sewer Main #1 at CB1-6 still needs to be video inspected, including the #2 Trunk Line block valve.

2.3 TRUNK LINE #1 OFF SEWER MAIN #1

Undisturbed silt samples of the sewer structures in Trunk Line #1 off Sewer Main #1 were taken on June 15, 2005. These included sewer structures MH1T1-1, MH1T1-3, MH1T1-5 and MH1T1-7. Analytical results have not been received yet and will be reported in the next QR#5.

The results of the video inspection will be reported in the next quarterly report, QR5.

2.4 REACTIVATE LATERAL(S) FROM TANK 1701 DIKE AND DECOMMISION DIKE LIFT STATION

Preparatory work required prior to cleaning and video inspection of these laterals was started in late June. On June 27, 2005, the excavation of buried manholes and sewer pipes, as well as, the removal of "Firestop" elbows was begun. Sewer cleaning and video inspection will continue into the next quarter and be reported in QR #5.

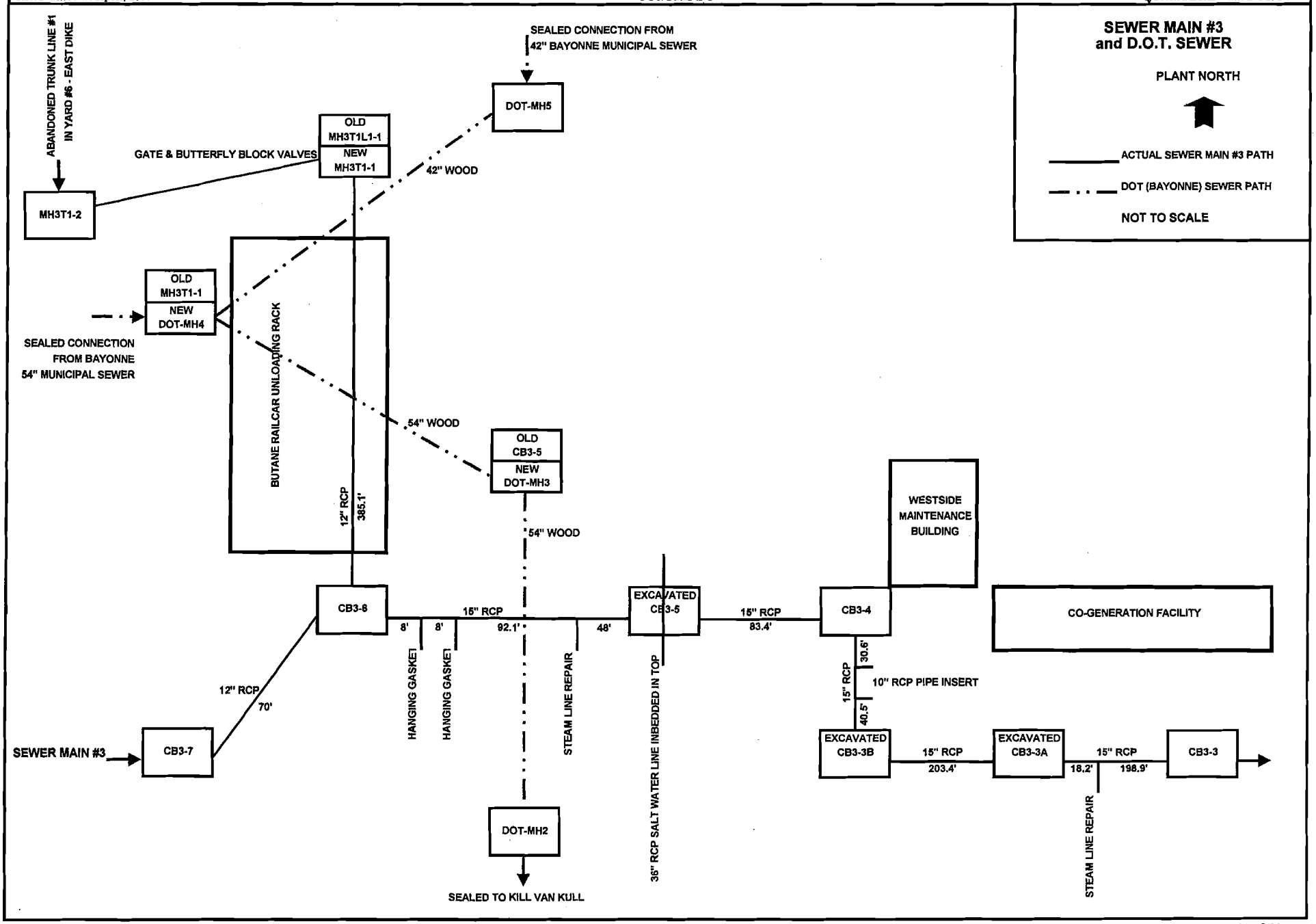
2.5 CONTINUED INSPECTION OF SEWER MAIN #3 INTO YARD #6

Undisturbed silt samples from Sewer Main #3 were taken on 19 November, 2004. The results were reported in the previous QR#3.

The Sewer Main #3 layout is shown on drawing F-1662, *Westside Sewer Layout (South Section)*, revision #1, attached in Appendix F, *Drawings*. The sewer layout as revealed by the video inspection is shown diagrammatically in attached Figure 2-5 below, *Sewer Main #3 and DOT Sewer Line.*

On 22 March, 2005, sewer cleaning and video inspection of the #3 Main sewer line began from where inspection had stopped at CB3-3 last quarter and progressed upstream, west along Cogen Road to yard #6. Video inspections were hampered by the presence of abandoned and twisted 1" steam lines in the sewer pipes.

The video inspection revealed concrete catch basins with a Reinforced Concrete Pipe (RCP) sewer main, except between CB3-9 to CB3-12 which was Ductile Iron (DI). Lateral 1 was constructed of vitrified clay and laterals 2 & 3 were DI. All joints were tight with no anomalies, except as described below.


SEWER MAIN #3
and D.O.T. SEWER
PLANT NORTH
ACTUAL SEWER MAIN #3 PATH
DOT (BAYONNE) SEWER PATH
NOT TO SCALE
ABANDONED TRUNK LINE #1
IN YARD #6 - EAST DIKE
SEALED CONNECTION FROM
42" BAYONNE MUNICIPAL SEWER
DOT-MH5
OLD
MH3T1L1-1
NEW
MH3T1-1
GATE & BUTTERFLY BLOCK VALVES
42" WOOD
MH3T1-2
OLD
MH3T1-1
NEW
DOT-MH4
SEALED CONNECTION
FROM BAYONNE
54" MUNICIPAL SEWER
BUTANE RAILCAR UNLOADING RACK
54" WOOD
OLD
CB3-5
NEW
DOT-MH3
12" RCP
385.1'
54" WOOD
WESTSIDE
MAINTENANCE
BUILDING
CB3-6
15" RCP
8'
8'
92.1'
48'
EXCAVATED
CB3-5
15" RCP
83.4'
CB3-4
CO-GENERATION FACILITY
HANGING GASKET
HANGING GASKET
STEAM LINE REPAIR
36" RCP SALT WATER LINE INBEDDED IN TOP
15" RCP
30.6'
10" RCP PIPE INSERT
40.5'
12" RCP
70'
SEWER MAIN #3
CB3-7
EXCAVATED
CB3-3B
15" RCP
203.4'
EXCAVATED
CB3-3A
15" RCP
18.2'
198.9'
CB3-3
STEAM LINE REPAIR
DOT-MH2
SEALED TO KILL VAN KULL

Cleaning began on March 22, 2005, from CB3-3 upstream. The jet nozzle was ensnared several times and cleaning was stopped in order to excavate the sewer line to remove obstructions and/or uncover buried manholes. CB3-3A was discovered with a bolted on solid top and rubber gasket. It was brought to grade and a grating cover installed. CB3-3B was discovered with an open grating. The area was graded to bring CB3-3B to grade.

On April 05, 2005, a video inspection was attempted from CB3-3A downstream to CB3-3. The camera was blocked at 18.2 feet into the sewer by the presence of a 1" steam line that penetrated the sewer roof, ran down and along the sewer floor; see photo #25 in Appendix A, *Photos.*

On April 06, 2005, a reverse video inspection was performed on this 15" concrete sewer pipe from CB3-3 upstream to CB3-3A which revealed the following.

- At 9.8 feet upstream from CB3-3 a pipe of unknown origin was found penetrating and passing through the sewer pipe; see photo #26 in Appendix A, *Photos.* The penetration was not leaking and the pipe was left in place.

- At 183.6 feet upstream from CB3-3 a longitudinal crack was discovered at 9 o'clock; see photo #27 in Appendix A.

- The inspection ended at 198.9 feet upstream from CB3-3 when the steam pipe penetration found during the reverse inspection on April 05, 2005 was reached; see photo #28 in Appendix A.

On April 12, 2005 the steam pipe was removed from the sewer and the hole patched with hydraulic cement; see photo #29 in Appendix A, *Photos.* The excavation was back filled. The repair was video inspected on April 14, 2005, and no leaks were detected; see photo #30 in Appendix A.

On April 14, 2005, a video inspection in the 15" concrete sewer pipe between CB3-3B and CB3-4 revealed the following.

- At 8.1 feet upstream from CB3-3B a circumferential crack was found running completely around the pipe; see photo #31 in Appendix A, *Photos.*

- At 40.5 feet upstream from CB3-3B the inspection was blocked by a reduced section of 10"(?) steel pipe slipped inside the 15" concrete pipe in what appeared to be a repair; see photo #32 in Appendix A.

On May 31, 2005, a reverse inspection of this 15" RCP from CB3-4 to CB3-3B revealed the following.

- A spot repair at 21.4 feet downstream from CB3-4 at 12 o'clock; see photo #33 in Appendix A, *Photos.*

- At 30.6 feet downstream from CB3-4 the inspection was blocked by the same reduced section of 10"(?) steel pipe slipped inside the 15" concrete pipe in what appeared to be a repair; see photo #34 in Appendix A.

On April 18, 2005, an attempt was made to video inspect the 15" RCP sewer from CB3-6 downstream to CB3-5. The inspection was blocked by a dangling gasket one pipe length downstream from CB3-6; see photo #35 in Appendix A, *Photos.*

On May 31, 2005, a reverse video inspection on the 15" RCP #3 Sewer Main from CB3-5 upstream to CB3-6 was performed. This inspection was initially stopped by a 1" steam line which penetrated the sewer roof and ran down along the floor at 48 feet upstream from CB3-5; see photo #36 in Appendix A, *Photos.* The sewer was excavated at this point and the steam pipe removed. The hole was then sealed with hydraulic cement as shown in photo #37 in Appendix A. Photo #38 in Appendix A shows the video inspection of the repaired hole in the sewer roof. No leaks were detected.

The inspection was then continued and revealed the following.

- Exposed gaskets at 46.8, 131.8 & 139 feet upstream from CB3-5. A typical example is shown in photo #39 in Appendix A.

- Multiple circumferential cracks at 117.8, 125.2 & 132.2 feet upstream from CB3-5. A typical example is shown in photo # 40 in Appendix A.

- A spot repair at 140.1 feet upstream from CB3-5; see photo #41 in Appendix A.

- The video inspection ended at 140.1 when the camera was blocked by another dangling gasket; see photo #42 in Appendix A. This dangling gasket can be seen in the background of photo #35 taken from the reverse direction during the initial video inspection on April 18, 2005. This leaves one pipe length of 15" RCP between the 2 dangling gaskets not video inspected.

On April 18, 2005, a 12" RCP trunk line was video inspected from CB3-6 upstream to what was thought to be MH3T1-1, even though this meant Trunk Line #1 off Sewer Main #3 was connected at CB3-6 instead of CB3-7 as originally thought. See Figure 2-5, *Sewer Main #3 and DOT Sewer Line,* above. This video inspection revealed the following.

- A weeping longitudinal crack from 167.7 to 172.7 feet upstream from CB3-6; see photo #43 in Appendix A, *Photos*.

- The inspection was ended at 239.9 feet from CB3-6 because of flooding where it was believed this sewer line dropped under the 54" Wood Stave Department of Transportation (DOT) Sewer or former Bayonne City Municipal Sewer.

- Based on the direction that this line was taking, it appeared to originate from what was then called MH3T1L1-1 instead of MH3T-1.

On April 28, 2005 a reverse video inspection from MH3T1L1-1, soon to be renamed MH3T1-1, downstream to CB3-6 was attempted; see Figure 2-5, *Sewer Main #3 and DOT Sewer Line,* above. This video inspection revealed the following.

- Multiple circumferential cracks at 49.7, 98.3, 111.2 & 148.2 feet downstream from MH3T1-1(Old MH3TL1-1). A typical example can be seen in photo #44 in Appendix A, *Photos*.

- A spot repair to the 15" RCP at 98.5 feet downstream from MH3T1-1 (Old MH3T1L1-1); see photo #45 in Appendix A.

- An exposed gasket was found at 202.6 feet downstream from MH3T1-1 (Old MH3T1L1-1); see photos #46 in Appendix A.

- The video inspection did end at CB3-6 after 385.1 feet.

On April 29, 2005, the 12" RCP #3 Sewer Main was video inspected from CB3-7 downstream to CB3-6. The video inspection revealed a dangling gasket at 8.8 feet downstream of CB3-7; see photo #47 in Appendix A, *Photos*.

On May 24, 2005, the 12" Ductile Iron (DI) #3 Sewer Main was video inspected from CB3-11 downstream to CB3-10. The video inspection revealed circumferential cracks completely around the pipe at 36.2 & 41.7 feet downstream of CB3-11. A typical circumferential crack is shown in photo #48 in Appendix A.

On May 24, 2005, the 12" DI #3 Sewer Main was video inspected from CB3-8 upstream to CB3-9. The video inspection revealed the following.

- Separated joints at 8.3 & 32.8 feet upstream from CB3-8. A typical separated joint can be seen in photo #49 in Appendix A.

- Circumferential cracks at 99.3 & 135.7 feet upstream from CB3-8. A typical circumferential crack can be seen in photo #50 in Appendix A.

- An exposed gasket at 129.6 feet upstream CB3-8; see photo #51 in Appendix A

- Sever pitting at 172.1 feet upstream from CB3-8; see photo # 52 in Appendix A.

On May 25, 2005, the 12" RCP #2 Lateral off #3 Sewer Main was video inspected from CB3-9 upstream to MH3L2-1. The video inspection revealed the following.

- An exposed gasket 26.8 feet upstream from CB3-9; see photo #53 in Appendix A, *Photos.*

- The inspection ended at 41.7 feet upstream from CB3-9 where a partially closed valve was found; see photo #54 in Appendix A.

On May 25, 2005, a reverse video inspection of the 12" RCP #2 Lateral from MH3L2-1 downstream to CB3-9 was performed. The inspection revealed the following.

- Another exposed gasket was found at 85.5 feet downstream from MH3L2-1; see photo #55 in Appendix A, *Photos.*

- The inspection ended at the other side of the valve shown in photo 54; see photo #56 in Appendix A.

On May 25, 2005, the 8" clay pipe Lateral #2 was video inspected from CB3-9 upstream under the roadway to CB3L1-1 in the pump pad area. This catch basin was never located as a blockage prevented the camera from passing all the way through the sewer lateral. The abbreviated video inspection revealed the following.

- Longitudinal cracks at 17.9 & 30.0 feet upstream from CB3-9. A typical longitudinal crack can be seen in photo #57 in Appendix A, *Photos.*

- A spot repair at 38 feet upstream from CB3-9; see photo #58 in Appendix A.

- Sewer pipe material of construction changes from clay to steel at 39.8 feet upstream from CB3-9; see photo #59 in Appendix A.

- A protruding service connection 57.7 feet upstream from CB3-9 at 4 o'clock; see photo #60 in Appendix A.

On May 25, 2005, the 12" RCP #3 Sewer Main was video inspected from CB3-15 downstream to CB3-14. CB3-15 functions as a valve box which contains the block valve for the eastern dike area in Yard #6. The remaining catch basins beyond this block valve (CB3-16 & CB3-17) were not video inspected, because they are new installations that were installed in July of 2002. The video inspection revealed the following.

- Multiple circumferential cracks at 8.5, 46.3, 61.7 and 131.2 feet downstream from CB3-15. A typical circumferential crack is shown in photo #61 in Appendix A, *Photos*.

- Multiple longitudinal cracks at 44.4 and 52.9 feet downstream from CB3-15. A typical longitudinal crack is shown in photo #62 in Appendix A.

- Broken 12" RCP joint at 140.6 feet downstream from CB3-15; see photo #63 in Appendix A.

- Mineral deposits indicative of infiltration at 158.4 feet downstream from CB3-15 at 11 to 12 o'clock; see photo #64 in Appendix A.

- Dangling gasket at 168.2 feet downstream from CB3-15; see photo #65 in Appendix A.

- Video inspection ended at the elbow at the entrance to CB3-14.

On May 26, 2005, the 15" RCP #3 Sewer Main was video inspected from CB3-4 upstream to CB3-5. The inspection ended 20 feet upstream from CB3-4 when the camera was blocked by a 1" steam pipe in the sewer line; see photo #66 in Appendix A, *Photos*.

On May 26, 2005 a reverse inspection was performed on the 15" RCP #3 Sewer Main from CB3-5 downstream to CB3-4. The inspection revealed the following.

- An offset joint at 8.8 feet downstream from CB3-5; see photo #67, in Appendix A, *Photos*.

- A circumferential crack at a joint 23.8 feet downstream from CB3-5; see photo #68 in Appendix A.

- The inspection ended when the camera was blocked by the same 1" steam line 63.4 feet upstream from CB3-5; see photo #69 in Appendix A.

The 12" RCP #3 Sewer Main from CB3-14 downstream to the lift station, LS3-13, still needs to be video inspected.

The end of Lateral #1 at CB3L1-1 needs to be located and a reverse video inspection made downstream to CB3-9 to the point where the camera was initially blocked. If the blockage is caused by a protruding service connection, than the source and disposition of the connection must be determined.

In addition a section of Trunk Line #3 off Sewer Main #3 still needs to be cleaned and video inspected from CB3T3-5 to CB3T3-9 including laterals 2, 3 & 4. These are all located within the confines of the #6 Yard western dike area.

The beginning of Trunk Line #3 from CB3T3-1 to CB3T3-5 including Lateral #1 is not being video inspected, along with Trunk Line #2 which is the Gate B road drainage. They are all constructed of Ductile Iron and were recently installed in July of 2002.

3.0 INSPECTION RESULTS

Updated *Sewer Structure Inspection Forms* are found attached in Appendix B1 and Updated *Sewer Line Inspection Forms* are found in Appendix B2. The EQUIS-UID Sewer Inspection Sheets and a copy of all video inspections performed this quarter are found attached in Appendix E.

3.1 REPAIRS

3.1.1 Trunk Line #3 Off Sewer Main #1 (Figure 2-1, page 6)

The sewer system in the dike field north of tank 1700 was cleaned and put back in service. Five concrete dual compartment sewer manholes with oil underflow baffle walls were excavated brought, to grade and cleaned.

The cast iron and carbon steel sewer lines were video inspected and two leaks in the sewer lines were repaired.

- A leaky joint in a 24" cast iron sewer line 39.5 feet downstream from MH1T3-2 was repaired with hydraulic cement on April 26, 2005.
- A leaky offset oversized union in an 8" carbon steel sewer line 32.7 feet downstream from CB1T3L1-2 was sealed with hydraulic cement on April 28, 2005.

The sewers that were destroyed when tank 1700 was erected were blocked off from the sewer system and a new prefabricated concrete catch basin, CB1T3L2-1, was installed and the area graded for stormwater drainage control around tank 1700.

A large area was graded and covered with a 40 mil geomembrane for sediment/soil storage and containment. A new catch basin, CB1T3L3-1 was installed for stormwater runoff from this area and tied into the refurbished Sewer Trunk #3 system. A Post Indicator Valve (PIV) was installed to control the flow of runoff from the containment area into the refurbished sewer system.

Remaining work to be done includes:

- The repair or replacement of the dike block valve, including furnishing aboveground access from outside the dike area.
- Removal of the "P" type trap connection between MH1T3-1 and downstream CB1-7.

3.1.2 Trunk Line #2 Off Sewer Main #1 (Figure 2-2, page 10)

The 14" wood sewer and brick catch basins in this area were cleaned and video inspected to determine if it was feasible to line or coat them with a plastic material. Based on the video inspection it is believed that they can be. An engineering specification will be written and quotes for this work obtained next quarter.

Four of the six active catch basins in this area were excavated and brought to grade. The area was then regarded for proper drainage.

When the analytical results are obtained for the silt samples taken from the three catch basins in this area that were accessible, a decision will be made to abandon-in-place, or remove, or video inspect and repair the sewers upstream of CB1T2-4. Depending on this decision, the sewers upstream of CB1T2-4 maybe sealed at the catch basin.

Remaining work to be done includes:

- Video inspection of the 14" wood sewer between CB1T21A and CB1-6, including the dike block valve and making repairs as necessary.
- Seal 3 small inactive sewer lines entering the catch basins.
- Seal the sewer system beyond CB1T2-4.

3.1.3 Sewer Main #3 (Figure 2-5, page 14)

Abandoned 1" steam piping was removed from the sewers and the holes in the top of the concrete sewer pipe where they entered were patched and sealed with hydraulic cement at:

- 18.2 feet downstream from CB3-3A.
- 48 feet upstream from CB3-6.

Remaining work to be done includes:

- Locate CB3L1-1 and complete inspection from CB3-9 to CB3L1-1 in order to determine whether to repair or seal and abandon the lateral.
- Video inspect the sewer line between CB3-14 and LS3-13.

- Cleaning and video inspection of the end of Sewer Main #3 within the Yard #6 western dike area.

3.2 BLOCKAGE OF ABANDONED SEWERS

3.1.1 Trunk Line #3 Off Sewer Main #1 (Figure 2-1, page 6)

The sewers that were destroyed when tank 1700 was erected were sealed from the sewer system.

The water drawoff lines from demolished tanks were broken and sealed at the manholes. See Table 2-1 on page 5.

3.1.2 Trunk Line #2 Off Sewer Main #1 (Figure 2-1, page 10)

After the analytical results are obtained for the silt samples taken from the three catch basins in this area that were accessible, a decision will be made to abandon-in-place, or remove, or video inspect and repair the sewers upstream of CB1T2-4. Depending on this decision, the sewers upstream of CB1T2-4 maybe sealed at the catch basin.

3.1.3 Sewer Main #3 (Figure 2-5, page 14)

No lines were blocked in Sewer Main #3; however, Lateral #1 from CB3-9 to CB3L1-1 still needs evaluation for possible sealing and abandonment.

4.0 ANALYTICAL RESULTS

Analytical results are summarized in attached Appendix C. A paper copy of the Aqua Pro-Tech Laboratories NJDEP deliverables for the analysis is provided along with this quarterly report as Appendix F in a separate binder. An Electronic Data Deliverables (EDD) Diskette will be supplied at a later date when the sample point has been surveyed.

4.1 CATCH BASIN SEDIMENT

Undisturbed silt samples from Sewer Main #3 were taken on 19 November, 2004. The results were reported in the previous QR#3.

An undisturbed silt sample of the only accessible sewer structure, prior to jet cleaning, in Trunk Line #3 off Sewer Main #1 was taken on April 06, 2005. A summary of the analytical results is provided in Appendix C. Lead was the only component that exceeded the Non-Residential Soil Cleanup Criteria (NRSCC). This is believed to be caused by the use of lead to seal the joints in the cast iron sewer pipe

Undisturbed silt samples of the sewer structures in Trunk Line #2 off Sewer Main #1 were taken on June 02, 2005. These included sewer structures CB1T2-1, CB1T2-2 and CB1T2L2-1, as these were the only structures that were not buried. Analytical results have not been received yet and will be reported in the next QR#5.

Undisturbed silt samples of the sewer structures in Trunk Line #1 off Sewer Main #1 were taken on June 14, 2005. These included sewer structures MH1T1-1, MH1T1-3, MH1T1-5 and MH1T1-7. Analytical results have not been received yet and will be reported in the next QR#5.

4.2 SEDIMENT DISPOSAL SAMPLES

The sediment that was cleaned from the sewers was decanted through a portable oil water separator. The solids were then place in roll-off EQ-204 and the water was sent to the Westside Wastewater Treatment Plant. When roll-off EQ-204 was full it was sampled and analyzed for TCLP. The results are summarized in Appendix C. The sediment was non-hazardous.

The sediment was then divided up and placed in several other roll-offs where it was solidified with lime kiln dust or polymer. The solidified material was then hauled off-site for disposal. The waste manifests can be found in Appendix D, *Sewer Silt Manifests*. A summary of the quantities shipped for disposal are found in Table 4-2, *Sewer Silt Disposal*, below.

TABLE 4-2

SEWER SILT DISPOSAL

DATE	MANIFEST No.	DISPOSAL LOCATION	ROLL-OFF No.	WEIGHT POUNDS
06/08/2005	Q 51146	Clean Earth of Carteret	BKRO-012858	53,900.
06/08/2005	Q 51147	Clean Earth of Carteret	EQ-235	43,880.
06/14/2005	Q 41459	Clean Earth of Carteret	EQ-235	48,320.

5.0 SCHEDULE & RECOMMENDATIONS

5.1 SCHEDULE

Because the sewer cleaning is done with high pressure water supplied unheated from a tank truck, it was decided for safety reasons to suspend the sewer cleaning and hence video inspection during the winter. Therefore the updated schedule attached in Appendix F, shows a "winter weather break" from the week before Christmas until the first Monday in March.

The schedule shows the remaining sewer mains being cleaned and video inspected in numerical order. The actual order of cleaning and video inspection may change based on evolving needs and perceived potential environmental impact.

5.2 RECOMMENDATIONS

For the next quarter from mid June through mid September, the following recommendations are made.

5.2.1 To clean, video investigate and repair as necessary the remaining parts of Sewer Main #3 within the Yard #6 dike area.

5.2.2 To finish video inspection and repairs of Trunk Line #1 off Sewer Main #1.

5.2.3 To clean and video investigate the lateral(s) to the Tank #1701 Dike area, off both the #1 & #3 Sewer Mains, with the intent of reactivating the gravity sewer lines and decommissioning the dike lift station.

5.2.4 To clean, video inspect and repair as necessary any other remaining laterals off Sewer Main #1, as time permits.

5.2.5 To prepare engineering specifications and obtain bids for the lining of the wood sewers in Sewer Main #1, Trunk Lines 1 & 2.

5.2.6 To survey over 50 new or excavated sewer structures.

5.2.7 To continue updating the Westside Sewer Layout drawings F-1662, South Section, and F-1663, North Section.

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APPENDIX C
QUARTERLY ANALYSIS SUMMARY
SEWER STRUCTURES

PROJECT No. BA - 0507
DESCRIPTION SEWER INVESTIGATION
SHEET No. 1 OF 3
CALCULATED BY BTT DATE 30-Jun-05
CHECKED BY DATE

ITEM	SOIL CLEANUP NON-RESIDENTIAL CRITERIA	CB1T3-A 4/6/2005 MH1T3-1				HAZARDOUS WASTE CRITERIA	25041034-1 4/21/2005 Roll-Off EQ-204(4)			
% Total Solids		73.90%					84.00%			
pH		NA				2 ≤pH ≥12.5	7.8			
Ignitability		NA				≤140°F	> 140			
Cyanide - mg/kg	21,000	0.340				250.0	<0.30			
Sulfide - mg/kg		NA				500.0	<3.0			
TPHC - mg/kg		54,925					NA			
PCBs - mg/kg	2	U				(1)	U			
Pesticides - mg/kg	(1)	U					U			
METALS - mg/kg										
Antimony	340	4.290					NA			
Arsenic	20	14.800				5.0	0.040			
Barium	47,000	NA				100.0	1.280			
Beryllium	2	0.100					NA			
Cadmium	100	0.670				1.0	0.010			
Chromium	6,100	28.700				5.0	0.050			
Copper	600	163.000					NA			
Lead	600	***35,300.000***				5.0	0.960			
Mercury	270	0.346				0.2	0.005			
Nickel	2,400	32.500					NA			
Selenium	3,100	1.190				1.0	0.125			
Silver	4,100	2.000				5.0	0.150			
Thallium	2	0.480					NA			
Vanadium	7,100	NA					NA			
Zinc	1,500	9,410.000					NA			
TOTAL METALS - mg/kg		44,958.076					2.620			
TOTAL SVOC + VOC - ug/kg	10,000,000	1,149,330								

NOTES	
(1)	Varies with compound.
(2)	Health based criteria exceeds the 1,000,000 ug/kg total VOC criteria.
(3)	Health based criteria exceeds the 10,000,000 ug/kg total organic criteria.
(4)	TCLP Analysis of Roll-Off EQ-204 before solidification with kiln dust
	and transfer to the following for transport off-site.
U	Analyzed for, but, undetected.
NA	Not analyzed for.

8-Jun-05	BKRO-12858	53,900	Pounds	
8-Jun-05	EQ-235	43,880	Pounds	
14-Jun-05	EQ-235	48,320	Pounds	

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APPENDIX C
QUARTERLY ANALYSIS SUMMARY
SEWER STRUCTURES

PROJECT No.	BA - 0507				
DESCRIPTION	SEWER INVESTIGATION				
SHEET No.	2	OF	3		
CALCULATED BY	BTT	DATE	30-Jun-05		
CHECKED BY		DATE			

ITEM	SOIL CLEANUP	CB1T3-A					25041034-1			
Sample Date		4/6/2005					4/21/2005			
VOC - ug/kg	NON-RESIDENTIAL CRITERIA	MH1T3-1				HAZARDOUS WASTE CRITERIA	Roll-Off EQ-204[4]			
Acetone	(2)	U					NA			
Acrylonitrile	5,000	U					NA			
Benzene	13,000	U				500	13.0			
Bromodichloromethane	46,000	U					NA			
Bromoform	370,000	U					NA			
Bromomethane	(2)	U					NA			
2-Butanone	(2)	U				200,000	U			
Carbon tetrachloride	4000	U				500	U			
Chlorobenzene	680,000	U				100,000	349.0			
Chloroform	28,000	U				6,000	U			
Chloromethane	(2)	U					NA			
Dibromochloromethane	(2)	U					NA			
1,2-Dichlorobenzene	(2)	U					NA			
1,3-Dichlorobenzene	(2)	U					NA			
1,4-Dichlorobenzene	(2)	U					NA			
1,1-Dichloroethane	(2)	U					NA			
1,2-Dichloroethane	24,000	U				500	U			
1,1-Dichloroethene	150,000	U				700	U			
1,2-Dichloroethene	(2)	U					NA			
1,2-Dichloropropane	43,000	U					NA			
1,3-Dichloropropane	5,000	U					NA			
Ethylbenzene	(2)	U					NA			
Hexachlorobutadiene	21	U					NA			
4-Methyl-2-pentanone (MIBK)	(2)	U					NA			
Methylene chloride	210,000	U					NA			
Styrene	97,000	U					NA			
1,1,1,2-Tetrachloroethane	310,000	U					NA			
1,1,2,2-Tetrachloroethane	70,000	U					NA			
Tetrachloroethene (PCE)	6,000	U				700	U			
Toluene	(2)	U					NA			
1,2,4-Trichlorobenzene	(2)	U					NA			
1,1,1-Trichloroethane	(2)	U				500	5.7			
1,1,2-Trichloroethane	420,000	U				500				
Trichloroethene (TCE)	54,000	U					NA			
Vinyl chloride	7,000	U				200	U			
m+p-Xylenes	(2)	U					NA			
o-Xylene	(2)	U					NA			
Other Isomers of Octane		0					NA			
Other Isomers of Benzene		51,720					NA			
Others (Unknown)		74,430					NA			
TOTAL VOC - ug/kg	1,000,000	126,150					NA			

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APPENDIX C
QUARTERLY ANALYSIS SUMMARY
SEWER STRUCTURES

PROJECT No. BA - 0507
DESCRIPTION SEWER INVESTIGATION
SHEET No. 3 OF 3
CALCULATED BY BTT DATE 30-Jun-05
CHECKED BY DATE

ITEM	SOIL CLEANUP	CB1T3-A					25041034-1			
Sample Date		4/6/2005					4/21/2005			
SVOC - ug/kg	NON-RESIDENTIAL CRITERIA	MH1T3-1				HAZARDOUS WASTE CRITERIA	Roll-Off EQ-204[4]			
Acenaphthene	(3)	17,900					NA			
Anthracene	(3)	U					NA			
Benzo(a)anthracene	4,000	U					NA			
Benzo(b)fluoranthene	4,000	U					NA			
Benzo(k)fluoranthene	40,000	U					NA			
Benzo(a)pyrene	660	U					NA			
Benzyl Alcohol	(3)	U					NA			
Bis (2-chloroethyl) ether	3,000	U					NA			
Bis(2-chloroisopropyl) ether	(3)	U					NA			
Bis (2-ethylhexyl) phthalate	210,000	1,590					NA			
Butylbenzyl phthalate	(3)	U					NA			
4-Chloroaniline	4,200,000	U					NA			
4-Chloro-3-methyl phenol	(3)	U					NA			
2-Chlorophenol	5,200,000	U					NA			
Chrysene	40,000	2,120					NA			
Dibenzo (a,h) anthracene	660	U					NA			
Di-n-butyl phthalate	(3)	U					NA			
Di-n-octyl phthalate	(3)	U					NA			
1,4- Dichloro Benzene		U				7,500	U			
3,3'-Dichloro benzidine	6,000	U					NA			
2,4-Dichloro phenol	3,100,000	U					NA			
Diethyl phthalate	(3)	U					NA			
2,4-Dimethyl phenol	(3)	U					NA			
Dimethyl phthalate	(3)	U					NA			
2,4-Dinitro phenol	2,100,000	U					NA			
2,4-&2,6-Dinitro toluene	4,000	U				130	U			
Fluoranthene	(3)	U					NA			
Fluorene	(3)	22,200					NA			
Hexachloro benzene	2,000	U				130	U			
Hexachloro butadiene	21,000	U				500	U			
Hexachloro cyclopentadiene	7,300,000	U					NA			
Hexachloro ethane	100,000	U				3,000	U			
Indeno(1,2,3-cd)pyrene	4,000	U					NA			
Isophorone	(3)	U					NA			
2-Methyl naphthalene	(3)	87,300					NA			
2-Methyl phenol	(3)	U				200,000	U			
3 + 4-Methyl phenol	1,000,000	U				200,000	U			
Naphthalene	4,200,000	18,700					NA			
Nitrobenzene	520,000	U				2,000	U			
n-Nitroso diphenyl amine	600,000	U					NA			
n-Nitroso-di-n-propylamine	660	U					NA			
Pentachloro phenol	24,000	U				100,000	U			
Phenol	(3)	U					NA			
Phenanthrene		40,400					NA			
Pyrene	(3)	9,670					NA			
Pyridine		U				5,000	U			
2,4,5-Trichloro phenol	(3)	U				400,000	U			
2,4,6-Trichloro phenol	270,000	U				2,000	U			
Other Isomers of Benzene		44,500					NA			
Other Poly Aromatics		188,500					NA			
Others (Unknown)		590,300					NA			
TOTAL SVOC - ug/kg		1,023,180					NA			

New Jersey Department of Environmental Protection
Site Remediation, Solid and Hazardous Waste Program
Division of Remediation Management and Response
Bureau of Ground Water Pollution Assessment

MEMORANDUM

MAY 12 2004

To: Mark Walters, Case Manager
BCM

From: Mary Hrenda, Geologist
BGWPA

Subject: Site Investigation Report and Free Product Investigation Workplan
Bayonne Industries (BI)
Bayonne, Hudson County
April 2004

Job No./PAC Code: J010N400/V65F

BGWPA has completed a technical review of the subject documents. They have been found to be unacceptable. Comments are provided below. A suggested approach for a sitewide free product investigation that should jump-start a sitewide RI is provided in response to your April 14, 2004 email.

Site Investigation Report (SIR):

1. At the top of p. 2, BI makes a statement that it does not own the products stored at its site, but simply provides warehousing and transfer services, so third parties are always strictly monitoring inventory. BGWPA questions the effectiveness of this monitoring arrangement. BGWPA notes that, even with this strict monitoring of inventory, approximately 51,000 gallons of sodium hydroxide (NaOH) product were leaked in Yard 1 over a period of 12 days prior to 3/30/04. The leak was not discovered until a truck driver loading NaOH observed NaOH coming out of the ground near the loading pad. It is also noted that BI is jointly and severally responsible for any spills and leaks on its facility, along with the product owners and any other responsible third parties. Further comment on this matter is deferred to BCM.

2. BGWPA notes that the site history written by ENSR Consulting and Engineering in 1996 is somewhat out of date at this time. It is also incomplete per N.J.A.C. 7:26E-3.1(c) et seq. A history of spills, leaks, etc. and a listing of products that are or have been stored in each tank at the site would be of particular interest to BGWPA. A table providing chemical and descriptive information on products identified in the foregoing table and history by trade names and/or acronyms is also needed. Current sitewide maps of active and inactive pipelines and active and inactive sewers is also needed. Further comment on this matter is deferred to the case manager.

3. BI shall inform NJDEP what the dark, crosshatched T-shaped area on Fig. 3, depicting the Tank 5076 and 5077 area, represents. No explanation of this map feature is provided on the drawing.

4. BGWPA agrees with the general statement made by BI in the first two sentences in the second paragraph on p. 17. This is that comprehensive sitewide plans to delineate contaminated media at the site and investigate the site sewer system, as required by NJDEP, are needed, rather than investigating localized areas, as was done for the subject SIR. BI has submitted a sitewide free product investigation workplan (FPIW) dated April 2004. Comment on additional ground water investigation activities proposed by BI in the SIR will be addressed in the comments on the FPIW, below.

Free Product Investigation Workplan (Version 2) (FPIW):

CCG000006

The 200+ acre BI site was occupied by refinery operations beginning before the turn of the 20th century until approximately 1949. Since then, it has operated as a bulk storage terminal for petroleum products and other chemicals. Based on BGWPA's experience with other similar sites, it is very likely that contamination with free and/or residual product is widespread throughout the entire site and may be emanating from the site. BI signed a Memorandum of Understanding (MOA) with NJDEP to investigate and remediate the contamination at the site in 1992. At the present time, BI's investigation of free product at the site, excluding the Platty Kill Pond (former oil/water separator) and Platty Kill Canal, has been begun in two areas that together comprise a small portion of the total area of the site using a Geoprobe® equipped with a fuel fluorescence detector (FFD). These are:

- The northwestern portion of Yard 4 (slightly more than one half the total area of this yard);
- The perimeter of the CoGen area in Yard 10, plus the extreme eastern portion of the CoGen area, where proposed boilers are to be constructed.

BI reports that the FFD equipment was damaged, due to sporadic obstructions in the surficial fill at the site, including concrete, bricks and other debris. In the sitewide FPIW, BI proposes investigation for the presence of free product using monitor wells in:

- the areas immediately surrounding six specific aboveground storage tanks,
- the northwestern and southwestern portions of Yard 4,
- the perimeter of the CoGen area in Yard 10 plus two well locations to the southeast and
- in ten widely-spaced monitor well locations, as shown on Fig. 2 of the FPIW. These are mostly located on the perimeter of the 200+-acre site.

In letters dated 10/2/98, 3/26/03 and 1/8/04, NJDEP directed BI to investigate all areas where free and/or residual product may be present across the site and emanating from the site. As noted above, this plan does not present a proposal for a sitewide free product investigation. Therefore, BGWPA finds BI's proposal to be an extremely inadequate response to previous NJDEP directives, and as such, unacceptable.

BGWPA Recommendations: The following approach is recommended in order for BI to complete its delineation of free product on and/or emanating from the site and determine the impact the site is having on receptors within a reasonable period of time and then proceed with developing and implementing appropriate remedial measures. The approach outlined below is justified because:

- The site has a very long history (beginning before the turn of the century) as an oil refinery and petroleum and chemical storage facility, and the delineation of subsurface contamination at the site is still very incomplete.
- Due to the long history of the site and the age of its infrastructure, areas of concern (AOCs) containing free product may exist that are not presently apparent and may not become apparent as a result of a review of the site history.
- The removal or treatment of all free product is required pursuant to N.J.A.C. 7:26E-6.1(d). If removal and treatment of free product are found to be impracticable, containment of free product may be allowed, instead.
- Free product on and/or emanating from the site may impact receptors.
- Free product may be a source of dissolved ground water contamination, which may also be impacting receptors other than ground water.
- The approach outlined below will facilitate rational sitewide prioritization of areas for further investigation, remedial action and appropriate design of remedial systems.

NJDEP notes that all of the spills that BI cites in the FPIW in order to justify the investigation of the areas around certain specific tanks as initial AOCs in the FPIW are not new spills. Therefore, free product resulting from these spills may have migrated and may be commingled with free product from other spills and leaks that have occurred at the site over time. This is further justification for a sitewide approach to free product delineation at the site at this time. In addition, the appropriate design and sizing of needed

remedial systems will be better and more quickly determined following a sitewide free product delineation than it would using the piecemeal approach recommended by BI.

In BGWPA's opinion, the most practical way for BI to conduct a sitewide free/residual product investigation would be to perform a conventional direct-push survey on a grid across the entire site. BI may omit from the initial survey those portions of Yards 4 and 10 where a cone penetrometer/fuel fluorescence detector (CPT/FFD) investigation has been performed and monitor wells have or will be installed in accordance with previous NJDEP comments. In portions of the site where a cone penetrometer survey has not been performed, but BI proposes to install monitor wells in the FPIW, the sitewide direct-push free product investigation shall take precedence. This includes those portions of Yards 4 and 10 that were not included in the CPT/FFD surveys. The grid shall have a maximum grid spacing of 150 to 200 ft. (let's discuss), and samples of product and/or ground water shall be taken at the water table at a minimum of two to three locations within each grid square by the direct push method in accordance with N.J.A.C. 7:9D-2.6. The sample depths below ground surface shall be as close to the water table as possible, based on depths to ground water in existing site monitor wells. Samples shall be retrieved using a clean disposable bailer. Sample locations shall be plotted on a site map, numbered and marked in the field prior to the sampling event. The markers shall be left in place following sampling. Sample locations shall be placed as close as possible downgradient of potential present sources of contamination and/or within and downgradient of any known or suspected historic sources of contamination within a grid square. If evidence of product is detected within a grid square, sample locations in that grid square and adjacent grid squares shall be biased toward the product until delineation of the entire product area has been completed. In case of refusal, the sample location shall be moved five ft., and sampling shall be attempted again, until retrieval of a sample is accomplished. All locations in which free product is encountered shall be reported by grid sample number. All locations in which a ground water sample containing a product layer or sheen and/or droplets of product is retrieved, and/or where product or product sheen is observed on the direct push tool after retrieval shall also be reported by grid sample number. Ground water samples shall be analyzed for (at a minimum) BTEX and MTBE using a field GC. The above ground water screening parameters were chosen because they are among the most mobile contaminants that might result from petroleum contamination in the subsurface and because the analyses of these parameters would be practical using a field GC in a sitewide survey such as the one recommended above. Duplicates of a minimum of 10% of the samples analyzed by field GC shall be sent to a New Jersey certified laboratory for analysis. These shall include duplicates of samples that are non-detect and samples in which high and low contaminant concentrations are detected. Sample labeling, handling, preservation, holding times, chain of custody and reporting requirements for the samples submitted for laboratory analysis shall be appropriate to the analytical method, in accordance with N.J.A.C. 7:26E-2.1 and NJDEP's Field Sampling Procedures Manual (May 1992) (FSPM). Guidance regarding the use of a field GC and appropriate QA/QC is provided in NJDEP's Field Analysis Manual (July 1994) and shall be followed. Locations where free product, sheen and product droplets are detected shall be reported in a table and illustrated on a site map. Ground water sample results shall also be reported on a table and contoured on site maps. Appropriate QA/QC documentation for the field GC and laboratory analyses shall be submitted to NJDEP with the report. Any necessary further discussion on field analysis and/or sample QA/QC is requested from BEERA.

It should be noted that the above investigation will be considered field screening for free product. This is due to the uncertainty of the depth to the air/product and product/ground water interfaces and the depth to ground water when sampling ground water by the direct push method. So, in a number of instances, the sample may be taken below the product-impacted zone. Therefore, temporary wells shall be installed in all areas where evidence of free product, as described above, is detected during the direct push sampling and in areas in which greater than 100,000 ppb of total volatiles was detected using the field GC. A temporary well need not be installed in every direct push sample location in which evidence of free product or total VOs greater than 100,000 ppb were detected. However, a sufficient number of temporary wells shall be installed to delineate the extent of free product within the area. All boreholes in which a temporary well is not installed shall be sealed within 48 hours of installation in accordance with N.J.A.C. 7:9D-3.4. The temporary wells shall be driven wells installed by a New Jersey licensed well driller by the direct push method. They shall be installed so that the screen will intersect the air/product interface, product/water interface and water table at all times. They shall be developed by surging and pumping and left in place for

no more than two weeks (14 days). This will require a deviation to be granted by NJDEP's Bureau of Water Allocation (BWA) from N.J.A.C. 7:9D-3.4(a) 1. Such deviations have been granted in the past when determined to be necessary by the Site Remediation Program. Near the end of the 14-day period, the temporary wells shall be checked for free product thickness using an interface probe. At the end of the fourteen day period following temporary well installation, all temporary wells shall be decommissioned by grouting with an NJDEP-approved grout in accordance with N.J.A.C. 7:9D-3.1 et seq. The temporary wells shall be numbered. The free product thicknesses measured in the temporary wells shall be reported on a table and a map in a report to NJDEP.

The ground water sampling recommended above is a screening process involving some of the most mobile contaminants related to petroleum products, designed to give a quick, preliminary, approximate picture of the extent of ground water contamination at the site. Sampling for all other parameters related to past and present activities at the site will be needed in the next phase of the investigation.

The results of the above program of free product delineation and ground water sampling shall be included in a report to NJDEP. The report shall include the above-noted maps, tables and QA/QC documentation, along with a narrative on the field methods used, interpretation of results, any difficulties encountered, what was done in response to these difficulties, and recommendations.

Samples for free product characterization/identification may be taken in the initial stage of the investigation and/or in the next phase. If sampling for free product characterization/identification is performed in the initial phase of the investigation, the results of these activities shall also be included in the report.

The results of the above sitewide free product/ground water sampling activities may reveal areas of soil contamination that are acting as a source for ground water contamination. Further comment on soil at the site is deferred to BEERA.

The rough product delineation using temporary wells will be used to guide the placement of permanent monitor wells for free product delineation, free product characterization, further refinement of ground water flow directions at the site and ground water sampling for the appropriate parameters, based on the type of product and/or other contaminant source(s) present near and/or upgradient of the well. Locations for such wells shall be included in a workplan for the next phase of the sitewide free product investigation, which shall accompany the report on the direct push free product and ground water investigation and the temporary well investigation. The permanent monitor wells will also be needed for baildown testing to establish the "true" product thickness, product recovery testing to determine the appropriate type of recovery system for each product plume and, eventually, to monitor the effectiveness of future product recovery systems and the natural or active remediation of ground water following the remediation of free product. Initial ground water sampling parameters for the permanent monitor wells will be based on the results of the field GC program and the type(s) of source material and/or source areas located near and/or upgradient of the wells based on current and historic information. For contaminant plumes resulting from sources consisting of petroleum products only, these parameters shall be in accordance with N.J.A.C. 7:26E-2.1(d), at a minimum. BI's workplan shall include a plan and timetable for the above activities.

Other Comments on the FPIW: As stated above, BGWPA has found the subject FPIW to be unacceptable and recommends the approach described above. Therefore specific comment on the FPIW activities proposed by BI in specific areas of the site are not provided in this memo. The comments below are general in nature.

There seems to be yellow lettering on Fig. 2, Site-Wide Proposed Well Location Map. It is illegible. Per N.J.A.C. 7:26E-3.13(d), all maps submitted to NJDEP shall be legible.

BI shall be careful not to penetrate the entire thickness of the "meadow mat" layer when installing shallow temporary wells, borings, wells, etc.

BI shall coordinate with the NJDEP/Site Remediation case team to obtain approval from the Bureau of Water Allocation to install temporary wells and leave them in place for 14 days.

For the direct-push free product/ground water sampling survey, the direct-push soil boring equipment shall be operated by a New Jersey-licensed soil borer or driller and overseen by a qualified geologist. Installation of the temporary wells shall be performed by a New Jersey licensed driller and overseen by a qualified geologist. They shall be installed in accordance with the comments in this memo and all requirements imposed by NJDEP's Bureau of Water Allocation. The temporary wells shall be decommissioned by a New Jersey licensed driller by pressure grouting from the bottom of the hole to ground surface until grout flowing from the top of the hole is the same density as the grout being pumped in. The grout used shall be an NJDEP-approved grout in accordance with N.J.A.C. 7:26E-3.1(i). The grouted holes shall be checked for settling by the driller 24 to 72 hours after the grouting has been performed, and any void space at the top of the hole shall be resealed.

Many of the portions of the QAPP are not relevant to the above recommended initial sitewide delineation activities. Therefore, detailed comments are not provided. BI shall resubmit relevant portions of the QAPP with the workplan for the next phase of the sitewide free product investigation. General comments prompted by the Ground Water Sampling portion of the QAPP (Section 3.2.6) are provided below for BI's future reference:

NJDEP does not consider low flow sampling to be an acceptable option for sampling of monitor wells the first time they are sampled.

Low flow sampling may not be performed at a site unless prior approval of a site-specific low flow sampling plan has been obtained from NJDEP. The low flow sampling plan must be in accordance with EPA Region II's low flow sampling guidance entitled, Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling (March 16, 1998). It shall include the types of equipment to be used for purging and sampling and measurement of field stabilization parameters and a specific pump intake setting for each well to be sampled by the low flow method.

Peristaltic pumps are not considered by to be suitable devices for low flow purging and sampling or for collecting samples for volatile organic analysis by NJDEP. This is due to the fact that negative pressures on pumped water induced by this type of pump can cause a loss of volatile constituents from the sample and unreliable readings of field stabilization indicator parameters for low flow sampling. The following is an excerpt from current NJDEP guidance on the use of peristaltic pumps:

> Due to the undesirable effects of negative pressure, which a peristaltic pump continuously imparts to a sample, accurate and reproducible measurement of air sensitive parameters cannot be obtained. This bias is extended to samples collected for, but not limited to the following analyses: VOCs, dissolved oxygen, pH, carbon dioxide, iron and its associated forms (ferric and ferrous).

TPHC is not a required ground water analytical parameter for the investigation of petroleum storage and discharge areas per N.J.A.C. 7:26E-2.1(d).

NJDEP does not require the repeated monitoring of field parameters for stabilization during purging when ground water sampling is performed by the conventional method (3 to 5 volume purge and sampling per FSPM). Purging of less than the required 3 to 5 well volumes when this method is used may not be done on the basis of field parameter measurements. Recording and reporting of field parameters when the conventional method is used shall be in accordance with N.J.A.C. 7:26E-3/13(c) 7.

NJDEP requires samples submitted for metals analysis to be total (unfiltered) metals samples. (Please see Section H.5.3 of Chapter 7 of FSPM.) Analysis of filtered samples may be performed for BI's own use.

If you have any questions or require any additional information, please do not hesitate to email me or call me at 292-9904.

C: E. Fernandez, BGWPA
R. Lux, BGWPA
[redacted]

11953

BLUESTONE ENVIRONMENTAL SERVICES, L.L.C.

Soil Reuse Plan For the Platty Kill Pond, Bayonne Industries- Bayonne, NJ

Prepared for:

B.I. Inc.

February, 2003

Bayonne, New Jersey

CCG000007

BLUESTONE
ENVIRONMENTAL SERVICES, LLC
489 Union Avenue, Suite C
Bridgewater, New Jersey 08807
732-469-5188 / 732-469-5187 fax
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February 7, 2003
Project:IMT01PND

Michael S. Kenney, Case Manager
Bureau of Case Management
401 East State Street
P.O. Box 028
Trenton, NJ 08625-0028

Re: In the Matter of the Bayonne Industries Site and Bayonne Industries, Inc.
City of Bayonne, Hudson County, New Jersey
Contaminated Site List No. NJD064288855
Memorandum of Agreement (MOA) dated 27 May 1992
Soil Reuse Plan for the Maintenance Soil staging Piles

Dear Mr. Kenney:

On behalf of Bayonne Industries Inc. (BI), we are pleased to provide the Soil Reuse Plan for the Maintenance Soil Staging Piles at Bayonne Industries, Inc. associated with the Remedial Action Work Plan (RAWP) conditional approval for the closure of the Platty Kill Pond (PKP).

This document is being submitted for your review and concurrence as per the recommendation in the Department's conditional approval dated 5/18/01, and subsequent conditions specified by the Department in its 11/15/02 comments to the Draft Soil Reuse Plan.

Should you have any questions or require any additional information, please do not hesitate to contact me.

Sincerely,
BLUESTONE ENVIRONMENTAL SERVICES, LLC

Andrew M. Cozzi, CPG
Principal Geologist

Enclosures
cc: Mr. Richard Fisette
Mr. George Bress
Mr. Rusty Walker
NJDEP – 3 copies & original

\\Bluestone\admin\PROJECTS\IMTT\IMT00PND\Plans for Work\Stockpile\RomanBathsSoilReuse\CoverLetter-ACtoMK,2-4-03.DOC

SOIL REUSE PLAN
MAINTENANCE SOIL STAGING PILES
BAYONNE INDUSTRIES, INC.
BAYONNE, NEW JERSEY

CERTIFICATIONS - N.J.A.C. 7:26-1.2 et. seq.

Any person making a submission to the Department required by this chapter and pursuant to N.J.A.C. 7:26E, shall include the following signature and notarized certification, for each technical submittal. Additionally, the certification shall indicate the case name and address, case number, type of documents submitted, e.g. Remedial Action Report, for each technical submittal.

TYPE OF DOCUMENT Soil Reuse Plan

CASE NAME Memorandum of Agreement Dated May 27, 1992

CASE ADDRESS 250 East 22nd St., Bayonne, New Jersey

CASE NUMBER Contaminated Site List Number NJD064288855

The following certification shall be signed by:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner of the proprietor, respectively, or;
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.
4. For persons other than I through 3 above, by the person with legal responsibility for the site.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge. I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

PRINTED NAME Richard R. Fisette TITLE Terminal Manager

SIGNATURE [signature] DATE 2-5-03

NOTARY SIGNATURE [signature] DATE 2/5/03

Sworn to and subscribed before me this 5th day of Feb. 2003

LYNN MARIE SHERIDAN
NOTARY PUBLIC OF NEW JERSEY
Commission Expires 3/31/2004

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Appendices

Appendix A- Complete Laboratory Analysis

Appendix B – Hudson County Chromate Study

Appendix C – Topographic Survey of Soil Stockpiles at Yard 1

SOIL REUSE PLAN

HISTORIC MAINTENANCE SOIL STAGING PILES

BAYONNE, NEW JERSEY

1.0 INTRODUCTION

IMTT has prepared this revised Soil Reuse Plan (SRP) to incorporate comments received from the Department on November 15, 2002. This document also provides a detailed description of the sampling and characterization tasks that have been completed toward satisfying the Department's requirements and in conformance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E-6.2(b), and the *Guidance Document for the Remediation of Contaminated Soils* (NJDEP/98) as noted in the Department's correspondence.

IMTT is proposing to use previously identified staged soils during the Platty Kill Pond (PKP) closure for entrance ramping during mixing in the PKP and as a binding agent during solidification and back-filling operations. These soils will be incorporated into the PKP to aide in the solidification.

The staged soils addressed in this soil reuse plan consist of an approximately 3,500 CY stockpile (Stockpile A) located in Yard 1, and a smaller, adjacent 440 CY stockpile (Stockpile B). Added to this revision is the proposed reuse of approximately 1000 CY of soils (Stockpile C) remaining from a November 2002 sewer installation in Yard 6 of the facility.

A soil waste characterization with associated sampling and analytical results is included in this plan. **Figure 1** provides the location of the staged soils in relation to the Platty Kill Pond.

1.1 Origin of Stockpiled Soils

According to the November, 1996 ENSR Report (p. 5-25, p. 5-53), the historically staged soils (Stockpiles A and B) originated from the remediation of reported releases of approximately 25,000 gallons of No. 6 fuel oil at Tank 1701 on December 15, 1989 and a 10,000 gallon No. 6 oil spill from Tank 6203 in 1993. Both staged soil stockpiles were covered and underlain with plastic sheeting liner for future reuse.

A third stockpile (Stockpile C) was produced in November 2002 during the installation of a new sewer pipeline adjacent to the north-south roadway in Yard 6. This stockpile also exhibited concentrations greater than 10,000 ppm for TPHC. Further sampling was completed to characterize these soils and is included herein.

IMTT initially collected a waste classification sample in March, 1993 from the larger, staged soil stockpile and submitted the sample for analysis for TPHC by USEPA methodology 418.1; and Toxicity Characteristic Leachate Procedure (TCLP) volatile organic compounds (VOCs), semi-volatile organic compounds (VOCs - includes acid extractable and base neutral compounds), pesticides, herbicides, and metals. This sample was submitted to AnalytiKEM Inc. of Cherry Hill, New Jersey for analysis. Results are summarized in **Table 1**. Complete laboratory analytical data package is included in **Appendix A**.

Post-excavation sampling was conducted by ENSR as part of the Phase I RI around both Tanks as part of a Remedial Investigation. Those sampling results generally show that remediation was complete around Tank 6203 and that further soil evaluation is required along the western portion of Tank 1701. Details of the findings are presented in the November, 1996 RIR.

IMTT also collected five discrete soil samples from Stockpiles A & B and submitted these samples for TPHC analysis. The samples were collected from the surface or at a specific

depth. At sample locations 1 and 2, soil was submitted for analysis from the surface and from two feet below the surface. In location 3, soil from five feet below the surface was submitted for analysis. These five samples were submitted to IEA of Whippany, New Jersey. Results are included in **Table 2** as sample sets 1, 2, and 3. Complete laboratory analytical data package is included in **Appendix A**.

The third, recent stockpile (Stockpile C) from the new sewer installation project, showed high initial TPH values (**Table 3**) and were re-sampled and analyzed for all the same soil reuse parameters as the Yard 1 stockpiles for proposed use in the PKP (see **Tables 4 and 5**).

2.0 ORPHAN CHROMIUM SAMPLING BY NJDEP

In addition to the IMTT sampling program, the NJDEP collected 10 samples south of Tank 6204 (south of the Tank 6203 spill) and 10 samples north of Tank 1701 in Area 7 in November 2001. These samples were part of the Orphan Chrome site investigation (Site 139, Areas 7 & 4A) implemented by the Department. Results and sample locations are attached in **Appendix B**. The results indicate that at Area 4A total Chrome ranged from 34 to 148 ppm and Hexavalent Chrome ranged from 0.03 to 3 ppm. The results indicate that at Area 7 total Chrome ranged from 24 to 1640 ppm and Hexavalent Chrome ranged from 0.14 to 270 ppm.

3.0 SOIL CHARACTERIZATION SAMPLING AND ANALYSIS

Several rounds of soil samples were collected for reuse in the PKP. The purpose of the sampling programs was to characterize the staged soil stockpiles located in Yard 1 and Yard 6. Soils in the staging area are to be used for mobilizing (ramping) mixing equipment into the PKP and subsequently mixed into the stabilized sludge. An engineered cap will then be placed on top of the stabilized sludge.

The staged soils were sampled to determine if reuse in the PKP was appropriate. A soil characterization with associated sampling and analytical results is included in this plan and indicates most of the soils are suitable for reuse. Although soils with free product are not anticipated, any soils with TPHC above 30,000 milligrams per kilogram (mg/kg) (ppm) will be solidified during reuse as part of this project.

3.1 Sample Collection

To better determine the volume of soil in the irregular shaped stockpile A, it was surveyed and mapped by J. Peter Borbas Surveyors of Boonton, New Jersey. The volume calculations and base map are attached in **Appendix C**. The survey was later used to divide the irregular shaped stockpile into seven approximately equal portions of 500 CY.

On December 3, 2002, the first borings were advanced to the approximate depth of the bottom of the two stockpiles. Discreet samples were collected based on PID readings of the borings. The two areas that were re-sampled for TCLP lead were spaced within the equal volume portions of the stockpile based on the surveyed contours of the stockpile. The locations of all Geoprobe soil borings driven into the stockpile are provided on **Figures 2, 3 and 4**.

3.2 Initial TCLP Sampling and Analytical Results

The initial March, 1993 TCLP analysis of the waste classification sample showed that only lead and barium were within detection limits in the TCLP analysis. The attached **Table 1** provides the detectable, "hits only" concentrations and the corresponding New Jersey Department Environmental Protection NJDEP Hazardous Level.

Based on the results of the waste classification analyses summarized in **Table 1**, the staged soil did not exhibit any toxic characteristics. The concentration of lead and barium detected, were below the EPA regulatory levels for toxic characteristic hazardous waste.

The laboratory conformance summary indicated a conformance with the laboratory quality Assurance/Quality Control Requirements for sampling receipt and handling. The laboratory deliverables packages for the all soil samples are included in the Appendices.

3.3 TPHC Sampling and Analytical Results

One TPHC analysis was performed as part of the initial classification sample analysis event. At that time, five discrete soil samples were also analyzed for TPHC.

During September 2002, thirteen soil borings in the larger, soil stockpile (A) and two in the smaller, adjacent stockpile (B) were installed by Bluestone Environmental Services to further characterize the stockpiles for reuse in the PKP. A composite sample from each boring was submitted to Accutest Laboratories of Dayton, New Jersey for laboratory analysis for TPHC. The samples were collected using 4-foot long, 2-inch diameter, macro core samplers. The samples were field screened with a Photoionization detector (PID). The highest PID reading was 55 ppm above background in boring Y1S-2. Staining and a petroleum odor were noticeable in all of the soil borings installed.

The results of these samples are included in **Table 2** and indicated that soil reuse in the PKP was an appropriate method of disposal minimizing both off site disposal and importing of fill necessary to close the PKP.

3.4 Soil Reuse Parameter Sampling and Analysis

To thoroughly determine the suitability of the soils for reuse in the PKP, 15 borings were installed in the two staged soil stockpiles and composite samples (Y1-S through BIO-1) of each of these borings were submitted for TPHC analysis. These borings locations are shown on **Figure 2**.

On December 3, 2002, a total of eight soil borings were advanced in Stockpiles A and B and eight classification samples collected following the Department's November 2002 comments, the Technical Requirements for Site Remediation, N.J.A.C. 7:26E-6.2(b), and the *Guidance Document for the Remediation of Contaminated Soils* (NJDEP/98).

The borings were advanced using a Geoprobe drilling rig with 4-foot long, 2-inch diameter macrocore samplers, and advanced to the approximate depth of the bottom of the two stockpiles. The locations of these soil borings (RB-1 through RB-8) are provided on **Figure 3**.

Seven borings were advanced in the larger stockpile (Stockpile A), and one in the smaller stockpile (Stockpile B). Each four-foot sample interval was field screened with a Photoionization detector (PID), and one discrete sample was collected from each boring at the interval exhibiting the highest PID reading. PID readings indicated that the highest concentration of volatiles was found in the 8'-12' interval in all of the borings except RB-2, which exhibited higher readings (32 ppm) in the 4' - 8' interval. The highest PID reading was 55 ppm above background in boring RB-8. Staining and a petroleum odor were noticeable in all of the soil borings installed.

The eight discrete grab samples were submitted to Aqua Pro-Tech Laboratories (APL), of Fairfield, New Jersey for analysis for: Toxicity Characteristic Leachate Procedure (TCLP) metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and pesticides. The SVOCs analysis included acid extractable and base neutral compounds.

Analysis also included RCRA characteristics (corrosivity, ignitability, and reactivity). Results are summarized in **Table 6**.

Stockpile C, from the Yard 6 sewer construction project, was sampled to determine suitability for reuse in the PKP. TPHC concentrations from initial analyses revealed levels ranging from 4,190 ppm to 25,000 ppm **(Table 3)** in five borings conducted at the stockpile. Subsequent characterization re-sampling for re-use was conducted on January 7, 2003 and analyzed for the same parameters as the Yard 1 Stockpile A, B samples. Results are summarized in **Table 4**.

The results of the Soil Reuse Characterization analyses for Stockpiles A and B indicate the staged soil did exceed New Jersey Soil Cleanup Criteria for selected VOCs, SVOC's Thallium and Lead. (see **Table 7**).

At two of the discreet locations sampled during the December 3, 2002 event, TCLP lead results exceed the RCRA Hazardous Waste Criteria of 5 ppm Lead. The results of the TCLP waste classification analyses are summarized in **Table 6**. Samples RB-3 and RB-8 exhibited TCLP concentrations of lead at 9.06 ppm and 6.11 ppm in respectively.

3.5 Resampling and Averaging for TCLP Lead

To better determine the average lead concentration in the soil in portions of Stockpile A which exceed TCLP concentrations for RCRA, a weight composite re-sampling was completed. Two 500 CY areas, represented by samples RB-3 and RB-8 were re-sampled in four-foot intervals from the surface.

For each of these two portions of the stockpile, five sample core locations were selected around the two original sampling points (see **Figure 4**). At each of the five (ten total) new

locations, four foot long geoprobe core samples were collected representing three four foot thick layers for each resampling area (0-4 feet, 4-8 feet and 8-12 feet from surface). Five samples from each four-foot layer (30 total) were composited by weight. Each five-sample composites represents a four-foot thick layer within specific areas the stockpile first represented by RB-3 and RB-8.

The resulting average composite samples from the three layers sampled within RB-3 and RB-8 areas were 2.98 and 3.39 ppm, TCLP Lead respectively. A summary table is included as **Table 8** and a map depicting the re-sampling layout is attached as **Figure 4**. The composite *layer* re-sampling results ranged from 0.48 to 5.29 ppm TCLP lead.

Based on these results, the layer that exceeded 5-ppm lead will be removed from the stockpile for off site disposal. The remainder of the stockpile is appropriate for reuse in the PKP.

4.0 PRELIMINARY RESULTS OF SOIL REUSE BENCH TESTING

Additional soils from the September, 2002 Stockpile A and B sampling event were submitted to O'Brien and Gere Laboratories for use in a bench testing program designed to develop a suitable mix for adding to the PKP. Of a total of four samples, two were used to develop the appropriate mix ratios to satisfy the specifications for the fill material. The two samples each contained 15% (by weight) soil from the stockpile, and 12% varied add mixtures. Analytical results from the early "recipe" testing show that both of the mixes (21 day cure samples) are below the EPA regulatory levels for TCLP including lead. At this time, the mix design is incomplete, however, indications are that the design will address the average concentration of TCLP lead found in the stockpiled soils.

5.0 SOIL DISPOSAL AND REUSE PROPOSAL

The following Soil Reuse is presented for the Platty Kill Pond:

- One portion of Stockpile A is not suitable for reuse in the PKP due to elevated level of leachable lead. Composite layer RB-3C collected 8-12 feet below surface remains as the only area of the stockpile where average soils contain concentrations of lead above RCRA guidelines. These soils are planned to be uncovered for removal and disposal at an appropriate soil disposal facility.

- Discrete samples from a second portion of the stockpile initially indicated that the soil exceeded RCRA criteria. Subsequent detailed sampling of the same area indicates that the average TCLP lead concentration for that portion of the stockpile is below criteria and is appropriate for reuse in the PKP.

- Approximately 1000 CY of soils from a sewer installation project that are impacted with Petroleum Hydrocarbons are proposed for reuse in the PKP.

Based on the soil sample analytical results and characterization described above, IMTT requests approval from the NJDEP for on-site soil reuse of the staged soil stockpiles as amended fill in the PKP closure project. This material will be included in the final mix design and is expected to be aide in the closure as a binding material while minimizing the need for importing fill. Reuse of this material in the PKP will provide a beneficial means of keeping the impacted soil on site.

Table 1
Summary of Detectable TCLP Concentrations
Initial Waste Classification Sample
IMTT Bayonne – Yard 1 Stockpiles
(Stockpile A - March 1993)

Parameter/Contaminant	Concentration (In mg/l)	Hazardous Level (In mg/l)
Lead	2.6	5.0
Barium	0.54 J	100.0

Notes:
J Estimated concentration detected below the limits of the methodology
mg/l Milligrams per liter (ppm)

Date of Sampling March 1993

Table 2
Summary of Screening TPHC Concentrations
IMTT Bayonne - Yard 1 Stockpiles
(Stockpiles A and B)

Sample Location	Sample Depth or Total Depth of Boring (Y1S and BIO samples) (In feet)	Highest PID Reading (In ppm)	TPHC Concentration (In mg/kg)
Waste Classification Sample	Surface	NR	24,000
1	2	NR	35,000
1	2	NR	17,000
2	Surface	NR	56,000
2	2	NR	27,000
3	5	NR	63,000
Y1S-1	8	47.5	23,400
Y1S-2	8	55	25,700
Y1S-3	10	41	23,700
Y1S-4	11	38	25,400
Y1S-5	12	27	17,800
Y1S-6	12	21	22,300
Y1S-7	11	21	12,700
Y1S-8	10	25	22,900
Y1S-9	12	20	21,300
Y1S-10	12	30	23,100
Y1S-11	12	24	15,100
Y1S-12	12	21	11,800
Y1S-13	12	23.7	20,500
BIO-1	3	3	7,350
BIO-2	3	NR	18,800

NOTES:

mg/kg	Milligrams per kilogram
ppm	Parts per million

Table 3
Summary of Screening TPHC Concentrations
IMTT Bayonne - Yard 6 Stockpiles
(Stockpile C - December, 2002)

Sample Location	Sample Depth or Total Depth of Boring (Y1S and BIO samples) (In feet)	TPHC Concentration (In mg/kg)
Y-6-SEW-1	4' - 7'	4,190
Y-6-SEW-2	4' - 7'	6,330
Y-6-SEW-3	4' - 7'	25,000
Y-6-SEW-4	4' - 7'	7,240
Y-6-SEW-5	4' - 7'	7,830

NOTES:

mg/kg	Millgrams per kilogram
ppm	Parts per million

TABLE 4

Detectable TCL VOCs, SVOCs, Petroleum Hydrocarbons, Cyanide and TAL Metals Concentrations
Geoprobe® Soil Boring Soil Samples
IMTT Bayonne - Yard 6 Stockpile
(Stockpile C - January 2003)

Sample ID	Y6-SEW-3B (4ft - 7ft)		Y6-SEW-5B (4ft - 7ft)		NJDEP	NJDEP	NJDEP
Sampling Date	01/07/03		01/07/03		NRDCSCC	RDCSCC	IGWSCC
Depth Interval (In Feet)	0-4		0-4				
Laboratory ID	23010259-001		23010259-002				
Target Compound List							
Volatile Organic Compounds							
(In ug/kg)							
Benzene	322		970		13,000	3,000	1,000
Toluene	276	J	848		1,000,000	1,000,000	500,000
Ethylbenzene	424		611		1,000,000	1,000,000	100,000
Xylene (total)	742		1,118		1,000,000	410,000	67,000
Total VOCs TICs	37,020		116,260				
Total VOCs	38,784		119,807		1,000,000	1,000,000	1,000,000
Target Compound List							
Semi-Volatile Organic Compounds							
(In ug/kg)							
Naphthalene	1,190		1,140	D	4,200,000	230,000	100,000
2-Methylnaphthalene	1,640		1,680	D			
Acenaphthene	2,010		1,080	D	10,000,000	3,400,000	100,000
Fluorene	1,580		1,200	D	10,000,000	2,300,000	100,000
Phenanthrene	2,420		2,670	D			
Anthracene			686	D	10,000,000	10,000,000	100,000
Flouranthene	1,100		1,380	D	10,000,000	2,300,000	100,000
Pyrene	1,030		1,240	D	10,000,000	1,700,000	100,000
Benzo[a]anthracene	522		583	D	4,000	900	500,000
Chrysene	440		578	D	40,000	9,000	500,000
bis(2-Ethylhexyl)phthalate	173	B	332	BD	210,000	49,000	100,000
Benzo[b]fluoranthene	606		592	D	4,000	900	50,000
Benzo[k]fluoranthene	277		246	D	4,000	900	50,000
Benzo[a]pyrene	395		471	D	660	660	100,000
Indeno(1,2,3-cd)pyrene	87		180	D	4,000	900	50,000
Benzo[g,h,i]perylene	87		180	D			
Total SVOCs TICs	14,899		82,050				
Total SVOCs	28,456		96,288				

TABLE 4
Detectable TCL VOCs, SVOCs, Petroleum Hydrocarbons, Cyanide and TAL Metals Concentrations
Geoprobe® Soil Boring Soil Samples
IMTT Bayonne - Yard 6 Stockpile
(Stockpile C - January 2003)

Sample ID Sampling Date Depth Interval (In Feet) Laboratory ID	Y6-SEW-3B (4ft - 7ft) 01/07/03 0-4 23010259-001	Y6-SEW-5B (4ft - 7ft) 01/07/03 0-4 23010259-002	NJDEP NRDCSCC	NJDEP RDCSCC	NJDEP IGWSCC
Petroleum Hydrocarbons **USEPA Method QAM-025** **(In mg/kg)**	1,010	1,380			
Total Organic Contaminants **(In mg/kg)**	1,077	1,596	10,000 *	10,000 *	10,000 *
Target Analyte Metals **(In mg/kg)**					
Aluminum	8,080	8,060			
Antimony		1.21	340	14	
Arsenic	8.65	11.1	20	20	
Barium	321	97.9	47,000	700	
Calcium	15,600	14,100			
Chromium	21.5	36.7	6,100 **	240 **	
Cobalt	8.3	9.81			
Copper	38.5	53	600	600	
Iron	18,300	19,000			
Lead	65	66.2	600	400	
Magnesium	8,070	6,300			
Manganese	895	467			
Mercury	0.216	0.064	270	14	
Nickel	20.9	26.1	2,400	250	
Potassium	1,170	1,180			
Selenium	3.65	2.45	3,100	63	
Sodium	462	574			
Vanadium	44.8	54.1	7,100	370	
Zinc	310	196	1,500	1,500	

NOTES:

ug/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
blank	Not detected above limits of methodology
B	Indicatres compound detected in method blank
J	Indicates concentration is estimated below the limits of the methodology
D	Indicates sample diluted
RDC	NJDEP Residential Direct Contact Soil Cleanup Criteria (N.J.A.C. 7:26D Last Revised 5/12/99)
NRDC	NJDEP Non-Residential Direct Contact Soil Cleanup Criteria (N.J.A.C. 7:26D Last Revised 5/12/99)
IGWSCC	NJDEP Impact to Ground Water Soil Cleanup Criteria (N.J.A.C. 7:26D Last Revised 5/12/99)
TICs	Tentatively Identified Compounds

TABLE 5
Detectable TCLP VOCs, SVOCs, Metals Concentrations and RCRA Characteristics
Geoprobe® Soil Boring Soil Samples
IMTT Bayonne - Yard 6 Stockpile
(Stockpile C - January 2003)

Sample ID Sampling Date Depth Interval (In Feet) Laboratory ID	Y6-SEW-3B (4ft - 7ft) 01/07/03 0-4 23010259-001	Y6-SEW-5B (4ft - 7ft) 01/07/03 0-4 23010259-002	Hazardous Waste Levels
TCLP **Volatile Organic Compounds** **(In ug/l)**			
Benzene	1.4	0.9	500
TCLP Metals **(In mg/l)**			
Arsenic	0.04		5
Barium	0.83	0.97	100
Lead	0.12	0.14	5
Selenium	0.14	0.14	1
RCRA Characteristics			
Corrosivity (In pH units)	7.9	8.2	≤ 2 and ≥ 12.5 pH
Ignitability (In °C)	>60	>60	$\leq 140°$ F
Reactivity - cyanide (In mg/kg)	<0.29	<0.29	250
Reactivity - sulfide (In mg/kg)	<2.9	<2.9	500

NOTES:

ug/l	Micrograms per liter
mg/l	Milligrams per liter
blank	Not detected above limits of methodology
J	Indicates concentration estimated below the limits of the methodology

TABLE 6
Detectable TCLP VOCs, SVOCs, Metals Concentrations and RCRA Characteristics
Geoprobe® Soil Boring Soil Samples
IMTT Bayonne - Yard 1 Stockpiles
(Stockpiles A and B - December 2002)

Sample ID	RB-1	RB-2	RB-3	RB-4	RB-5	RB-6	RB-7	RB-8	Hazardous
Sampling Date	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	Waste
Depth Interval (In Feet)	0-4	4-8	8-12	8-12	8-12	8-12	8-12	8-12	Levels
Laboratory ID	22120235-001	22120235-002	22120235-003	22120235-004	22120235-005	22120235-006	22120235-007	22120235-008	
TCLP Volatile Organic Compounds (In ug/l)									
Benzene	0.81	0.93	6.4	5.6	0.77	0.92	1.2	0.86	500
TCLP Semi-Volatile Organic Compounds (In ug/l)									
2-Methylphenol			6.1 J						
TCLP Metals (In mg/l)									
Barium	0.73	0.75	0.42	0.59	0.66	0.61	0.56	0.74	100
Cadmium	0.01								1
Lead	3.94	0.96	9.06	0.61	0.46	0.18	0.52	6.11	5
RCRA Characteristics									
Corrosivity (In pH units)	8.7	7.9	8.5	8	8	7.2	7.8	7.2	≤ 2 and ≥ 12.5 pH
Ignitability (In °C)	>60	>60	>60	>60	>60	>60	>60	>60	≤ 140° F
Reactivity - cyanide (In mg/kg)	<0.29	<0.29	<0.27	<0.33	<0.27	<0.27	<0.28	<0.27	250
Reactivity - sulfide (In mg/kg)	<2.9	<2.9	<2.7	<3.3	<2.7	<2.7	<2.8	<2.7	500

NOTES:

ug/l	Micrograms per liter
mg/l	Milligrams per liter
blank	Not detected above limits of methodology
J	Indicates concentration estimated below the limits of the methodology
32.6	Concentration or parameter exceeds Hazardous Waste Level

TABLE 7

Detectable TCL VOCs, SVOCs, Petroleum Hydrocarbons, Cyanide and TAL Metals Concentrations
Geoprobe® Soil Boring Soil Samples
IMTT Bayonne - Yard 1 Stockpiles
(Stockpiles A and B - December 2002)

Sample ID	RB-1	RB-2	RB-3	RB-4	RB-5	RB-6	RB-7	RB-8	NJDEP	NJDEP	NJDEP
Sampling Date	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	NRDCSCC	RDCSCC	IGWSCC
Depth Interval (In Feet)	0-4	4-8	8-12	8-12	8-12	8-12	8-12	8-12			
Laboratory ID	22120235-001	22120235-002	22120235-003	22120235-004	22120235-005	22120235-006	22120235-007	22120235-008			
Target Compound List											
Volatile Organic Compounds											
(In ug/kg)											
Methyl tert-Butyl Ether						170 J	198 J				3,100
Benzene	459 J	88 J	608	*1,390*	312	82 J	331		13,000	3,000	1,000
Toluene	662	219 J	2,280	3,970	585	173 J	280	82 J	1,000,000	1,000,000	500,000
Ethylbenzene	2,280	613	1,850	5,590	366	1,440	261	96 J	1,000,000	1,000,000	100,000
Xylene (total)	5,090	2,629	10,730	20,580	1,941	1,831	1,415	306 J	1,000,000	410,000	67,000
Total VOCs TICs	115,430	7,992	66,040	109,500	43,450	57,380	19,350	17,140			
Total VOCs	123,921	11,541	81,508	141,030	46,654	61,076	21,835	17,624	1,000,000	1,000,000	1,000,000
Target Compound List											
Semi-Volatile Organic Compounds											
(In ug/kg)											
Naphthalene		913 D	2,030	771 D	238 JD	4,620 D		5,980 D	4,200,000	230,000	100,000
2-Methylnaphthalene	931 D	3,030 D		8,750 D		30,400 D	4,330 D	33,800 D			
Acenaphthylene	401 D					644 D					
Acenaphthene	567 D	832 D	1,010	2,600 D	1,440 D	3,270 D	770 D	3,470 D	10,000,000	3,400,000	100,000
Dibenzofuran						1,090 D					
Fluorene	611 D		765	2,220 D	1,400 D	3,520 D	1,200 D	3,580 D	10,000,000	2,300,000	100,000
Phenanthrene		1,530 D	2,870	7,610 D	4,040 D	11,600 D	1,890 D	12,200 D			
Anthracene			574				583 D		10,000,000	10,000,000	100,000
Flouranthene			362	1,240 D	1,050 D	730 D	593 D	791 D	10,000,000	2,300,000	100,000
Pyrene		5,590 D	1,050	6,290 D	4,390 D	6,800 D		6,800 D	10,000,000	1,700,000	100,000
Benzo[a]anthracene			412	1620 D	1,030 D				4,000	900	500,000
Chrysene		2,530 D	744	3,330 D	1,960 D	1,840 D	791 D	1,920 D	40,000	9,000	500,000
bis(2-Ethylhexyl)phthalate	2,850 D	3,600 D	174	6,690 D	3,380 D		13,200 D	500 JD	210,000	49,000	100,000
Di-n-octylphthalate				800 D							
Benzo[b]fluoranthene					1,180 D	707 D		770 D	4,000	900	50,000
Benzo[k]fluoranthene				1,430 D					4,000	900	50,000
Benzo[a]pyrene		1080 D	335	1450 D	1080	780 D		805 D	660	660	100,000
Total SVOCs TICs	137,120	199,080	56,270	250,830	224,280	620,300	216,910	363,950			
Total SVOCs	142,480	218,185	66,596	295,631	245,448	686,301	240,267	434,566			
Petroleum Hydrocarbons											
USEPA Method QAM-025											
(In mg/kg)	2,070	5,460	690	3,840	3,000	7,600	5,850	6,860			

TABLE 7

Detectable TCL VOCs, SVOCs, Petroleum Hydrocarbons, Cyanide and TAL Metals Concentrations
Geoprobe® Soil Boring Soil Samples
IMTT Bayonne - Yard 1 Stockpiles
(Stockpiles A and B - December 2002)

Sample ID	RB-1	RB-2	RB-3	RB-4	RB-5	RB-6	RB-7	RB-8	NJDEP	NJDEP	NJDEP
Sampling Date	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	12/03/02	NRDCSCC	RDCSCC	IGWSCC
Depth Interval (In Feet)	0-4	4-8	8-12	8-12	8-12	8-12	8-12	8-12			
Laboratory ID	22120235-001	22120235-002	22120235-003	22120235-004	22120235-005	22120235-006	22120235-007	22120235-008			
Total Organic Contaminants (In mg/kg)	2,336	5,690	838	4,277	3,292	8,347	6,112	7,312	10,000 *	10,000 *	10,000 *
Target Analyte Metals (In mg/kg)											
Aluminum	11,900	8,640	9,960	9,520	7,690	7,790	9,980	7,610			
Antimony	6.13	2.27	4.34	2.87	2.22	4.02	3.17		340	14	
Arsenic	16.5	8.4	13.6	15.8	9.76	10.7	9.47	2.02	20	20	
Barium	138	106	111	105	81.9	223	177	53.7	47,000	700	
Beryllium	0.5	0.38	0.29	0.12		0.19		0.1	2	2	
Cadmium	0.36	0.22	0.29	0.35	0.21	0.43	0.34		100	39	
Calcium	7,320	5,260	27,400	7,130	3,630	7,130	10,700	80.7			
Chromium	206	41.3	158	40.1	26.5	78.7	50.3	6.75	6,100 **	240 **	
Cobalt	12.8	8.71	11.1	8.75	8.21	10.2	10.9	2.11			
Copper	173	154	86.4	178	121	203	158	6.63	600	600	
Iron	28,900	20,800	24,000	32,500	22,100	55,100	24,700	17,300			
Lead	310	207	452	185	281	6.26	452	43.3	600	400	
Magnesium	4,320	2,700	7,700	3,300	3,140	3,600	4170	238			
Manganese	302	183	264	180	151	162	155	27.4			
Mercury	0.66	0.55	0.373		0.214	0.04	0.21	0.057	270	14	
Nickel	54	48.5	55.4	54.1	40	63.8	52.3	7.52	2,400	250	
Potassium	1,130	976	1,260	1,140	1,090	958	1,110	399			
Selenium	2.32	2.32	2.4				1.66		3,100	63	
Sodium	360	236	315	436	272	651	454				
Thallium	3.19	2.49	2.59	2.58	2.92	2.98	1.79	2.78	2	2	
Vanadium	56.1	47.6	54.6	53.6	39.1	76.3	62.3	16	7,100	370	
Zinc	312	279	357	202	135	344	278	12.4	1,500	1,500	

NOTES:

ug/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
blank	Not detected above limits of methodology
D	Indicates sample was diluted
J	Indicates compound was detected below the limits of the methodology
RDC	NJDEP Residential Direct Contact Soil Cleanup Criteria (N.J.A.C. 7:26D Last Revised 5/12/99)
NRDC	NJDEP Non-Residential Direct Contact Soil Cleanup Criteria (N.J.A.C. 7:26D Last Revised 5/12/99)
IGWSCC	NJDEP Impact to Ground Water Soil Cleanup Criteria (N.J.A.C. 7:26D Last Revised 5/12/99)

TICs	Tentatively Identified Compounds
32.6	Concentration exceeds Non-RDC Soil Cleanup Criteria
	Concentration exceeds RDC Soil Cleanup Criteria
32.6	Concentration exceeds IGW Soil Cleanup Criteria
*	Health Based criterion for total organic contaminants of 10,000 mg/kg
**	Criteria for hexavalent Chromium - criterion based on inhalation exposure pathway
***	NJDEP Interim Cleaup Criteria

TABLE 8
Summary of TCLP Lead Concentrations
IMTT Bayonne - Yard 1 Stockpiles
(Stockpiles A and B)

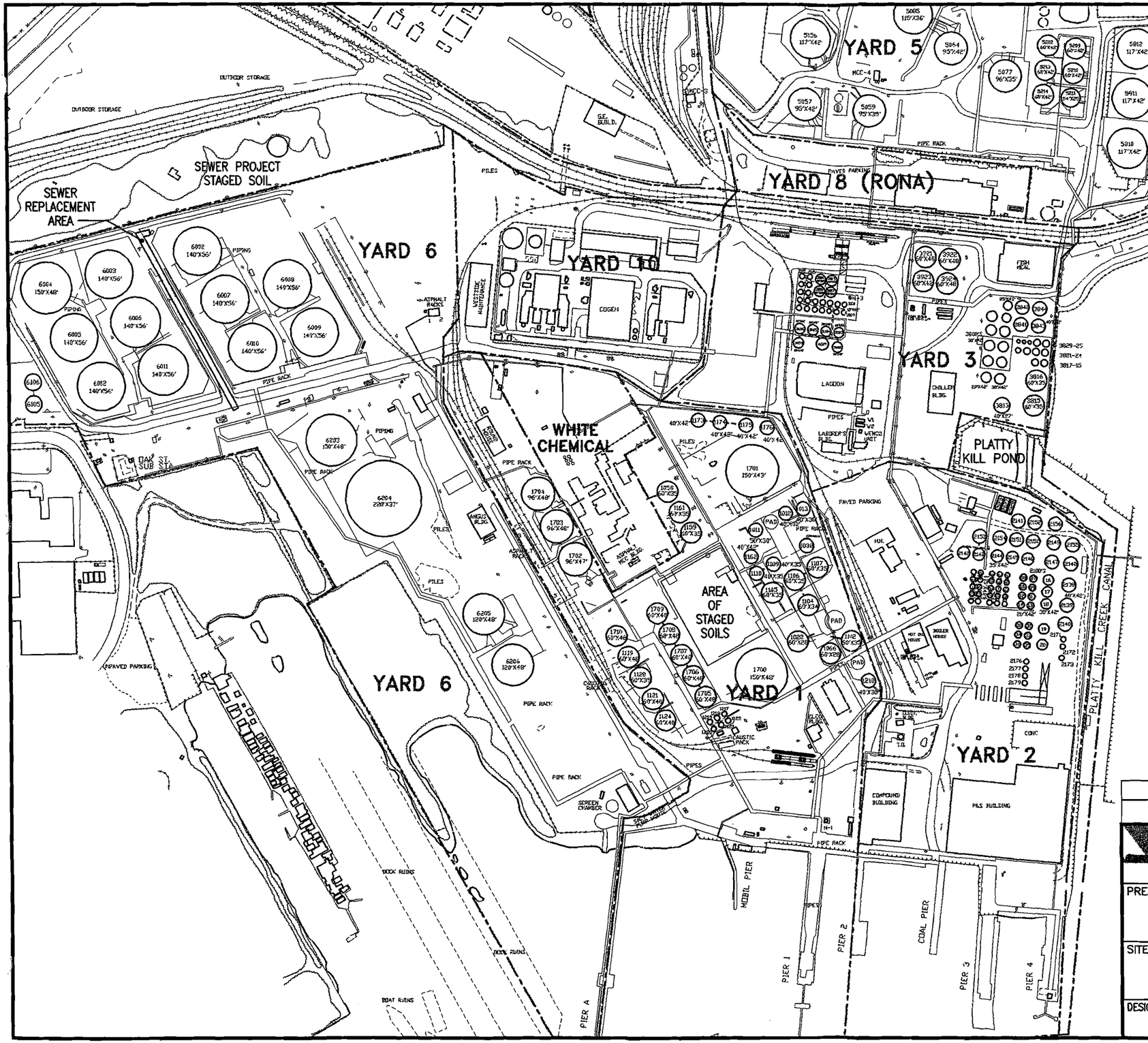
Sample Location	Sample ID	Sample Depth	Sample Date	TCLP Lead Concentration (In mg/l)	Average Concentrations (In mg/l)
	A29727-1		Mar-93	2.6	
RB-1	RB-1	0-4'	Dec-02	3.94	
RB-2	RB-2	4'-8'	Dec-02	0.96	
RB-3	RB-3	8'-12'	Dec-02	9.06	
	RB-3A - Weight Composite	0-4'	Jan-03	0.48	
	RB-3B - Weight Composite	4'-8'	Jan-03	3.17	2.98
	RB-3C - Weight Composite	8'-12'	Jan-03	5.29	
RB-4	RB-4	8'-12'	Dec-02	0.61	
RB-5	RB-5	8'-12'	Dec-02	0.46	
RB-6	RB-6	8'-12'	Dec-02	0.18	
RB-7	RB-7	8'-12'	Dec-02	0.52	
RB-8	RB-8	8'-12'	Dec-02	6.11	
	RB-8A - Weight Composite	0-4'	Jan-03	4.64	
	RB-8A - Weight Composite	4'-8'	Jan-03	3.84	3.39
	RB-8A - Weight Composite	8'-12'	Jan-03	1.71	

Average for all Concentrations = 2.9

Notes:

mg/l milligrams per liter

9.06 Concentration for TCLP lead exceeds Hazardous Waste Level of 5.0 mg/l



LEGEND

- YARD BOUNDARIES
- MONITORING WELLS
- PIPELINES
- TANK LOCATION WITH DIMENSIONS
- RAILROAD TRACKS
- FENCE

0 150 300 600

SCALE: 1"=300'

HIST-STAGED						
CADD DWG. FILE	REV. NO.	REV. DESCRIPTION	DATE	DSN BY	CH'D BY	APP'D BY

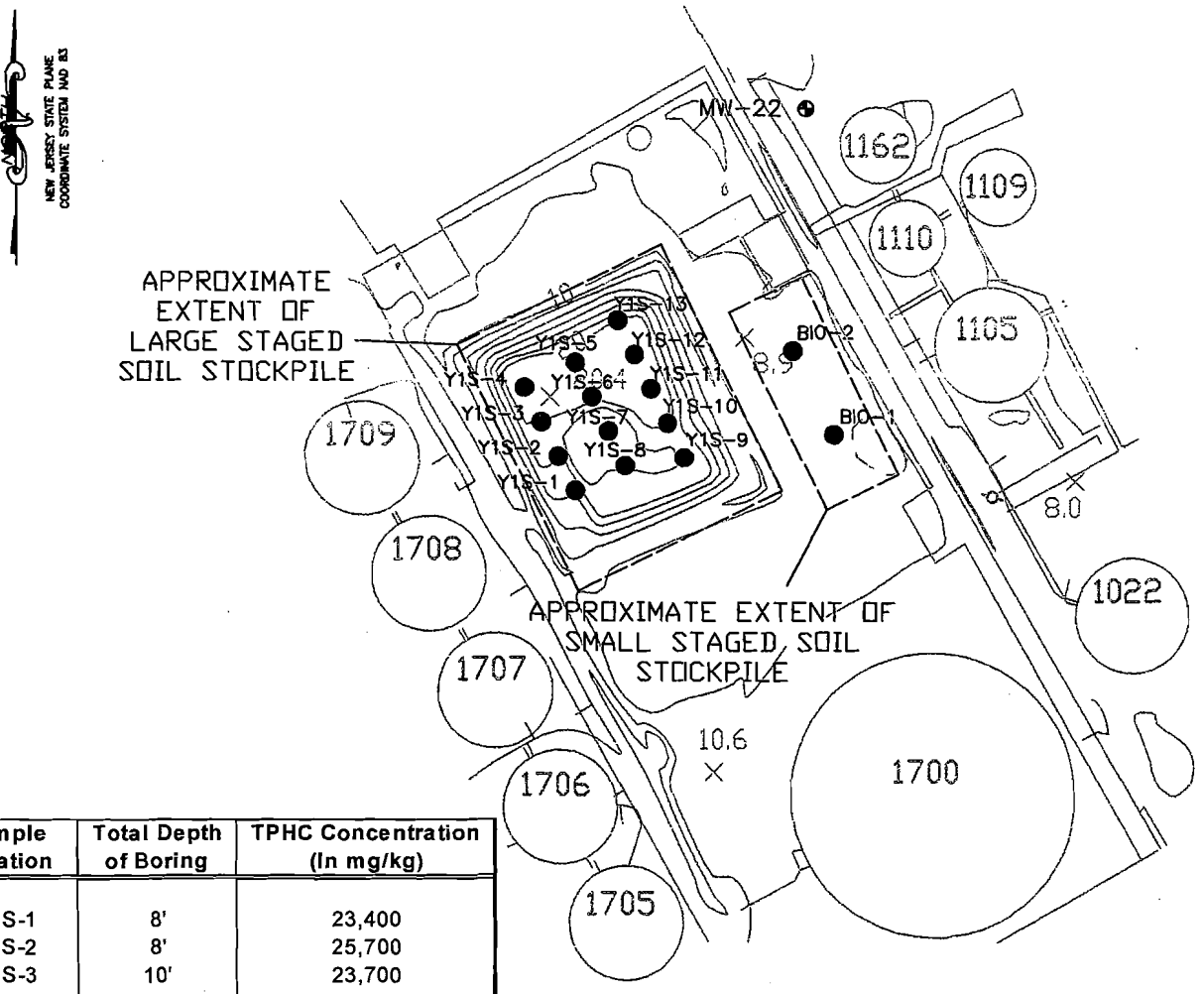
BLUESTONE ENVIRONMENTAL SERVICES, L.L.C.
489 UNION AVENUE, SUITE C
BRIDGEWATER, NEW JERSEY 08807

PREPARED FOR:
BAYONNE INDUSTRIES, INC.
BAYONNE
NEW JERSEY

FIGURE 1

SITE/DESCRIPTION:
STAGED SOILS AND
PLATTY KILL POND LOCATION MAP

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	DRAWING NO.:	REVISION NO.:
–	DAR	DP	AMC	10/02/02	–	0



Sample Location	Total Depth of Boring	TPHC Concentration (In mg/kg)
Y1S-1	8'	23,400
Y1S-2	8'	25,700
Y1S-3	10'	23,700
Y1S-4	11'	25,400
Y1S-5	12'	17,800
Y1S-6	12'	22,300
Y1S-7	11'	12,700
Y1S-8	10'	22,900
Y1S-9	12'	21,300
Y1S-10	12'	23,100
Y1S-11	12'	15,100
Y1S-12	12'	11,800
Y1S-13	12'	20,500
BIO-1	3'	7,350
BIO-2	3'	18,800

LEGEND

Y1S-1 ● SUBSURFACE SOIL SAMPLE LOCATION

0 50 100 200

SCALE: 1"=100'

NOTE: SAMPLE LOCATIONS AND OUTLINE OF STOCKPILES FROM FIELD MEASUREMENTS

CADD DWG. FILE	REV. NO.	REV. DESCRIPTION	DATE	DSN BY	CH'D BY	APP'D BY
StockSampleTable.dwg						

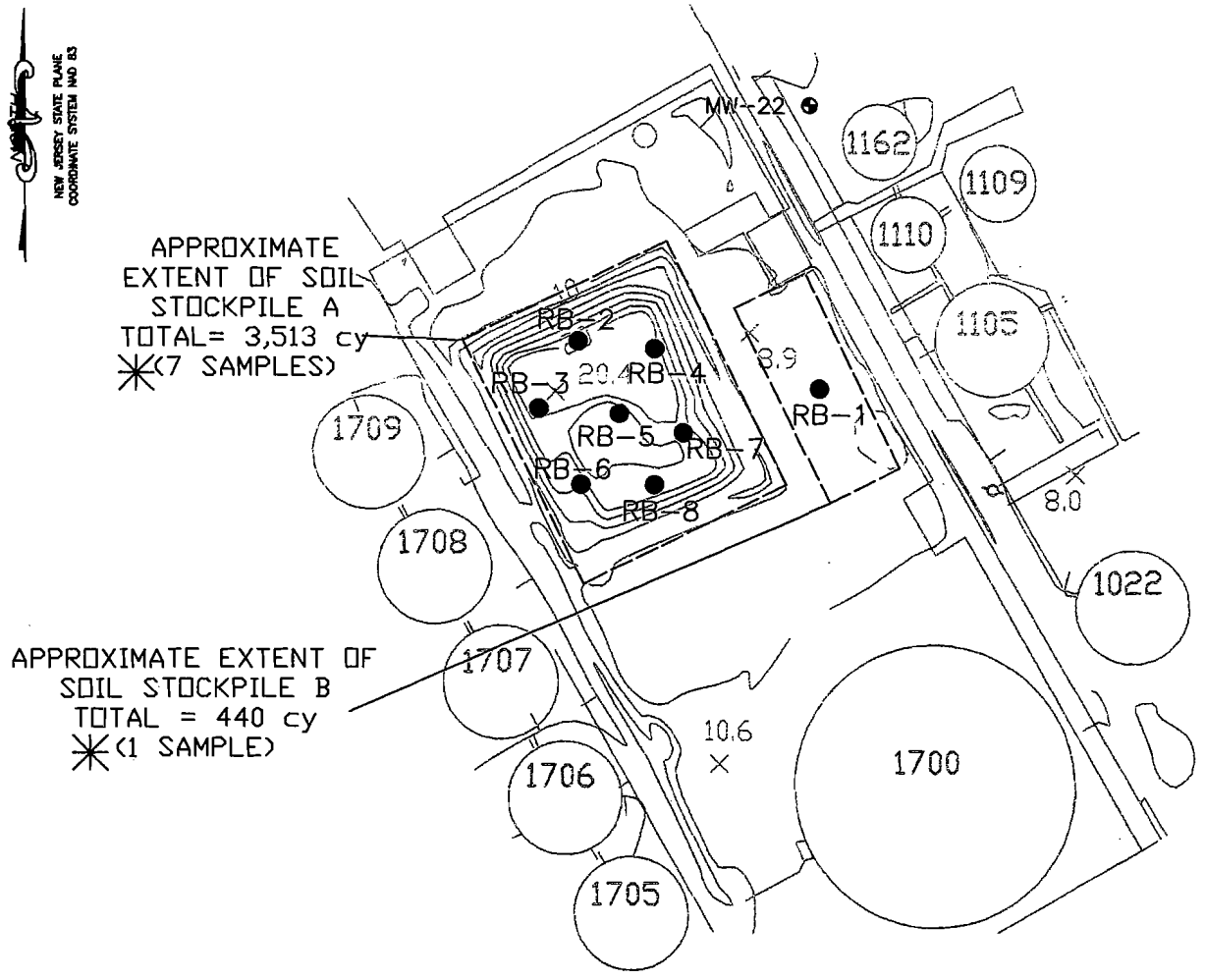
BLUESTONE ENVIRONMENTAL SERVICES, L.L.C.
33 NORTH RIVER STREET
MILLSTONE, NEW JERSEY 08876

PREPARED FOR: B.I. Inc.
BAYONNE INDUSTRIES, INC.
BAYONNE
NEW JERSEY

FIGURE 2

SITE/DESCRIPTION: SOIL BORING/SAMPLE LOCATION MAP
(SEPTEMBER 2002)
YARD I STAGED SOIL STOCKPILES A AND B

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	DRAWING NO.:	REVISION NO.:
	DJP	AC		25SEP02	2 OF 4	



LEGEND

RB-1 ● Subsurface Soil Sample Locations

✳ NJDEP Approval of 1 Sample per 500 cy as per ExxonMobil

0 50 100 200

SCALE: 1"=100'

NOTE: SAMPLE LOCATIONS AND OUTLINE OF STOCKPILES FROM FIELD MEASUREMENTS

CADD DWG. FILE	REV. NO.	REV. DESCRIPTION	DATE	DSN BY	CH'D BY	APP'D BY
StockNewSamples.dwg						

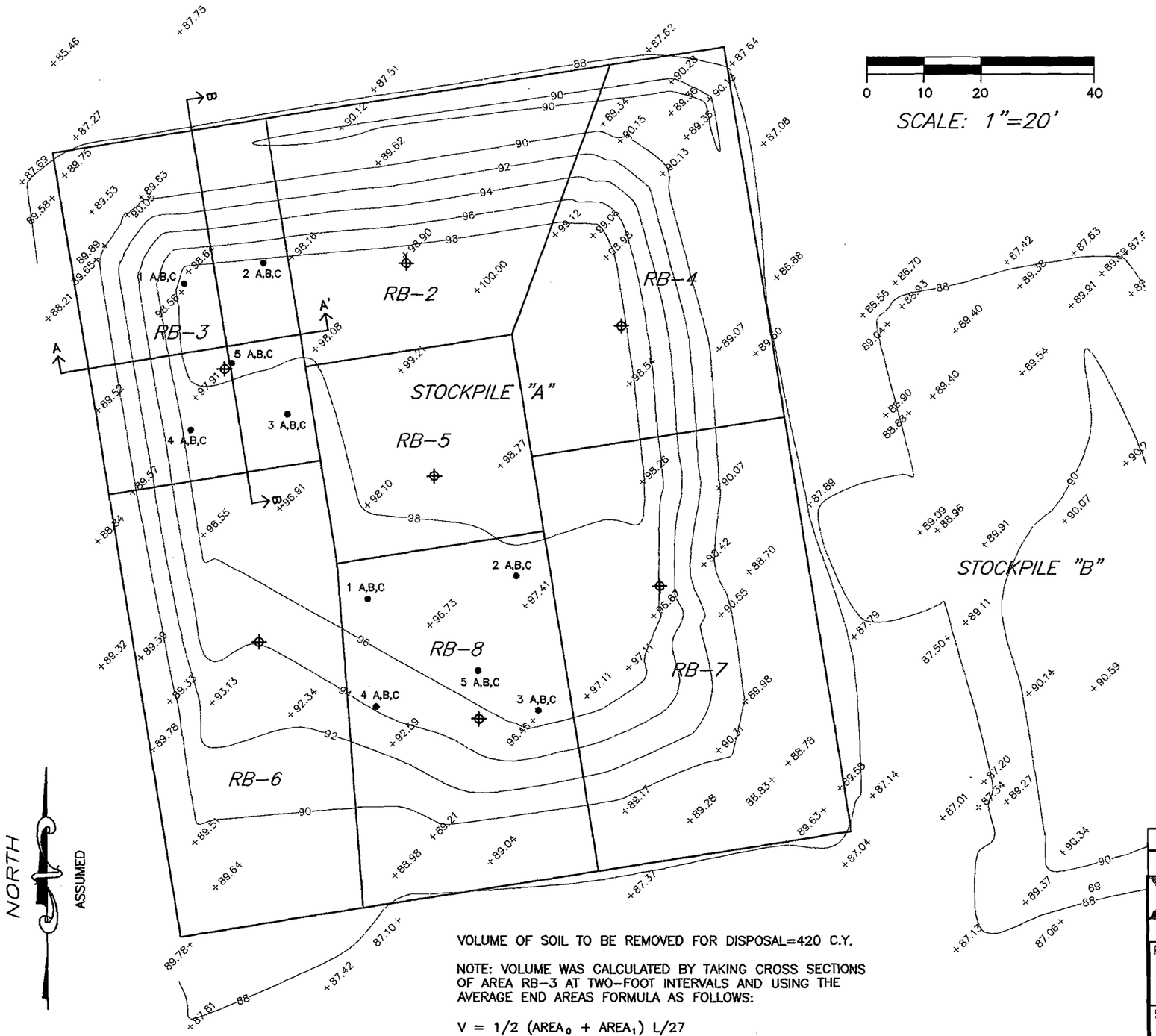
BLUESTONE ENVIRONMENTAL SERVICES, L.L.C.
489 UNION AVENUE, SUITE C
BRIDGEWATER, NEWJERSEY 08807

PREPARED FOR: B.I. Inc. BAYONNE INDUSTRIES, INC. BAYONNE NEW JERSEY

FIGURE 3

SITE/DESCRIPTION: SOIL BORING/SAMPLE LOCATION MAP (DECEMBER 2002) YARD I STAGED SOIL STOCKPILES A AND B

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	DRAWING NO.:	REVISION NO.:
	DJP	AC		06DEC02	3 OF 4	



0 10 20 40

SCALE: 1"=20'

NORTH

ASSUMED

VERTICAL DATUM IS ASSUMED

VOLUME OF SOIL TO BE REMOVED FOR DISPOSAL=420 C.Y.

NOTE: VOLUME WAS CALCULATED BY TAKING CROSS SECTIONS OF AREA RB–3 AT TWO–FOOT INTERVALS AND USING THE AVERAGE END AREAS FORMULA AS FOLLOWS:

$V = 1/2\ (AREA_0 + AREA_1)\ L/27$

WHERE $AREA_0$ AND $AREA_1$ ARE THE AREAS OF THE CROSS SECTIONS, AND L IS THE DISTANCE BETWEEN THOSE CROSS SECTIONS.

TCLP LEAD SAMPLING SUMMARY
IMTT BAYONNE – YARD 1 STOCKPILES

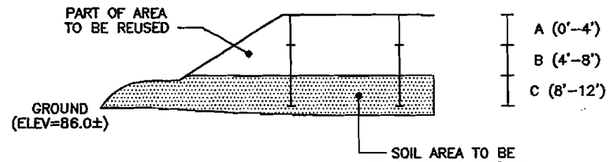
SAMPLE LOCATION	SAMPLE ID	SAMPLE DEPTH	SAMPLE DATE	TCLP LEAD CONCENTRATION (IN mg/l)	AVERAGE CONCENTRATIONS (IN mg/l)
	A29727–1		MAR–93	2.6	
RB–1	RB–1	0–4'	DEC–02	3.84	
RB–2	RB–2	4'–8'	DEC–02	0.96	
RB–3	RB–3	8'–12'	DEC–02	*9.06*	
	RB–3A – WEIGHT COMPOSITE	0–4'	JAN–03	0.48	
	RB–3B – WEIGHT COMPOSITE	4'–8'	JAN–03	3.17	2.98
	RB–3C – WEIGHT COMPOSITE	8'–12'	JAN–03	*5.29*	
RB–4	RB–4	8'–12'	DEC–02	0.61	
RB–5	RB–5	8'–12'	DEC–02	0.46	
RB–6	RB–6	8'–12'	DEC–02	0.18	
RB–7	RB–7	8'–12'	DEC–02	0.52	
RB–8	RB–8	8'–12'	DEC–02	*6.11*	
	RB–8A – WEIGHT COMPOSITE	0–4'	JAN–03	4.64	
	RB–8A – WEIGHT COMPOSITE	4'–8'	JAN–03	3.84	3.39
	RB–8A – WEIGHT COMPOSITE	8'–12'	JAN–03	1.71	
			AVERAGE FOR ALL CONCENTRATIONS =		2.9

NOTES:

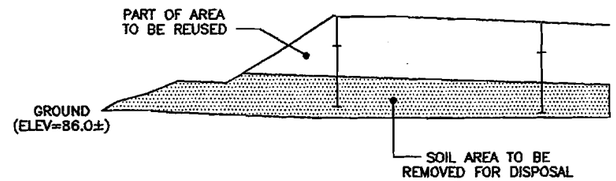
mg/l MILLIGRAMS PER LITER

9.06 CONCENTRATION FOR TCLP LEAD EXCEEDS HAZARDOUS WASTE LEVEL OF 5.0 mg/l

SECTION A–A'



SECTION B–B'



STOCKPILE						
CADD DWG. FILE	REV. NO.	REV. DESCRIPTION	DATE	DSN BY	CH'D BY	APP'D BY

BLUESTONE ENVIRONMENTAL SERVICES L.L.C.

BLUESTONE ENVIRONMENTAL SERVICES, L.L.C.
489 UNION AVENUE, SUITE C
BRIDGEWATER, NEW JERSEY 08807

PREPARED FOR: BAYONNE INDUSTRIES, INC.
BAYONNE
NEW JERSEY

FIGURE 4

SITE/DESCRIPTION: STOCKPILE AREAS
BAYONNE INDUSTRIES
BAYONNE, NEW JERSEY

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	DRAWING NO.:	REVISION NO.:
–	DAR	DP	AMC	01/27/03	–	0

APPENDIX A

COMPLETE LABORATORY ANALYSIS

(Separate Attachment)

APPENDIX B

HUDSON COUNTY CHROMATE STUDY

James E. McGreevey
Governor

State of New Jersey
Department of Environmental Protection
Site Remediation Program
Bureau of Environmental Measurements
PO Box 407
Trenton, New Jersey 08625-0407
(609) 584-4280

Bradley M. Cam
Commissior

TO: KATHY KUNZE, Technical Coordinator
Bureau of Environmental Evaluation & Risk Assessment

THROUGH: JERRY R. SCHOENLEBER, HSMS I
Environmental Measurements Section

FROM: JOHN EVENSON, HSMS II
Environmental Measurements Section

SUBJECT: **IMTT - SITE 139**
HUDSON COUNTY CHROMATE STUDY
Sample Dates: November 1, 2, 7, 8, 9, 2001

At your request, the Environmental Measurements and Site Assessment Section completed a five-day sampling event at the aforementioned site located in Hudson, County, New Jersey. Sampling consisted of collecting randomly spaced, surface samples (0-6 inches) from the nine areas of concern within the IMTT facility grounds. Both "grab" and "pulverized" samples were screened using an XRF unit. A summary of the XRF results was included in the GHR report and was sent to your office on December3, 2001.

Attached are maps indicating sample locations. Please don't hesitate to call if you have any questions.

c: Dave Barskey, BEERA

HUDSON COUNTY CHROMATE STUDY
IMTT - SITE 139, BAYONNE, NJ
NOVEMBER 1, 2, 7, 8 & 9, 2001

SAMPLE LOCATION	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	PARAMETERS
AREA 4A	4ANV1	Non-visible chromium	11/7/01	1142-1144	Total & hexavalent chromium
AREA 4A	4ANV1P	Pulverized non-visible Cr	11/7/01	1146-1148	Total & hexavalent chromium
AREA 4A	4ANV2	Non-visible chromium	11/7/01	1155-1157	Total & hexavalent chromium
AREA 4A	4ANV2P	Pulverized non-visible Cr	11/7/01	1158-1159	Total & hexavalent chromium
AREA 4A	4ANV3	Non-visible chromium	11/7/01	1204-1206	Total & hexavalent chromium
AREA 4A	4ANV3P	Pulverized non-visible Cr	11/7/01	1207-1209	Total & hexavalent chromium
AREA 4A	4ANV4	Non-visible chromium	11/7/01	1213-1216	Total & hexavalent chromium
AREA 4A	4ANV4 (DUP-4)	Non-visible chromium	11/7/01	N/A	Total & hexavalent chromium
AREA 4A	4ANV4P	Pulverized non-visible Cr	11/7/01	1217-1219	Total & hexavalent chromium
AREA 4A	4ANV5	Non-visible chromium	11/7/01	1227-1229	Total & hexavalent chromium
AREA 4A	4ANV5P	Pulverized non-visible Cr	11/7/01	1232-1234	Total & hexavalent chromium
AREA 4A	4ANV6	Non-visible chromium	11/7/01	1237-1239	Total & hexavalent chromium
AREA 4A	4ANV6P	Pulverized non-visible Cr	11/7/01	1240-1242	Total & hexavalent chromium
AREA 4A	4ANV7	Non-visible chromium	11/7/01	1250-1251	Total & hexavalent chromium
AREA 4A	4ANV7P	Pulverized non-visible Cr	11/7/01	1252-1253	Total & hexavalent chromium
AREA 4A	4ANV8	Non-visible chromium	11/7/01	1300-1303	Total & hexavalent chromium
AREA 4A	4ANV8P	Pulverized non-visible Cr	11/7/01	1304-1305	Total & hexavalent chromium
AREA 4A	4ANV9	Non-visible chromium	11/7/01	1309-1310	Total & hexavalent chromium
AREA 4A	4ANV9P	Pulverized non-visible Cr	11/7/01	1312-1313	Total & hexavalent chromium
AREA 4A	4ANV10	Non-visible chromium	11/7/01	1318-1320	Total & hexavalent chromium
AREA 4A	4ANV10P	Pulverized non-visible Cr	11/7/01	1322-1324	Total & hexavalent chromium
AREA 5	5V1	Visible chromium	11/7/01	1350-1352	Total & hexavalent chromium
AREA 5	5V1P	Pulverized visible chrome	11/7/01	1354-1356	Total & hexavalent chromium
AREA 5	5V2	Visible chromium	11/7/01	1403-1406	Total & hexavalent chromium
AREA 5	5V2 (DUP-5)	Visible chromium	11/7/01	N/A	Total & hexavalent chromium
AREA 5	5V2P	Pulverized visible chrome	11/7/01	1407-1409	Total & hexavalent chromium
AREA 5	5V3	Visible chromium	11/7/01	1418-1419	Total & hexavalent chromium
AREA 5	5V3P	Pulverized visible chrome	11/7/01	1420-1421	Total & hexavalent chromium
AREA 5A	5AV1	Visible chromium	11/7/01	1430-1434	Total & hexavalent chromium
AREA 5A	5AV1P	Pulverized visible chrome	11/7/01	1436-1440	Total & hexavalent chromium
AREA 5A	5AV2	Visible chromium	11/7/01	1448-1450	Total & hexavalent chromium
AREA 5A	5AV2P	Pulverized visible chrome	11/7/01	1454-1455	Total & hexavalent chromium
AREA 5A	5ANV3	Non-visible chromium	11/7/01	1500-1502	Total & hexavalent chromium
AREA 5A	5ANV3P	Pulverized non-visible Cr	11/7/01	1502-1504	Total & hexavalent chromium
AREA 5A	5ANV4	Non-visible chromium	11/8/01	1015-1018	Total & hexavalent chromium
AREA 5A	5ANV4P	Pulverized non-visible Cr	11/8/01	1020-1023	Total & hexavalent chromium
AREA 5A	5ANV5	Non-visible chromium	11/8/01	1027-1028	Total & hexavalent chromium
AREA 5A	5ANV5P	Pulverized non-visible Cr	11/8/01	1029-1030	Total & hexavalent chromium
AREA 5A	5ANV6	Non-visible chromium	11/8/01	1034-1035	Total & hexavalent chromium
AREA 5A	5ANV6P	Pulverized non-visible Cr	11/8/01	1037-1038	Total & hexavalent chromium
AREA 5A	5ANV7	Non-visible chromium	11/8/01	1044-1045	Total & hexavalent chromium
AREA 5A	5ANV7P	Pulverized non-visible Cr	11/8/01	1046-1047	Total & hexavalent chromium

HUDSON COUNTY CHROMATE STUDY
IMTT - SITE 139, BAYONNE, NJ
NOVEMBER 1, 2, 7, 8 & 9, 2001

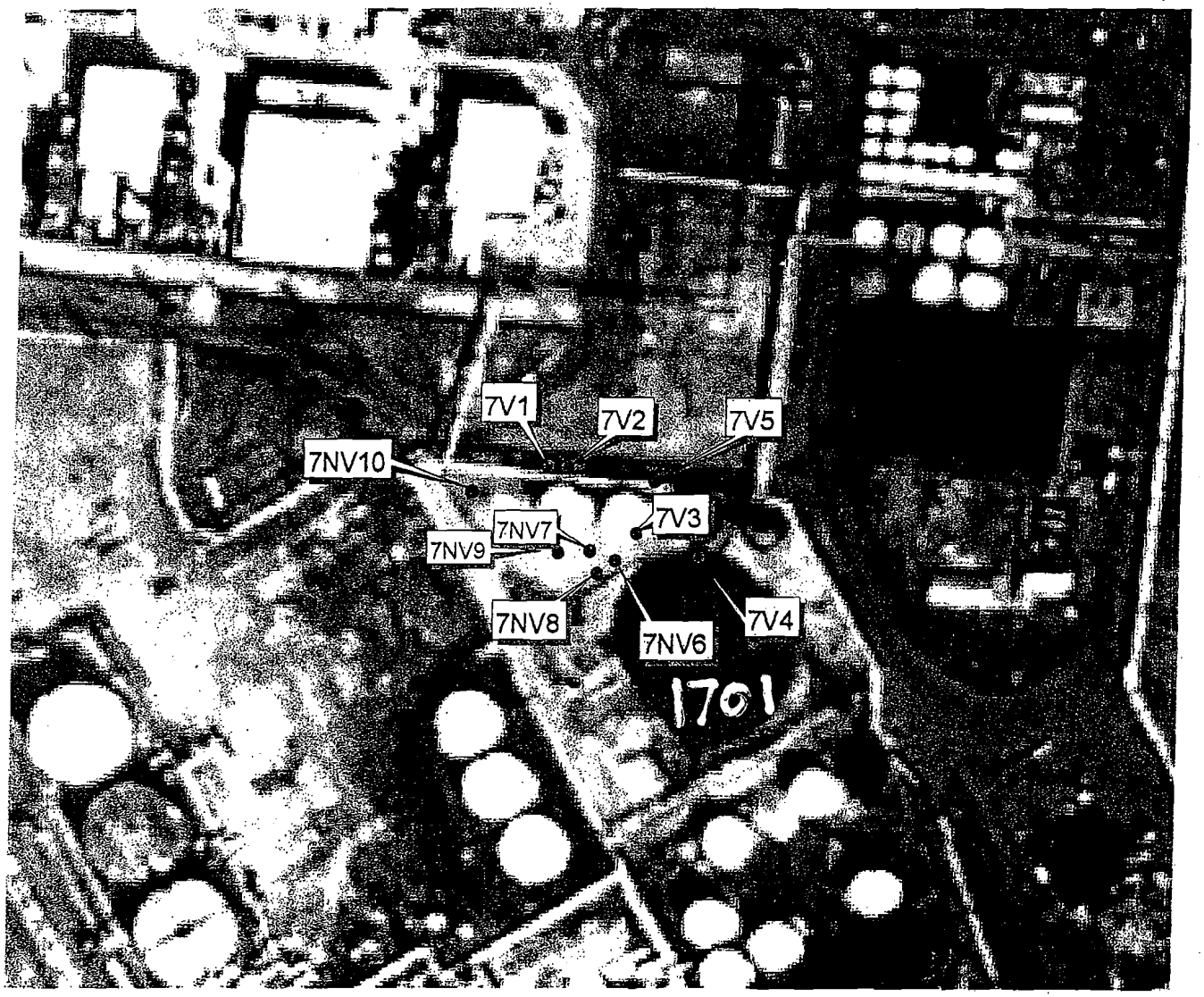
SAMPLE LOCATION	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	PARAMETERS
AREA 6	6V1	Visible chromium	11/9/01	1036-1039	Total & hexavalent chromium
AREA 6	6V1P	Pulverized visible chrome	11/9/01	1041-1042	Total & hexavalent chromium
AREA 6	6V2	Visible chromium	11/9/01	1054-1057	Total & hexavalent chromium
AREA 6	6V2 (DUP-7)	Visible chromium	11/9/01	N/A	Total & hexavalent chromium
AREA 6	6V2P	Pulverized visible chrome	11/9/01	1101-1102	Total & hexavalent chromium
AREA 6	6V3	Visible chromium	11/9/01	1113-1114	Total & hexavalent chromium
AREA 6	6V3P	Pulverized visible chrome	11/9/01	1118-1119	Total & hexavalent chromium
AREA 6	6V4	Visible chromium	11/9/01	1129-1131	Total & hexavalent chromium
AREA 6	6V4P	Pulverized visible chrome	11/9/01	1133-1135	Total & hexavalent chromium
AREA 6	6V5	Visible chromium	11/9/01	1152-1154	Total & hexavalent chromium
AREA 6	6V5 (DUP-8)	Visible chromium	11/9/01	N/A	Total & hexavalent chromium
AREA 6	6V5P	Pulverized visible chrome	11/9/01	1156-1157	Total & hexavalent chromium
AREA 6A	6AM1	Mixed chromium sample	11/8/01	1350-1352	Total & hexavalent chromium
AREA 6A	6AM1P	Pulverized mixed sample	11/8/01	1353-1355	Total & hexavalent chromium
AREA 6A	6AM2	Mixed chromium sample	11/8/01	1405-1406	Total & hexavalent chromium
AREA 6A	6AM2P	Pulverized mixed sample	11/8/01	1408-1409	Total & hexavalent chromium
AREA 6A	6AM3	Mixed chromium sample	11/8/01	1419-1421	Total & hexavalent chromium
AREA 6A	6AM3P	Pulverized mixed sample	11/8/01	1422-1423	Total & hexavalent chromium
AREA 6A	6AM4	Mixed chromium sample	11/8/01	1435-1438	Total & hexavalent chromium
AREA 6A	6AM4P	Pulverized mixed sample	11/8/01	1442-1443	Total & hexavalent chromium
AREA 6A	6AM5	Mixed chromium sample	11/8/01	1450-1451	Total & hexavalent chromium
AREA 6A	6AM5P	Pulverized mixed sample	11/8/01	1453-1454	Total & hexavalent chromium
AREA 7	7V1	Visible chromium sample	11/8/01	1108-1110	Total & hexavalent chromium
AREA 7	7V1P	Pulverized visible chrome	11/8/01	1111-1113	Total & hexavalent chromium
AREA 7	7V2	Visible chromium sample	11/8/01	1125-1127	Total & hexavalent chromium
AREA 7	7V2P	Pulverized visible chrome	11/8/01	1129-1130	Total & hexavalent chromium
AREA 7	7V3	Visible chromium sample	11/8/01	1142-1143	Total & hexavalent chromium
AREA 7	7V3P	Pulverized visible chrome	11/8/01	1145-1146	Total & hexavalent chromium
AREA 7	7V4	Visible chromium sample	11/8/01	1156-1158	Total & hexavalent chromium
AREA 7	7V4P	Pulverized visible chrome	11/8/01	1201-1203	Total & hexavalent chromium
AREA 7	7V5	Visible chromium sample	11/8/01	1217-1220	Total & hexavalent chromium
AREA 7	7V5 (DUP-6)	Visible chromium sample	11/8/01	N/A	Total & hexavalent chromium
AREA 7	7V5P	Pulverized visible chrome	11/8/01	1223-1225	Total & hexavalent chromium
AREA 7	7NV6	Non-visible chromium	11/8/01	1234-1236	Total & hexavalent chromium
AREA 7	7NV6P	Pulverized non-visible Cr	11/8/01	1238-1239	Total & hexavalent chromium
AREA 7	7NV7	Non-visible chromium	11/8/01	1244-1245	Total & hexavalent chromium
AREA 7	7NV7P	Pulverized non-visible Cr	11/8/01	1247-1248	Total & hexavalent chromium
AREA 7	7NV8	Non-visible chromium	11/8/01	1256-1258	Total & hexavalent chromium
AREA 7	7NV8P	Pulverized non-visible Cr	11/8/01	1259-1300	Total & hexavalent chromium
AREA 7	7NV9	Non-visible chromium	11/8/01	1307-1308	Total & hexavalent chromium
AREA 7	7NV9P	Pulverized non-visible Cr	11/8/01	1311-1312	Total & hexavalent chromium
AREA 7	7NV10	Non-visible chromium	11/8/01	1320-1321	Total & hexavalent chromium
AREA 7	7NV10P	Pulverized non-visible Cr	11/8/01	1322-1323	Total & hexavalent chromium

Area ID	Sample ID	XRF Cr U (ppm)	Log XRF Cr U	Total Cr U (ppm)	Log Total Cr U	Hex. Cr U (ppm)	Log Hex Cr U	Sample ID
2	2NV11	1380	3.14	254	2.40483	6.80	0.83251	2NV11P
	2NV12	1,370	3.14	225	2.35218	5.00	0.69897	2NV12P
	2NV13	896	2.95	248	2.39445	7.00	0.84510	2NV13P
	2NV14	932	2.97	215	2.33244	5.60	0.74819	2NV14P
	2NV15	390	2.59	84	1.92428	3.60	0.55630	2NV15P
	2NV16	1,680	3.23	579	2.76268	5.10	0.70757	2NV16P
	2NV17	732	2.86	300	2.47712	12.00	1.07918	2NV17P
	2NV18	540	2.73	224	2.35025	2.60	0.41497	2NV18P
	2NV18*			226	2.35411	9.20	0.96379	2NV19P
	2NV19	390	2.59	38	1.57978	2.50	0.39794	2NV20P
	2NV20	750	2.88	88	1.94448	2.60	0.41497	2V10P
	2V1	6,280	3.80	810	2.90849	3.50	0.54407	2V1P
	2V10	1,800	3.26	695	2.84198	24.00	1.38021	2V2P
	2V2	2,040	3.31	605	2.78176	17.00	1.23045	2V3P
	2V3	2,490	3.40	850	2.92942	67.00	1.82607	2V4P
	2V4	3,280	3.52	1,460	3.16435	320.00	2.50515	2V5P
	2V5	11,000	4.04	2,550	3.40654	150.00	2.17609	2V6P
	2V6	10,800	4.03	1,650	3.21748	28.00	1.44716	2V7P
	2V7	5,890	3.77	2,100	3.32222	11.00	1.04139	2V8P
	2V8	4,990	3.70	1,690	3.22789	15.00	1.17609	2V9P
	2V9	11,500	4.06	1,920	3.28330	13.00	1.11394	2V9P*
3	3M11	542	2.73	93	1.96848	0.15	-0.82391	3M11P
	3M12	1,090	3.04	126	2.10037	3.80	0.57978	3M12P
	3M13	549	2.74	0	-1.14267	0.15	-0.82391	3M13P
	3M14*	5,610	3.75	1,410	3.14922	2.30	0.36173	3M14P*
	3M14*	3,650	3.56					3M14P*
	3M15	310	2.49	300	2.47712	12.00	1.07918	3M15P
	3M16	9,060	3.96	1,130	3.05308	8.20	0.91381	3M16P
	3M17	2,000	3.30	370	2.56820	0.15	-0.82391	3M17P
	3M18	2,060	3.31	139	2.14301	1.21	0.08279	3M18P
	3M18*			353	2.54777	18.00	1.25527	
	3M19	3,550	3.55	1,230	3.08991	86.00	1.93450	3M19P
	3M20	1,900	3.28	239	2.37840	5.40	0.73239	3M20P
	3V1	4,400	3.64	924	2.96567	0.15	-0.82391	3V1P
	3V10	18,600	4.27	1,540	3.18752	215.00	2.33244	3V10P
	3V2	22,600	4.35	2,060	3.31387	11.00	1.04139	3V2P
	3V3	12,300	4.09	1,270	3.10380	11.00	1.04139	3V3P
	3V4	20,100	4.30	1,290	3.11059	39.00	1.59106	3V4P
	3V5	24,700	4.39	1,530	3.18469	64.00	1.80618	3V5P
	3V6	53,600	4.73	1,070	3.02938	5.70	0.75587	3V6P
	3V7*	1,300	3.11	1,180	3.07188	24.00	1.38021	3V7P*
	3V7*	20,600	4.31					3V7P*
	3V8	12,300	4.09	1,400	3.14613	32.00	1.50515	3V8P
	3V9	7,520	3.88	1,370	3.13672	45.00	1.65321	3V9P

4	4NV1	270	2.43	29	1.46240	0.02	-1.69897	4NV1P
	4NV2	340	2.53	36	1.55630	4.00	0.60206	4NV2P
	4NV2*			96	1.98227	0.02	-1.69897	
	4NV3	270	2.43	21	1.32222	41.00	1.61278	4NV3P
	4NV4	280	2.45	30	1.47712	0.02	-1.69897	4NV4P
	4NV5	270	2.43	75	1.87506	0.02	-1.69897	4NV5P
4A	4ANV1*	255	2.41	35	1.54407	0.03	-1.52288	4ANV1P*
	4ANV1*	240	2.38					4ANV1P*
	4ANV10	284	2.45	113	2.05308	0.13	-0.88606	4ANV10P
	4ANV2	300	2.48	64	1.80618	0.48	-0.31876	4ANV2P
	4ANV3	360	2.56	80	1.90309	0.26	-0.58503	4ANV3P
	4ANV4	509	2.71	59	1.77085	2.10	0.32222	4ANV4P
	4ANV4*			58	1.76343	1.27	0.10380	
	4ANV5	462	2.66	94	1.97313	2.10	0.32222	4ANV5P
	4ANV6	300	2.48	94	1.97313	0.15	-0.82391	4ANV6P
	4ANV7	310	2.49	126	2.10037	0.13	-0.88606	4ANV7P
	4ANV8	330	2.52	131	2.11727	2.40	0.38021	4ANV8P
	4ANV9	310	2.49	148	2.17026	3.00	0.47712	4ANV9P
5	5V1	14,000	4.15	2,360	3.37291	25.00	1.39794	5V1P
	5V2	6,810	3.83	1,000	3	1.29	0.11059	5V2P
	5V2*			873	2.94101	8.80	0.94448	
	5V3	18,500	4.27	2,950	3.46982	49.00	1.69020	5V3P
5A	5ANV3	210	2.32	9	0.95904	0.55	-0.25964	5ANV3P
	5ANV4*	255	2.41	12	1.07188	0.32	-0.49485	5ANV4P*
	5ANV4*	330	2.52					5ANV4P*
	5ANV5	400	2.60	77	1.88705	0.01	-2	5ANV5P
	5ANV6	570	2.76	93	1.96942	2.20	0.34242	5ANV6P
	5ANV7	360	2.56	167	2.22272	0.49	-0.30980	5ANV7P
	5AV1*	7,960	3.90	1,430	3.15534	44.00	1.64345	5AV1P*
	5AV1*	4,650	3.67					5AV1P*
	5AV2	3,740	3.57	1,630	3.21219	77.00	1.88649	5AV2P
6	6V1*	1,690	3.23	295	2.46982	9.70	0.98677	6V1P*
	6V1*	3,360	3.53					6V1P*
	6V2	1,810	3.26	179	2.25285	4.60	0.66276	6V2P
	6V2*			106	2.02531	3.10	0.49136	
	6V3	4,770	3.68	531	2.72509	19.00	1.27875	6V3P
	6V4*	7,530	3.88	912	2.95999	11.00	1.04139	6V4P*
	6V4*	3,130	3.50					6V4P*
	6V5	3,000	3.48	320	2.50515	3.40	0.53148	6V5P
	6V5*	270	2.43	269	2.42975	17.00	1.23045	
6A	6AM1	585	2.77	102	2.00860	4.60	0.66276	6AM1P
	6AM2*	4,360	3.64	626	2.79657	13.00	1.11394	6AM2P*
	6AM2*	370	2.57					6AM2P*
	6AM3	370	2.57	257	2.40993	1.53	0.18469	6AM3P
	6AM4*	8,600	3.93	233	2.36736	19.00	1.27875	6AM4P*
	6AM4*	3,120	3.49					6AM4P*
	6AM5	346	2.54	223	2.34830	6.00	0.77815	6AM5P

7	7NV6*	384	2.58	75	1.87506	1.01	0.00432	7NV6P*
	7NV6*	280	2.45					7NV6P*
	7NV7	345	2.54	27	1.43457	0.62	-0.20761	7NV7P
	7NV8	190	2.28	26	1.42160	0.14	-0.85387	7NV8P
	7NV9*	180	2.26	24	1.37840	1.30	0.11394	7NV9P*
	7NV9*	180	2.26					7NV9P*
	7NV10	270	2.43	24	1.38561	0.74	-0.13077	7NV10P
	7V1*	17,500	4.24	1,320	3.12057	270.00	2.43136	7V1P*
	7V1*	20,400	4.31					7V1P*
	7V2	1,080	3.03	56	1.74507	1.22	0.08636	7V2P
	7V3	7,670	3.88	1,640	3.21484	1.55	0.19033	7V3P
	7V4*	14,600	4.16	931	2.96895	1.13	0.05308	7V4P*
	7V4*	35,700	4.55					7V4P*
	7V5	27,500	4.44	886	2.94743	0.71	-0.14874	7V5P
	7V5*			966	2.98498	5.10	0.70757	

IMTT Site 139
Area 7



0.06 0 0.06 0.12 Miles

NJ DEP
Site Remediation
Program

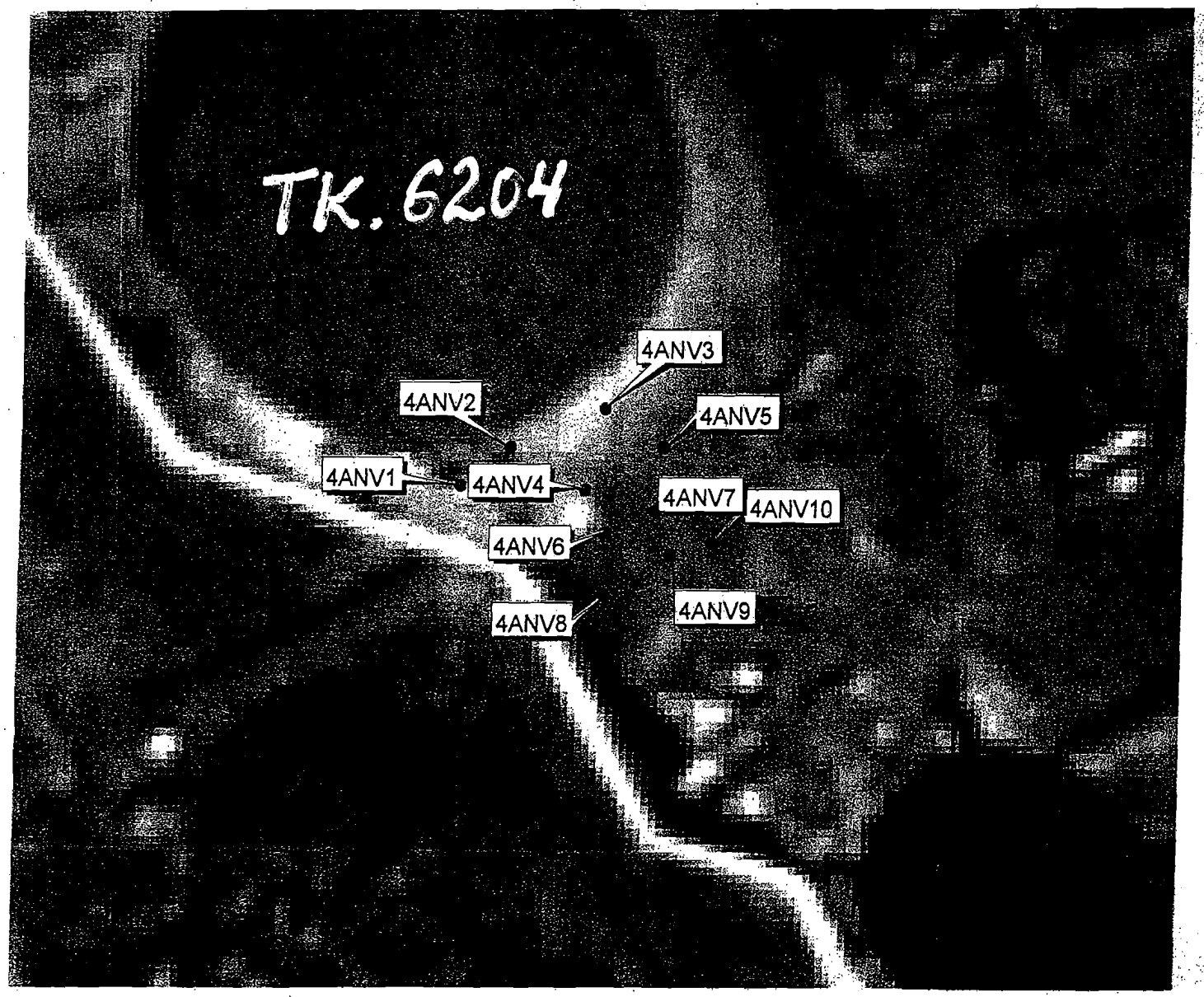
Environmental Measurements
Section

Chromium Sample
Locations

N
W E
S

map prepared
May 16, 2002

IMTT Site 139
Area 4A



0.03 0 0.03 0.06 Miles

NJDEP
Site Remediation
Program

Environmental Measurements
Section

Chromium Sample
Locations

N
W E
S

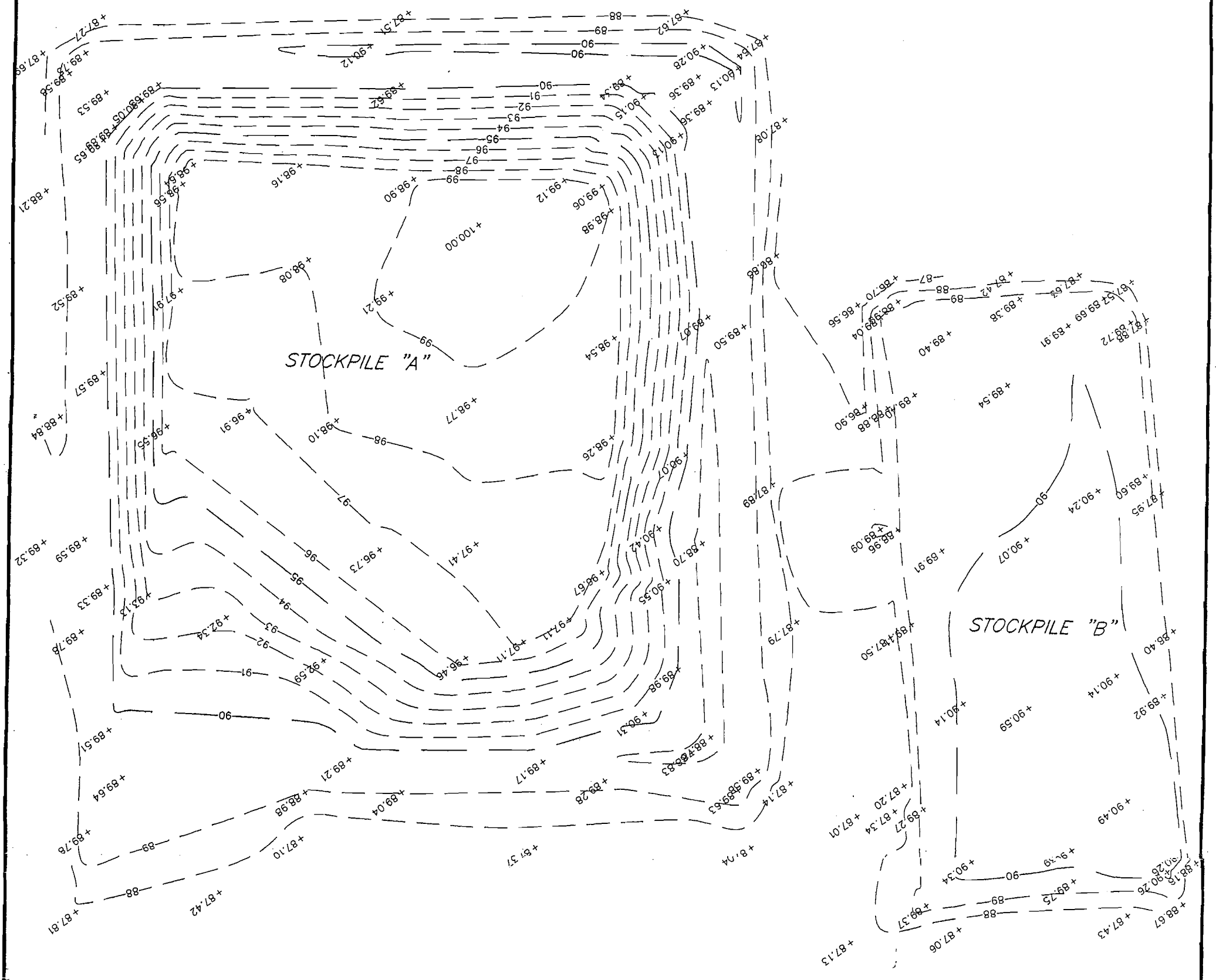
map prepared
May 16, 2002

	XRF Cr <=dl (ppm)	Total Cr (ppm)	Hex. Cr (ppm), ND=0	Hex. Cr (ppm), ND=#
Mean	6455.72449	737.57079	34.13687	34.34749
Standard Error	697.94310	60.82455	6.42205	6.41589
Median	1745	300	5.1	5.1
Mode	270	1540	0	11
Standard Deviation	9771.20343	813.77696	85.92121	85.83878
Sample Variance	476416.42627	662232.94353	7382.45369	7368.29574
Kurtosis	5.16695	1.24519	16.21225	16.24609
Skewness	2.18676	1.25746	3.94279	3.94785
Range	53420	3789.928	530	529.99
Minimum	180	0.072	0	0.01
Maximum	53600	3790	530	530
Sum	1265322	132025.172	6110.5	6148.2
Count	196	179	179	179
Largest(1)	53600	3790	530	530
Smallest(1)	180	0.072	0	0.01
Confidence Level(95.0%)	1376.48540	120.02998	12.67315	12.66100

Hex chro
240

APPENDIX C

TOPOGRAPHIC SURVEY OF SOIL STOCKPILES AT YARD 1



TOPOGRAPHIC SURVEY OF SOIL STOCKPILES AT YARD 1 IMTT BAYONNE BAYONNE, NEW JERSEY

DATUM IS ASSUMED

0 10 20 40

SCALE: 1"=20'

SCALE 1"=20'
ASCI/COGO –
FIELD BOOK 2002-2/41
DRAWING IMTT-STOCKPILE.DWG
WORK ORDER –
PROJECT NO 930601

BORBAS SURVEYING & MAPPING, LLC
402 MAIN STREET, BOONTON, NEW JERSEY 07005
Phone (973) 316-8743 Fax (973) 402-6627 www.borbas.com
Geomatics ○ Surveying ○ Mapping ○ Planning
Data Collection and Information Management ○ Geographic Information Systems Certified
Global Positioning System Certified ○ OSHA Hazardous Waste Operation Certified

J. PETER BORBAS
PROFESSIONAL LAND SURVEYOR 24GS03165300 PROFESSIONAL PLANNER 3884

Date: NOVEMBER 14, 2002

IMTT YARD 1 11-14-02

SOIL STOCKPILE VOLUME CALCULATIONS

STOCKPILE "A" (TO 90.00 CONTOUR)

MEAN ELEVATION AT BOTTOM OF STOCKPILE = 88.08
ELEVATION AT TOP OF STOCKPILE = 90.00

FILE

AREA OF 88' CONTOUR = 18,147 S.F.
AREA OF 89' CONTOUR = 16,353 S.F.
AREA OF 90' CONTOUR = 11,568 S.F.

AVG. AREA OF 88' & 89' CONTOURS = 17,250 S.F. x 0.92 = 15,870 C.F.
AVG. AREA OF 89' & 90' CONTOURS = 13,960 S.F. x 1.00 = 13,960 C.F.

VOLUME OF STOCKPILE TO 90.00 = 29,830 C.F./27 = 1,105 C.Y.

STOCKPILE "A" (FROM 90.00 CONTOUR TO TOP)

ELEVATION AT BOTTOM OF STOCKPILE = 90.00
MEAN ELEVATION AT TOP OF STOCKPILE = 99.35

AREA OF 90' CONTOUR = 11,568 S.F.
AREA OF 91' CONTOUR = 10,437 S.F.
AREA OF 92' CONTOUR = 9,556 S.F.
AREA OF 93' CONTOUR = 8,719 S.F.
AREA OF 94' CONTOUR = 7,911 S.F.
AREA OF 95' CONTOUR = 7,116 S.F.
AREA OF 96' CONTOUR = 6,354 S.F.
AREA OF 97' CONTOUR = 5,106 S.F.
AREA OF 98' CONTOUR = 3,182 S.F.
AREA OF 99' CONTOUR = 1,011 S.F.

AVG. AREA OF 90' & 91' CONTOURS = 11,002 S.F. x 1.00 = 11,002 C.F.
AVG. AREA OF 91' & 92' CONTOURS = 9,996 S.F. x 1.00 = 9,996 C.F.
AVG. AREA OF 92' & 93' CONTOURS = 9,137 S.F. x 1.00 = 9,137 C.F.
AVG. AREA OF 93' & 94' CONTOURS = 8,315 S.F. x 1.00 = 8,315 C.F.
AVG. AREA OF 94' & 95' CONTOURS = 7,513 S.F. x 1.00 = 7,513 C.F.
AVG. AREA OF 95' & 96' CONTOURS = 6,735 S.F. x 1.00 = 6,735 C.F.
AVG. AREA OF 96' & 97' CONTOURS = 5,730 S.F. x 1.00 = 5,730 C.F.
AVG. AREA OF 97' & 98' CONTOURS = 4,144 S.F. x 1.00 = 4,144 C.F.
AVG. AREA OF 98' & 99' CONTOURS = 2,096 S.F. x 1.00 = 2,096 C.F.
AREA OF 99' CONTOUR = 1,011 S.F. x 0.35 = 354 C.F.

VOLUME OF STOCKPILE FROM 90.00 TO TOP = 65,022 C.F./27 = 2,408 C.Y.

TOTAL VOLUME OF STOCKPILE "A" = 1,105 C.Y. + 2,408 C.Y. = 3,513 C.Y.

IMTT YARD 1_11-14-02

SOIL STOCKPILE VOLUME CALCULATIONS

STOCKPILE "B"

MEAN ELEVATION AT BOTTOM OF STOCKPILE = 87.54
MEAN ELEVATION AT TOP OF STOCKPILE = 90.29

AREA OF 88' CONTOUR = 5,559 S.F.
AREA OF 89' CONTOUR = 4,753 S.F.
AREA OF 90' CONTOUR = 2,283 S.F.

AREA OF 88' CONTOUR = 5,559 S.F. x 0.46 = 2,557 C.F.
AVG. AREA OF 88' & 89' CONTOURS = 5,156 S.F. x 1.00 = 5,156 C.F.
AVG. AREA OF 89' & 90' CONTOURS = 3,518 S.F. x 1.00 = 3,518 C.F.
AREA OF 90' CONTOUR = 2,283 S.F. x 0.29 = 662 C.F.

TOTAL VOLUME OF STOCKPILE = 11,893 C.F./27 = 440 C.Y.

Meeting/Site Visit Report
Bayonne Industries, Bayonne, Hudson Co.
Oct. 21, 1999

OCT 22 1999

Purpose of visit: Meeting with Bayonne Industries (BI) and their environmental consultant, Bluestone Environmental Services (Bluestone), and tour of Co-Gen facility, Platty Kill Creek, Platty Kill Pond and Westside Waterfront Areas

Personnel: NJDEP: Mike Kenney, John Boyer, Mary Hrenda MAH
BI: Dr. Bob Weaver, Tim Borel, George Bress
Bluestone: Andy Cozzi

Weather: 50's & low 60's F, sunny

We arrived onsite about 9:40 and met Dr. Weaver in the parking lot. He was on his way to check on the Westside Waterfront. We then proceeded inside and met with BI and Bluestone in a conference room at the BI office building onsite.

Meeting

Platty Kill Pond (Pond): We discussed BI's previously-submitted pre-design workplan for sampling sludge and clay in the Pond. The Pond is actually a former oil-water separator, which is actually the upstream end of the Platty Kill Creek, a creek which was dredged out by Tidewater Oil Co., which formerly operated an oil refinery on the site. The Pond has been physically separated from the Canal by an earthen dam with an impermeable liner, consisting of clay at the bottom, overlapping 5' with a 1/16" nylon-reinforced neoprene liner, above, installed in the middle of the dam. About 9-10 ft. of oily sludge is present in the bottom of the Pond. Borings in the Pond have shown the sludge to be underlain immediately by a red-brown silty sand in some areas. In the pond, this layer seems to be mostly mixed with oily sludge. The sand thickness within the Pond ranges from 0-12 ft. (including sandy sludge). Debris is also present in the Pond. One of Weston's (1979) auger borings noted wood, stones, cinders, etc. from a depth of 18-22 ft. below the water surface. Refusal was noted in three areas of the Pond during vibrocore borings by Bluestone (BI, Sept. 1999). The Vibrocore method of boring is suited to soft sediments only. The sand layer is underlain with red-brown silt and clay. The full thickness of the silty clay was not penetrated in the vicinity of the Pond. However, borings in the Pond by Weston (1979) penetrated the clay to depths of 7-11 ft. below the bottom of the sand/sludge in all borings, except the one in the northeast corner, which encountered refusal at a depth of 2.25 ft. below the top of the clay. Since 1981, BI has been attempting to remediate the sludge in the pond by in-situ bioremediation, enhanced by mixing and aeration. These methods have not been effective in remediating the sludges to contaminant concentrations that would be protective of ground and surface water.

BI proposes to solidify the sludge in the pond, so that it will cease being a source of contamination to ground water and the nearby Kill Van Kull waterway, into which the Creek discharges. The purpose of the proposed sampling is to gather additional data on the properties of the clay, the depth of contamination in the clay and the TPH concentrations in the sludge, in order to estimate the cost of the project and determine the correct composition for the solidifying mixture. BI proposes using vibrocore drilling, taking samples at pre-determined depths, based on logs of previous borings. Sludge and sand are to be sampled for TPH, and clay samples are to be analyzed for TPH, Priority Pollutant metals, VO+10, and BN+15 and also tested for permeability. In the meeting, BI stated that they had solicited bids for the project, and were trying to determine the best bid at that time. They also said they were thinking of using chirp sonar to try to locate and better define obstructions in the Pond. NJDEP told BI that they did not have to have a cost estimate to submit a RASR for the Pond. BI said they would submit the RASR Dec. 6. NJDEP stated that they would review the Sept. 1999 pre-design sampling proposal expeditiously.

Platty Kill Creek: Exxon and BI are meeting to determine how they will remediate the creek jointly on Nov. 11. It was decided that, sometime following this meeting, there would be a meeting with BI, Exxon and NJDEP. BI verbally proposed removal of hotspots and solidifying them in the Pond. The volume of contaminated sludge/sediment in the Creek that could be treated in this way would depend on how much extra volume would be available in the Pond beyond that taken up by solidification of the sludge/sand in the Pond.

Westside Waterfront: We inspected the waterfront for sheens and did not see any during this inspection. It should be noted that BI knew we were coming. BI also showed us recovery wells RW-C, RW-D and RW-E, which they intend to equip with total fluids pumps. In addition, an oil-water separator is planned to be installed near RW-E. Oil recovery in Sump 6 had been halted. BI said that oil enters this sump to slowly to be recovered by a continuously operating recovery system. NJDEP observed a substantial layer of oil on the sump (by dropping a stone into the sump). We told BI that they should at least remove the oil periodically using a vacuum truck. BI said that they had totally ceased the use of a vacuum truck for oil recovery, based on NJDEP's previous letters. It should be noted that previous NJDEP correspondence (see NJDEP 10/27/98 letter to BI) stated that a vacuum truck should not be used for well development, and did not refer to other uses of such equipment. It was decided that, in the specific case of Sump 6, BI may periodically remove free product from the sump with a vacuum truck. BI stated that water levels have been quite high in this AOC since Hurricane Floyd, which has hindered their oil recovery efforts.

Outside the East Side of Co-Gen Plant Site: BI showed us the new recovery wells they have installed along the east side of the Co-Gen plant. Mike asked BI for as-built drawings of these wells. BI stated that they had already submitted the as-builts for these wells. It should be noted that neither boring logs nor as-built drawings for these recovery wells were included in any of the correspondence from BI to NJDEP that BGWPA has in its files from BI's initial report on exploration activities in this area in their third quarter 1998 quarterly report to the present. BI should be asked to supply the case team with these documents, as well as copies of the NJDEP Well Record forms for these wells.

C: M. Kenney, BCM
J. Boyer, BEERA
E. Fernandez, BGWPA
G. Czock, BGWPA

RECEIVED
NOV 2 9 1999

State of New Jersey
Department of Environmental Protection
Bureau of Case Management
P.O. Box 028
401 East State Street
Trenton, NJ 08625-0028
Telephone: (609) 633-1455
Facsimile: (609) 633-1439

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

DEC 17 1999

Dr. Robert Weaver
Bayonne Industries, Inc.
321 St. Charles Street
New Orleans, LA 70130

Dear Dr. Weaver:

Re: In the Matter of the Bayonne Industries Site, Cogen Technologies, and Bayonne Industries, Inc.
City of Bayonne, Hudson County, New Jersey
Contaminated Site List No. NJD064288855 and ISRA Case # 98513
27 May 1992 Memorandum of Agreement (MOA) and 22 January 1999 Remediation Agreement (RA)

The New Jersey Department of Environmental Protection (Department or NJDEP) has completed its review of the Bayonne Cogeneration Facility ISRA Preliminary Assessment Report (PA Report) dated 29 January 1999, which was received on 6 August 1999. Bayonne Industries, Inc. (BI) is notified that the PA Report is conditionally acceptable pending submission of the supplemental information described in this letter. The NJDEP considered the contents of the PA Report and the observations that its representatives made during the 21 October 1999 site inspection in rendering this determination. Due to the circumstances related to the Industrial Establishment and the ISRA requirements, the Department also clarifies its position on the No Further Action (NFA) and No Further Investigation (NFI) proposals contained in the PA Report.

Supplemental Information

1. Site History - Appendix I

According to the Site History, power generated at the Cogeneration facility is sent to the nearby PSE&G substation by way of an underground dielectric fluid-cooled cable. The location of this cable shall be identified on a scaled site map (entire site, not just the Cogen parcel). Information on the composition of the dielectric fluid shall also be provided to address concerns associated with the potential for the fluid to contain polychlorinated biphenyls (PCBs) or volatile organic compounds. If the fluid contains these (or other) hazardous substances, the cable represents a potential AOC and may require further investigation.

2. Potential Areas of Concern - Narrative Discussion

a. Cogen notified the NJDEP about a PCB-contaminated transformer oil spill that occurred near the Boiler House in March 1994. The PA Report indicates that the spill was properly remediated, but documentation in support of that claim was not included. During the 21 October 1999 site inspection, Cogen provided a copy of a 30 June 1994 letter from the NJDEP's Bureau of Discharge Prevention that downgraded the incident from a "discharge" to a "leak".

To complete the administrative record for this case and to support the proposed NFI for this AOC, BI must provide a report that includes text, analytical data, tables and figures in a format that is consistent with the *Technical Requirements for Site Remediation* (TRSR), N.J.A.C. 7:26E-1 et seq. This supplemental report will be reviewed by this office to ensure that the previous remedial activities meet/satisfy the Department's current remediation criteria.

b. The PA Report states that no spills or leaks occurred from the underground piping that runs from the Boiler House to the wastewater treatment system. The technical basis (e.g. - integrity test results, adjacent soil sampling data, video inspection and/or other documentation) shall be provided to support/justify this statement. The NJDEP will determine the need for further investigation/action after it completes a review of this supplemental information.

Clarification of NFA and NFI Determinations

The PA Report examines the two parcels of land associated with the Cogeneration Facility, which represents a small portion of the 200-acre site that BI is remediating under the MOA. The PA Report identifies the areas of concern (AOCs) that currently exist in the leasehold area and proposes either a NFA or NFI for each AOC. However, the TRSR require that the PA Report identify all potential AOCs, both current and historical. Since the subject document only identifies the AOCs that are associated with the current operations that commenced in 1988, the PA Report does not fully conform to the TRSR.

In addition, the PA Report states that there have been no documented spills in this area. This statement about the spill history cannot be accepted as conclusive because historical operations at the site date back to the mid-1800s and neither the subject document nor the Preliminary Site Assessment that was previously submitted by BI contain any information regarding historic spills. Moreover, BI's Preliminary Site Assessment includes a 1948 Plot Plan (see Exhibit 2) that shows that the process area for Tidewater Associated Oil Company's refining operations was located in the same area as the Cogeneration facility. The findings of the remedial investigation being conducted pursuant to the MOA also establish that a product plume exists beneath/around the Cogeneration facility. Clearly, the existence of the historical AOCs and the product plume require further remediation, including without limitation the need to investigate potential source areas, characterize/delineate soil contamination, and treat/remove product (or contain the product if treatment/removal is impracticable) within the leasehold area.

Based on the above, the NJDEP cannot approve the NFA proposals contained in the PA Report. However, the conditions observed during the 21 October 1999 site inspection and available information support a NFI proposal for AOCs A through I, L, M and N. The Department also approves a NFI for the electrical transformers (AOC J) and underground piping (AOC K) situated on Block 381, Lot 2 and Block A, Lot 4 as described on page 3 of Appendix III of the PA Report. The underground dielectic fluid-cooled cable as well as the former transformer (AOC J) and underground piping (AOC K) associated with the Boiler House located on Block 477.01 require further investigation as described in items 1 and 2, above. Pursuant to paragraph I.2 of the RA, BI shall submit the required information regarding these AOCs within thirty (30) calendar days from receipt of this correspondence.

The NFI for the soil and ground water (AOC O) is rejected. As stipulated in paragraph I.1 of the RA, the NJDEP will oversee the remediation of the existing product, soil, and ground water contamination pursuant to the terms established by the MOA. Based on available information and the observations that the NJDEP's representatives made during the 21 October 1999 site inspection, the remediation of the existing contamination shall include the installation of soil borings, temporary well points, monitor wells, and/or other investigative devices within the leasehold area. The Department may also require the installation, operation and maintenance of product recovery system components (e.g. – recovery wells) within the leasehold area to facilitate the remediation of the Industrial Establishment. Future determinations regarding the frequency and location of investigative devices and recovery system components within the leasehold area will be rendered by the NJDEP pursuant to the TRSR and the MOA.

If you have any questions, please contact me at (609) 633-0739 or via email at *mkenney@dep.state.nj.us*.

Sincerely,

Michael S. Kenney

Michael S. Kenney, Case Manager
Bureau of Case Management

c: James Monkowski, Bayonne Health Department
Mitchell Garber, East Coast Power, L.L.C.
Mary Hrenda, BGWPA
John Boyer, BEERA
Chris Kanakis, BCM

January 21, 2003

Mike

Storm water was recently observed discharging into the Platty Kill Pond via a 36-inch diameter sewer pipe. This sewer pipe is shown on historic drawings as being plugged. The presence of the plug was field verified in 2001. A dye study was conducted and the source of the storm water identified. A sewer investigation is currently in progress to determine why the plug failed.

A clay plug will be inserted into the sewer pipe as a temporary measure in order to prevent additional storm water from entering the PK Pond. A dike constructed of clean stone will be built in the PK Pond at the point where the sewer terminates to allow access to the sewer. If it determined that plugging the sewer does not create a flooding problem, the sewer pipe will be permanently plugged with concrete. An additional sewer investigation will be conducted if plugging the sewer creates a flooding problem.

At this time it is believed that this was a recent development.

This additional source of storm water entering the PK Pond caused the Pond to overflow into the Platty Kill Canal through an overflow pipe. This overflow pipe was missed in the recent NJPDES Permit application and therefore this event is viewed as an un-permitted discharge. This discharge was called into the Hotline.

A full report on this matter will be included in the first quarter report of 2003.

Call if you have questions.

George

Cc: Rusty Walker, Andrew Cozzi

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www.westonsolutions.com

11 November 2005

J. Mark Walters, Case Manager
New Jersey Department of Environmental Protection
Bureau of Case Management
401 East State Street
Trenton, New Jersey 08625

RE: Response To Comments
NJDEP Letter dated 17 August 2005
International-Matex Tank Terminals
Bayonne, New Jersey
Case Nos. 04-03-29-0828-11 and 04-09-15-1047-20

Dear Mr. Walters,

On behalf of International-Matex Tank Terminals (IMTT) for the Bayonne Industries (BI) Site, Weston Solutions, Inc. (Weston®) has prepared this submittal, which serves as a response to the recent New Jersey Department of Environmental Protection (NJDEP) comment letter. The comment letter was issued via email on 17 August 2005 (herein referenced as the date of the comment letter), which addressed the following submittals:

- August, 2004 *Remedial Investigation Report (RIR), Sodium Hydroxide (NaOH) Release*
- June, 2005 *Technical Memorandum – Remedial Activities Completion Status and Proposed Path Forward, NJDEP Spill Number 04-03-29-0828-11*
- June, 2005 *Site Investigation Report (SIR) - Spill Report Case No. 04-09-15-1047-20 Sodium Hydroxide Release – Tanks 1705 and 1706*

As directed by the NJDEP 17 August 2005 letter, this letter includes:

- a comment-response document that follows the general outline of the NJDEP 17 August 2005 comments;
- a supplemental RIR which summarizes investigations and results completed since the submittal of the August 2004 RIR for Case No. 04-03-29-0828-11 and the June 2005 Final SIR for Case No. 04-09-15-1047-20; and
- a Remedial Investigation Workplan (RIWP) which address the NJDEP's requirements for conducting additional delineation and monitoring and NJDEP comments regarding low-flow sampling techniques.

These documents are included as Attachment A (Comment-Response Document), Attachment B (Supplemental RIR), and Attachment C (RIWP), respectively.

The supplemental RIR and the RIWP are being submitted as separate and abbreviated documents as agreed to by NJDEP, IMTT, and Weston during a 13 September 2005 meeting. It was decided to submit the data and the proposal for additional investigation in this manner to allow for an expedited review due to IMTT's desire to remain proactive. IMTT is requesting NJDEP's concurrence with the abbreviated RIWP attached prior to implementation of the next phase of investigation.

If you have any questions regarding this submittal or would like to schedule a meeting to discuss the attached comments, please contact me at (732) 417-5865.

Very Truly Yours,

WESTON SOLUTIONS, INC.

Rob Gascoyne
Project Manager

cc: T. Lambert (IMTT-Bayonne)
S. Larsen (IMTT-Bayonne)
R. Craig (Weston)
L. Clifford (Weston)

Attachment A

ATTACHMENT A

COMMENT-RESPONSE DOCUMENT
MARCH 2004 AND SEPTEMBER 2004 SODIUM HYDROXIDE RELEASES
INTERNATIONAL-MATEX TANK TERMINALS/BAYONNE INDUSTRIES SITE
BAYONNE, NEW JERSEY

ATTACHMENT A

COMMENT-RESPONSE DOCUMENT
MARCH 2004 AND SEPTEMBER 2004 SODIUM HYDROXIDE RELEASES
INTERNATIONAL-MATEX TANK TERMINALS/BAYONNE INDUSTRIES SITE
BAYONNE, NEW JERSEY

November 2005

Prepared for:

INTERNATIONAL-MATEX TANK TERMINALS
321 St. Charles Street
New Orleans, Louisiana 70130

Prepared by:

WESTON SOLUTIONS, INC.
205 Campus Drive
Edison, New Jersey 08837

Work Order No.: 12629.008.001.0004

NJDEP Comments

NaOH Spill Area Investigations, Remedial Measures

And

Proposed Path Forward

NJDEP Comment:

1. *Underground Pipes/Utilities in the Area of the NaOH Spills and Completion of Delineation:* The investigation of the NaOH spills appear not to have taken into account the existence of historic underground piping in the area. On the 1921 Plot Plan of the former Tide Water Oil Co. property, now the IMTT BI site, (Exhibit 1 in the 10/15/92 Provisional Ground Water Remedial Investigation Workplan (RIW) for the site) a box sewer is shown running directly along the west sides of Tanks 1118 (now 1710), 1119, 1120, 1121 and what is now Tank 1124 towards the Kill Van Kull. This sewer seems to have been abandoned at some time between 1921 and 1948. The evidence for this is that the 1948 map of the site and its sewers (Exhibit 2 in the above-referenced RIW), the drawing of historic 1953 site sewers (Drawing 3 in the April 16, 2004 Sewer System RIW) and the drawing of presently active sewer lines in the southern part of the IMTT BI site (Drawing 2, sheet 1 of 2, misnumbered Drawing 1, sheet 1 of 2 in the 4/16/04 Sewer RIW) all show a sewer line running along the east sides of these tanks, instead of the west side. The old sewer line shown on the west side of the tanks in the 1921 drawing was most likely abandoned in place, and may be acting as a conduit for migration of the 50% NaOH product and affected ground water towards the Kill Van Kull. According to Section 1.1.1 of the Aug. 2004 Final RIR for the March 2004 NaOH spill, the elbow that failed in the pipe transporting the caustic from Tanks 1119 and 1120 to the caustic rack is on the inside of the tank containment berm, near this old sewer. Only one successful boring seems to have been performed in the vicinity of this old sewer downgradient of the spill location. This was boring Y1-CAS-20. Borings Y1-CAS-19 and Y1-CAS-25 appear to have been attempted inside the containment berm on the west-southwest side of Tank 1120, but these boring locations were abandoned after encountering refusal on three attempts. The log of boring Y1-CAS-20 reports a pH of 12 at 2 ft., 4.5 ft. and 15 ft. bgs (just on top of the meadow mat). The pH readings of 12 at 2 and 4.5 ft. bgs were not typical, as illustrated by Figs. 4A and 5A in the 8/04 RIR. Only borings Y1-CAS-1A, Y1-CAS-1B and Y1-CAS-2, performed in very close proximity to the release area, had soil pH readings greater than 10 at similar distances above the top of the meadow mat. (Please note that the soil pH readings shown as being for boring Y1-CAS-7 on Fig. 4A are actually those for boring Y1-CAS-1B, see the logs in Appendix I.) The 50% NaOH acted as a DNAPL and migrated to the top of the meadow mat, and the depths at which pH readings greater than 10 were reported were near the top of the meadow mat in most cases. It is possible that the much lower pH readings reported in the log of boring Y1-CAS-20 may be due to the migration of 50% NaOH along

the old sewer or the bedding around it adjacent to the boring location. The geophysical investigation performed by Weston to locate underground utilities in the spill area was performed in a relatively open area downgradient from, and on the opposite side of, the railroad tracks and road from Tanks 1119, 1120, 1121 and 1124, as depicted in Figs. 9 through 13 in the 8/04 RIR. Therefore, the sewer shown on the 1921 map as being adjacent to the tanks would not have been detected in this geophysical investigation.

The ground water monitoring results for pH over the past three quarters documented in the June 20, 2005 Technical Memorandum – Remedial Activities Completion Status and Proposed Path Forward for the March 2004 NaOH spill indicate an increase in pH in ground water samples from monitor well Y1-MW-5. The pH of samples from this well increased from 8.5 in the first quarterly sampling round to 11.87 in the second round, and in the third round, the pH was still elevated, at 10.18. This seems to support the theory that the old sewer depicted on the 1921 site plan referenced above may be a preferential pathway for migration of NaOH product and/or impacted ground water, because well Y1-MW-5 appears to be located near this old sewer. In the June 2005 SIR on the Sept. 15, 2004 NaOH release from the piping system for ASTs 1705 and 1706, IMTT reports that the ground water sample from temporary well Y1-GW-P4 had a pH of 9.22. The location of this temporary well is shown on Fig. 4 in the June 2005 SI for this spill. It was located approximately 80 ft. south-southwest (presumably downgradient) of the Sept. 2004 spill location. As a result of this SI, IMTT concludes in Section 4.0 of the SIR that the Sept. 2004 NaOH spill had no impact on subsurface soil or ground water, and that the elevated pH detected in the ground water sample from temporary well Y1-GW-P4 was the result of the March 2004 NaOH spill. Temporary well Y1-GW-P4 is located approximately 220 ft. southeast of the site of the March 2004 NaOH spill, approximately 25 ft. east of Tank 1124. The fact that ground water with an elevated pH was detected in this location may be the result of NaOH product and/or ground water impacted by one or both of the NaOH leaks migrating along the present sewer lines (shown on Drawing 2, sheet 1 of 2, misnumbered Drawing 1, sheet 1 of 2 in the 4/16/04 Sewer RIW) and/or the old 36" salt water main (shown on the 1921 drawing of the site referenced above). Further comment on the June 2005 SIR for the Sept. 2004 NaOH spill is provided below, mainly in Comments 10 and 11.

In the Conceptual Remedial Approach section of the June 20, 2005 Technical Memorandum, IMTT proposes to delineate (via temporary wells) ground water with a pH higher than 8.5 to the southeast of monitor wells Y1-MW-5 and Y1-MW-46. As part of its investigation of the impact of the spilled NaOH on the subsurface in this area of the site, IMTT must also perform an investigation to locate the old sewer, 54" city sewer and salt water main shown in the area on the 1921 drawing. IMTT must investigate soil, ground water and surface water pH at the locations where the three of these sewers/pipes intersect with the Kill Van Kull. IMTT must also investigate and delineate elevated soil and ground water pH (>8.5 SU) along the paths of the old sewers, active sewers and salt water pipeline. This investigation must be performed down to the top of the meadow mat, because the NaOH product has behaved as a DNAPL. Therefore, in all boring locations, soil pH must be measured at a minimum of five depths, including measurements in/at the base of all soil horizons encountered (including suspected pipe bedding) that may be acting or have acted as a conduit for migration of NaOH product and at the top of the meadow mat. All soil boring logs must note the depth in feet

and decimal fractions of a foot below ground surface of all pH measurements as accurately as possible. All permanent and temporary wells must be screened down to, or slightly below, the top of the meadow mat.

Following the investigation/delineation of soil and ground water pH along the potential preferential migration pathways mentioned above and the area to the south and southeast of Y1-MW-5 and Y1-MW-46, IMTT must propose locations for new recovery wells and monitor wells as needed to:

- Recover product.
- Provide any needed hydraulic control to keep NaOH product and/or the affected ground water from impacting the Kill Van Kull and wetlands.
- Monitor the plume of affected ground water to determine whether it is migrating, increasing or decreasing in size and/or concentration or remaining stable and whether or not remedial actions are performing effectively and protective of receptors.

IMTT/Weston Response:

The above-referenced reports and figures were reviewed and the locations of the above-referenced lines/piping were added to the base map (Exhibit A).

To satisfy the New Jersey Department of Environmental Protection's (NJDEP's) comments, International-Matex Tank Terminals (IMTT) and Weston Solutions, Inc. (Weston®) will locate the referenced lines and conduct the requested investigation as described above. Additionally, IMTT and Weston are conducting a detailed review of all available files in conjunction with IMTT's engineering office to determine if any other additional lines and/or preferential pathways may exist. This review will be completed prior to any field investigation. In the event that any other additional potential lines are located, they will be added to the based map and investigated consistent with the approach requested by the NJDEP and detailed in the attached RIWP. The proposed supplemental investigation(s), as identified above, are described in the attached abbreviated Remedial Investigation Workplan (RIWP; Attachment C under the 28 October 2005 cover letter). Following the receipt and evaluation of the data collected as a result of completion of the scope of work outlined in the proposed RIWP, a supplemental Remedial Investigation Report (RIR) and proposal(s) for additional remediation, if necessary, will be submitted.

NJDEP Comment:

2. *Conceptual Remedial Approach and Actions Requested of the Department in June 20, 2005 Technical Memorandum:* IMTT has requested NJDEP to agree with them that remediation of the source is complete following the reduction of pH levels to less than 12 SU and that active remediation (pumping) of the source is not required upon completion of source area remediation (pH<12 SU). IMTT has also asked NJDEP to agree that the existing engineering controls are sufficient, combined with completion of a CEA application, and that the CEA application and natural attenuation monitoring are adequate and appropriate remedial

measures. Agreeing to these stipulations at this time would be premature based on the following:

- As stated in the June 20, 2005 Technical Memorandum, NJDEP agreed to allow IMTT to suspend pumping of the recovery wells on a trial basis provided that IMTT continue monitoring ground water pH to determine whether sufficient source material has been recovered so that ground water will naturally remediate within a reasonable time and that ground water with a pH higher than 8.5 will not reach the Kill Van Kull.

- As discussed above, it is not known whether or not the source area is completely delineated or whether potential migration pathways are known or sufficiently monitored at this time.

- A decreasing trend in ground water pH has not been established.

- Per N.J.A.C. 7:26E-4.4(h) 3i, and N.J.A.C. 7:26E-6.3(d) 4, the delineation of ground water with an elevated pH (>8.5 SU) and the source of this ground water contamination must be completed.

- Per N.J.A.C. 7:26E-6.3(d) 5, IMTT must ensure that ground water with a pH greater than 8.5 SU will not reach the nearest downgradient receptor. In addition to the Kill Van Kull, please note that Fig. 3 in the Aug. 2004 RIR (based on the National Wetlands Inventory Map) and the discussion in Section 2.4 of this RIR indicate wetlands in the area that may be impacted by the NaOH releases.

- In order for NJDEP to approve natural remediation, the monitoring and performance requirements for natural remediation per N.J.A.C. 7:26E-6.3(e) must also be met.

IMTT/Weston Response:

The approach presented by IMTT and Weston was a conceptual approach based on the conceptual site model. The approach was developed and submitted due to IMTT's desire to remain proactive and based on additional data not reviewed by the NJDEP. The purpose of the approach was to generate a mutually agreeable path forward. IMTT and Weston were not requesting formal NJDEP acceptance of the remedial approach at this time. No other additional response appears necessary.

NJDEP Comment:

3. *Effect of NaOH on Meadow Mat:* The NaOH released at the site may have had a corrosive effect on the organic material in the meadow mat and may have compromised its confining ability. Therefore, as part of the delineation requirements discussed above, IMTT BI must determine whether or not the NaOH may have migrated beneath the meadow mat.

WESTON SOLUTIONS

IMTT/Weston Response:

Weston understands the NJDEP is concerned about the corrosive effects of NaOH on the organic material which may be present within the clay layer beneath the site. Due to this concern and in consideration of the below-referenced facts, Weston proposes postponing consideration of any vertical investigations until remediation of the source area is complete:

- Salts, including NaOH, typically cause clay materials to swell, thus lowering their permeability and increasing their confining abilities. As stated in the 7th Edition of *Soil in Our Environment* (Miller, R.W. and R.L. Donahue, 1995), high sodium may cause colloidal dispersion which makes the soil less permeable or even impermeable (Exhibit B).

- The areal extent and thickness of this confining layer. The meadow mat has been encountered throughout the site. In 1995, as part of the deep exploratory boring program, a boring to the depth of 71 feet below ground surface (bgs) (double cased) was installed in Yard 6 (Y6-ESB-01). At this location, the confining layer was reported to be 12 feet thick.

- Additionally, during the 1995 investigation, at the locations completed as part of the deep exploratory boring program, Shelby tube samples were collected for geotechnical analysis. The results indicated that the hydraulic conductivity of the silty clay (meadow mat) was consistent across the site and was within the upper limit value reported for clay (10^{-7} to 10^{-10}). This range is typical and common of a clay liner.

- Furthermore, potable wells (a potential receptor) have not been identified in the area.

NJDEP Comment:

4. Delineation of Approximate Source Area and Approximate Impacted Area in Aug. 2004 RIR: Given that additional delineation/investigation is necessary as discussed above, NJDEP is not confident that the Approximate Source Area boundary for the ground water with an elevated pH as indicated by a red line on Figs. 16, 17 and 18 in the 8/04 RIR has been determined at this time. Furthermore, there are quite a number of soil boring locations outside this Approximate Source Area Boundary in which soil samples with an elevated pH, as high as 10, 12 or greater were obtained, indicating that the NaOH source material had migrated to these locations (Please see Figs. 4A and 5A in the 8/04 RIR). Therefore, the Approximate Source Area boundary should be revised based on further delineation and the inclusion of soil investigation results. Please note that this would also apply to the Approximate Impacted Area Boundary, which currently does not include all soil and/or ground water sampling locations with an elevated pH.

WESTON SOLUTIONS

IMTT/Weston Response:

As referenced in the August 2004 RIR and as discussed during the 13 September 2005 meeting, the boundaries for the approximate source and impacted areas were based on pH readings detected in groundwater. The source area is bounded by pH units 12 or greater, and in the impacted area, pH units greater than 8.5 and less than 12.

Figures 16, 17, and 18 (referenced above) are addressed under comment 5 below. The text in the August 2004 RIR referenced these figures as isopleths maps; however, the maps depicted approximate source area and approximate impacted boundaries. An approximate source area and approximate impacted boundary map has been prepared and is provided as Exhibit C. The March 2004 Bluestone and July 2004 Weston temporary well point pH results and the pH results from the August 2004 groundwater sampling event were used to construct this map. Consistent with the discussion regarding this comment during the 13 September 2005 meeting, field screening data (litmus paper readings) collected during the investigative phases were not utilized during the construction of the figure. The figure will be updated/revised subsequent to the performance of the work described in the RIWP (Attachment C).

NJDEP Comment:

5. Isopleths: In Section 4.1.3.3 of the text of the 8/04 RIR, Weston states that they have drawn an isopleth contour map for pH on Figs. 16, 17 and 18 of that document. This may refer to the Approximate Source Area Boundary and Approximate Impacted Area Boundary lines drawn on these figures. However, the labels given to these lines on the figures do not indicate that they are isopleth contours. Isopleth contour lines are supposed to be drawn through points of equal value on a map or chart, and should be labeled with that value. A separate isopleth map should be constructed for each parameter and for each medium (pH contours for soil, pH contours for ground water, etc.). In addition, the value of the parameter (e.g., pH) obtained at each sampling point in the medium for which the map was drawn should be shown on the map. By overlaying numerous maps in the 8/04 RIR, NJDEP has determined that the red Approximate Source Area Boundary actually encloses all ground water sample locations with a pH greater than 12. As stated above, the pH 12 ground water contour is not the same thing as the source area. Furthermore, ground water samples have not been taken in the upgradient or easternmost portion of the source area. Therefore, it is possible that the extent of ground water having a pH of 12 or greater may extend further to the north and east than the area depicted on the map, or may have done so at the time the samples included in the subject document were taken. It may have been more realistic to extend an inferred pH 12 ground water contour to enclose the area in which the soil pH was 12 or more. In all future reports to NJDEP, map/drawing features must be labeled correctly, and all mapping must be performed in accordance with generally accepted mapping conventions and in accordance with the Technical Requirements for Site Remediation.

Note: Section 3.2.6.2 of the 8/04 RIR states that an isopleth contour map was incorporated into Fig. 19 (which depicts total chromium concentrations in ground water samples from monitoring wells). There are no isopleth contours on this figure.

IMTT/Weston Response:

Revised Figures 16 and 18 are included as Exhibit D. The revised figures include plotted isopleth lines for pH levels detected in groundwater. Figure 17 was not revised based on the fact that this figure depicts sample results from various sample intervals, and only one of the 17 pH readings listed had a pH reading greater than 8.5 units. The locations on this figure as well as the associated pH readings from the 12-to-14 foot sample interval were plotted on the revised Figure 16, where the data could be better evaluated.

Isopleths for the field screening of soil are not included in this submittal and will not be included in future submittals as discussed and agreed upon by NJDEP, IMTT, and Weston during the 13 September 2005 meeting. The readings which were obtained from the field screening of soil were collected primarily for health and safety purposes and secondarily, as a field screening tool to guide the groundwater investigation. IMTT/Weston's response to Comment 4 above addresses NJDEP concerns under this comment associated with the approximate source and impacted area boundaries. All field screening data will be collected in the required manner and provided to the NJDEP in a format consistent with the *New Jersey Technical Requirements for Site Remediation* (N.J.A.C. 7:26E).

Regarding the note pertaining to Section 3.2.6.2, Weston apologizes for any confusion relating to this comment. In the third paragraph in this section, Weston states, "An isopleth contour map for total chromium concentrations was not developed since total chromium was present at the highest concentrations in the background wells." Therefore no isopleth map was provided.

NJDEP Comment:

6. Well Construction Documented in the Aug. 2004 RIR: Since 50% NaOH is a DNAPL, the bottoms of monitor well screens should be set slightly below the top of the confining unit at the bottom of the aquifer/water bearing unit being investigated, with a sump below the bottom of the well screen. Alternatively, the bottom of the well screen may be set slightly below the top of the confining unit. The bottom of the well screen or sump must be set at the bottom of the hole drilled for the well, so that DNAPL does not collect in the hole/disturbed zone below the well screen, instead of in the well. The 8/04 RIR provides no evidence that the well screens of the permanent monitor wells were set at or below the top of the confining unit, as the text in Section 3.2.5.1 states. No geologist's logs for the monitor wells were provided in the Aug. 2004 RIR. A comparison of logs of nearby soil borings with the well depths provided in Appendix M indicates that the bottoms of the screens of some of the permanent monitor wells may have been set some distance above the meadow mat. IMTT must provide NJDEP with the geologist's logs for the permanent monitor wells installed by Weston, if they exist. If they do not exist, IMTT must submit to NJDEP copies of the original notes of the field personnel overseeing the construction of the monitor wells.

   IMTT BI must clarify the size of the sand pack material used for the monitor wells for this investigation. The text in Section 3.2.5.1 conflicts with the monitor well records in Appendix M in the 8/04 RIR.

IMTT/Weston Response:

The wells installed in 2004 as part of the initial investigation were installed directly atop the meadow mat unit. As requested, copies of the geologist logs/field notes for the seven wells are included in Exhibit E. The table below is a summary of well IDs:

Actual Monitoring Well ID:	Geologist Logs/Field Notes Monitoring Well IDs:
Y6-MW-1	WMW-1
Y6-MW-2	WMW-2
Y6-MW-3	WMW-3
Y6-MW-4	WMW-4
Y4-MW-5	WMW-5
Y6-MW-6	MW-6
Y1-MW-7	MW-7

As part of the soil investigation described in Section 3.2.2.1 of the August 2004 RIR, a stratigraphic investigation was performed to define the vertical limits of the upper stratigraphic units (fill and meadow mat). As described in Section 3.2.2.1, all borings were advanced until the meadow mat unit was encountered. Using the soil boring logs from the borings completed in the vicinity of each well location, the borehole for each well was advanced until the estimated top depth of the meadow mat, and then a split-spoon(s) was advanced (visual observations and/or geotechnical blow counts) to confirm the unit's presence. IMTT and Weston request clarification from the NJDEP whether additional response is required once the NJDEP reviews the information provided in Exhibit E.

The data provided in Appendix M of the August 2004 RIR is correct. The sand pack material used for the monitoring wells in this investigation was Morie Number 1.

NJDEP Comment:

7. Low Flow Sampling Documented in the Aug. 2004 RIR:

   a) Pump Intake Settings: NJDEP disagrees with Weston's conclusion in Section 3.2.4.2 of the 8/04 RIR that the results of the discrete point ground water sampling indicate that pH levels are relatively consistent throughout the water-bearing unit. Depth-discrete ground water samples were taken on July 15, 2004 at one upgradient location, two plume-fringe locations and three downgradient locations. All of these locations appear to coincide with locations of soil borings performed previously on July 12 or 13 2004. At one of the two plume-fringe locations, HP-3, the ground water pH was reported as 6.8 in the depth interval of 8-10 ft. bgs, 9.0 at 10-12 ft. bgs and 10.4 at 12-14 ft. bgs. The location of HP-3 seems to coincide with that of soil boring SB-12, where soil with a pH of 10 was retrieved from a depth of 16 ft. bgs, on top of the meadow mat. The other plume-fringe depth-discrete ground water sample location, HP-6, seems to coincide with the location of soil boring SB-17, where soil with a pH of 8.0 was retrieved from 12 ft. bgs, and soil with a pH of 11 was retrieved from 15 ft. bgs. The deepest discrete ground water sample from HP-6 was reportedly taken from 12-14 ft. bgs and had a pH of 7.0. Therefore, the

results of 50% of the two vertical ground water sampling profiles performed in locations in which soil on top of the meadow mat had an elevated pH indicated that ground water near the top of the meadow mat also had an elevated pH. In the absence of any other vertical profile ground water data from locations with similar vertical distributions of soil pH, NJDEP recommends that ground water sampling from permanent or temporary wells located in or near the source area (for example MW-25, Y6-MW-6, Y6-MW-4, Y1-MW-46 and Y1-MW-5) should be performed with the pump intake set approximately 2 ft. above the meadow mat. Please inform NJDEP where the pump intakes have been set during past low-flow sampling of the permanent monitor wells.

b) Low Flow Sampling Documentation: NJDEP's low flow purging and sampling guidance was posted on the NJDEP Site Remediation and Waste Management website on Oct. 5, 2004. Before that time, NJDEP required people performing low flow sampling to follow EPA guidance for low flow sampling, such as the March 16, 1998 U. S. EPA Region II Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling guidance document and/or the EPA Region I low-flow sampling guidance document. Like EPA, NJDEP generally has required anyone performing low flow sampling to submit to NJDEP a site-specific low flow sampling plan for review and approval prior to performing low flow sampling. This requirement was waived in this particular case due to the short deadline for the July 2004 RIR on the March 2004 NaOH spill to be submitted to NJDEP. However, IMTT did not provide NJDEP with any description of the low flow purging and sampling method that was used in the Aug. 3 and 4, 2004 low flow sampling event, to document how this sampling event was performed. Therefore the following additional information is requested:

- IMTT must inform NJDEP whether or not a flow through cell was used to monitor the low flow sampling field indicator parameters during this sampling event and must state the capacity of the flow through cell, if known.

- IMTT must complete copies of the attached NJDEP Field Instrument Calibration Data form for each day of low flow sampling using the samplers' field notes from the sampling event.

- IMTT must provide NJDEP with a listing of the pump intake setting in each of the monitor wells sampled in this sampling event.

c) Monitoring and Stabilization of Field Indicator Parameters: Table 12 indicates that, during the Aug. 3 and 4, 2004 low flow sampling event in the NaOH spill area, monitoring and stabilization of field indicator parameters was not performed in accordance with the USEPA low-flow ground water sampling protocols or NJDEP low flow sampling protocols. Deficiencies noted are the following:

- According to EPA low flow guidance, measurements of the indicator parameters such as temperature, pH, conductivity, dissolved oxygen (DO), turbidity, redox potential, flow rate and depth to water are supposed to be made every three to five minutes

during purging. Table 12 in the 8/04 RIR indicates that the intervals between measurements in this sampling round ranged between 4 and 15 minutes.

- According to EPA low flow guidance purging must continue, and sampling should not occur, until the indicator parameters have stabilized for three consecutive readings as follows:

  ± 0.1 pH unit for pH
  ± 3% for conductivity
  ±10 mv for redox potential
  ± 10% for DO and turbidity.

- According to Table 12:

  - pH did not stabilize during purging of monitor well Y6-MW-3 and Y1-MW-5. It also appears that pH was not stabilized within the appropriate range when purging of MW-23 was stopped. Since pH is a constituent of concern in this investigation, the failure to allow this parameter to stabilize would be considered to be a significant deficiency.

  - Turbidity was not stabilized in any of the wells prior to sampling. This is also significant because turbidity is a key indicator parameter when sampling for metals.

  - Dissolved oxygen was not stabilized in Y6-MW-1, Y6-MW-2, Y1-MW-7, MW-23, Y1-MW-46 or MW-47. DO was not stabilized at the end of the purge of Y6-MW-4.

  - Conductivity was not stabilized in Y6-MW-1, Y6-MW-2, Y6-MW-3, Y1-MW-5, Y6-MW-6, Y1-MW-7, MW-23, Y1, MW-46 or MW-47. Conductivity was not monitored during the purging of MW-25.

  - Redox potential was not monitored at all during this sampling round.

All future low flow sampling at IMTT sites must be performed in accordance with the current NJDEP low flow sampling guidance and an NJDEP-approved site-specific low flow sampling plan. All documentation required for low flow sampling pursuant to NJDEP's low-flow sampling guidance must be submitted to NJDEP along with the sampling results. All future ground water sampling for pH must be performed by the low-flow method in accordance with NJDEP's current low-flow sampling guidance and NJDEP laboratory certification requirements.

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IMTT/Weston Response:

It appears that this comment (a, b, and c) requests clarification and specific documentation concerning the previously conducted groundwater sampling events, and also states that low-flow sampling should be conducted in accordance with the NJDEP Low-Flow Purging and Sampling Guidance (posted 5 October 2004). This response globally addresses the a, b, and c portions of this NJDEP comment.

- A certified NJDEP laboratory was hired to conduct the groundwater monitoring events. At the time of the field events, the NJDEP low-flow guidance document was not available; therefore, the *EPA Region II Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling* guidance document was utilized. The contracted laboratory was instructed to utilize this guidance.

- The contracted certified NJDEP laboratory provided a letter of explanation to address the above referenced NJDEP comments, additional information requests, and/or concerns about the conducted low-flow sampling event conducted in August 2004 (Exhibit F).

- Future groundwater sampling events will be completed consistent with the NJDEP approved abbreviated RIWP (Attachment C under the 28 October 2005 cover letter) and under direct supervision of a Weston scientist to ensure strict adherence to the RIWP. The attached abbreviated RIWP includes low flow purging and sampling in accordance with the NJDEP *Low-Flow Purging and Sampling Guidance* (posted October 2004).

- IMTT and Weston believe that further discussion regarding the comparison of field screening data and groundwater analytical data is not appropriate or beneficial at this time.

- Regarding the consistency comment by the NJDEP, it appears as though the NJDEP is restating the concern about the depth of the pump intake. In its comment regarding consistency among results, Weston was referring to consistency between vertical profiling results, not vertical profiling results and the results of litmus paper tests.

NJDEP Comment:

8. Low Flow Sampling Documented in the June 2005 SIR: The information in Appendix B indicates that proper sampling technique was used in sampling monitor well Y1-MW-62. However, IMTT must complete a copy of the attached NJDEP Field Instrument Calibration Data form for the field instrumentation used during this sampling episode and inform NJDEP of the depth below ground surface at which the pump intake was set, in accordance with NJDEP's low flow sampling guidance. IMTT must sample monitor well Y1-MW-62 for pH by the low flow method with the pump intake set 2 ft. above the bottom of the well. The results of this sampling must be submitted to NJDEP for review.

IMTT/Weston Response:

This comment is similar in nature to Comment 7 above and 10c below.

- The contracted certified NJDEP laboratory provided a letter of explanation to address the above referenced NJDEP comments, additional information requests, and/or concerns about the conducted low-flow sampling event conducted in August 2004 (Exhibit F).

A confirmation round of groundwater sampling will be conducted at monitoring well Y1-MW-62. This well will be included in the October 2005 quarterly groundwater sampling event. For additional response, please see Comment 10c below.

NJDEP Comment:

9. Ground Water Vertical Profiling: IMTT must inform NJDEP which method in the NJDEP Alternative Ground Water Sampling Techniques Guide was used for the direct-push vertical ground water sampling and provide further details on this sampling. IMTT must also inform NJDEP whether or not this sampling was performed in the pre-existing soil boring holes or not.

IMTT/Weston Response:

Vertical profiling was performed at the request of the NJDEP and consistent with the *NJDEP Alternative Ground Water Sampling Techniques Guide* (1994) and with conversations between Weston and the NJDEP prior to sample collection. Groundwater vertical profiling was performed using AGWST 5.00 – Ground Water Sampling with the Use of a Small Diameter Direct Push Point (SDDPP). Groundwater vertical profiling was not performed in pre-existing soil borings. IMTT and Weston believe that no further action is necessary in response to this comment.

NJDEP Comment:

10. June 2005 SI for Sept. 2004 50% NaOH Spill:

a) Sampling Locations: As indicated on Fig. 4 in this document, of the ten soil borings/temporary wells installed for this SI, only three (Y1-GW-P4, Y1-GW-P2, approximately 45 ft. due west of the spill location, and Y1-GW-P5, approximately 70 ft. south-southeast of the spill location) were installed in directions that could be construed as being downgradient of the spill location. IMTT provided no explanation for this. (Please see Fig. 20 in the Aug. 2004 RIR for the March 2004 NaOH spill and the water table contour maps in the Nov. 1996 RIR for the site for ground water flow directions.) IMTT must provide NJDEP with their rationale for these boring and temporary well locations.

IMTT/Weston Response:

The purposes of the investigation were to: 1) characterize the area of the release; 2) determine if there were any impacts based on the release; and 3) to delineate any releases. A grid was established to accomplish the above objectives. The above objectives were achieved.

If the real-time data collected in the field indicated further investigation/delineation was warranted in any direction, additional delineation would have been performed. However, the sampling locations selected completed site characterization (including background conditions), ~~determined if there were any impacts from the release and completed delineation. IMTT and~~ Weston propose that no further investigation or comment is warranted in response to this comment. Additionally, please note that physical limitations of aboveground storage tanks (ASTs) and associated piping influenced several boring locations.

NJDEP Comment:

b) Boring Logs: It is impossible to determine from this report whether or not soil was tested for pH just on top of the meadow mat, as previous experience and the known properties of 50% NaOH would dictate. Neither Section 3.2.1.1 of the text, the boring logs in Appendix A, nor Table 1 indicates that this was done. In the boring logs, pH results are generally reported as pertaining to a five-foot soil interval. Accurate reporting of the sample depth interval must be reported as discussed in Comment 1 above.

IMTT/Weston Response:

IMTT and Weston agree that 50% NaOH has the physical properties of a DNAPL. As discussed earlier, soil pH was not a concern during the initial phase of the investigation (July telephone conversation – Gascoyne/Hrenda). As discussed and agreed upon between NJDEP, IMTT, and Weston during the 13 September 2005 meeting, the readings which were obtained from the field screening of soil were collected primarily for health and safety purposes and secondarily, as a field screening tool to guide the groundwater investigation.

Field screening of pH utilizing litmus paper for the above investigation was conducted on 5-foot intervals. No soil samples were collected for laboratory analyses. Also, as discussed during the referenced meeting, for future investigations field screening results will be recorded on a 6-inch selected interval rather than a 5-foot interval; pH readings will not be collected continuously.

IMTT and Weston propose no action is necessary regarding this comment.

NJDEP Comment:

c) Monitor Well Y1-MW-62: IMTT must submit to the NJDEP case team a copy of the NJDEP Well Record for this well. IMTT must also submit to NJDEP a copy of the geologist's log for this well. IMTT has recommended sealing this well. IMTT must sample this well for pH by the low flow method in accordance with NJDEP's low flow sampling guidance with the pump intake set approximately two ft. from the bottom of the

well. After reviewing the results of this sampling event, NJDEP will consider this recommendation.

IMTT/Weston Response:

This comment is similar in nature to Comment 8 above.

- A copy of the NJDEP Well Record is proved as Exhibit G.
- A copy of the field notes for the Geoprobe® location of this well is included as Exhibit H.
- The pump was set in the bottom 2-foot interval of the well based on the known physical properties of NaOH (Exhibit F).
- IMTT proposed to revisit the proposal of sealing well Y1-MW-62. As stated in Comment 8 above, a confirmation round of groundwater sampling will be conducted at monitoring well Y1-MW-62. Following the confirmatory round, assuming a pH reading below 8.5 standard units (SU), IMTT and Weston assume that the NJDEP will approve abandonment of this well. IMTT reserves the right to utilize this well as part of the Yard 1/Yard 6 investigation and/or potentially as part of the monitoring well network associated with the 04-03-29-0828-11 (March 2004) NaOH release.

NJDEP Comment:

d) Conclusions and Other Recommendations: IMTT concludes that the Sept. 2004 NaOH spill had no observable impact on the subsurface pH. This is possible, but the conclusion is premature. See Comment 1 above.

IMTT/Weston Response:

Weston believes the reference to Comment 1 above is the discussion of underground utilities and preferential pathways. If so, comment noted, see response to Comment 1. If not, additional clarification of this comment is requested.

NJDEP Comment:

11. Free Petroleum Product: The Monitoring Well Sampling Sheets in Appendix K of the 8/04 RIR indicate that petroleum product was observed in the following monitoring wells: Y6-MW-1, Y6-MW-2, Y6-MW-3, Y1-MW-5, Y1-MW-7, MW-23, MW-25 and Y1-MW-46. Petroleum product was also reported in the boring log of temporary wellpoint Y1-GW-P9, and an oily sheen was reported in the log of temporary wellpoint Y1-GW-P5 in the June 13, 2005 Final Site Investigation Report for the Sept. 2004 NaOH spill. Wells Y6-MW-1, Y6-MW-2, Y6-MW-3 are located adjacent to the Kill Van Kull. (Product thicknesses in monitoring wells were not reported on the sampling forms.) IMTT should therefore make the delineation of free product in the area of these wells and borings part of their

prioritization of Yard 6 (and adjacent Yard 1) in the free product investigation at the IMTT BI site.

IMTT/Weston Response:

IMTT will incorporate the delineation of free product in the area of these wells and borings as part of their prioritization of Yard 6 (and adjacent Yard 1) in the free product investigation at the IMTT BI site.

As part of the ongoing quarterly groundwater sampling events in relation to the NaOH release, free product observations and measurements will continue to be recorded on the field data sheet(s).

EXHIBIT A

P:\IMTT\GIS\MXD\10005ResultSummary\02479fig1.mxd

Legend

- Monitoring Well (MW) or Recovery Well (RW) Location
- Catch Basin or Grate
- Approximate Area of NaOH Release[(1)(2)]
- 36" Salt Main (Abandoned)
- 54" City Sewer (Abandoned/Sealed)
- Old Wooden Sewers (Abandoned/Removed)
- Old Wooden Sewer (Abandoned -1921 map)
- New Installation or Cleaned and Video Inspected

ASPHALT
MCC BLDG.
40'X42'
1162
1110
40'X3
Y1-MW-7
11.8
12.1
11.7
10
20
20.4
8.9
5
1709
60'X48'
1710
60'X48'
1708
60'X48'
1119
60'X48'
1707
60'X48'
1120
60'X48'
1706
60'X48'
1700
150'X48'
10.6
MW-23
CAUSTIC RACK
13.2
1121
60'X48'
1705
60'X48'
Y1-MW-62
MW-25
1124
60'X48'
1217
1218
1219
1222
1123
1220
CAUSTIC RACK
Y6-MW-3
Y6-MW-6
Y1-MW-5
Y6-MW-2
Y1-MW-46
13.0
Y6-MW-4
PIPES
11.1
Y1-MW-63
PIPE RACK
SCREEN CHAMBER
RW-C
21.1
SALT WATER PUMP HOUSE
RW-D
Y6-MW-1
10.1
MW-47
MW-48
10
Kill Van Kull

NOTES:
1. Release near ASTs 1119 & 1120 - March 2004
2. Release near ASTs 1705 & 1706 - September 2004

NaOH - Sodium Hydroxide

SCALE: 70 35 0 70 — 1 Inch = 70 Feet	TITLE: **SITE MAP** (Area of Sodium Hydroxide Releases) CAUSTIC SPILL REMEDIAL INVESTIGATION			DRAWN BY: S. POULTNEY; REVIEWED BY: L.CLIFFORD; PROJECT MANAGER: R.GASCOYNE; SCALE: 1" = 70'; DATE: November 2005
PROJECT: IMTT SODIUM HYDROXIDE RELEASE				N / W E / S
CLIENT NAME: IMTT - BAYONNE	WESTON SOLUTIONS	DRAWING NUMBER: 02479	FIGURE #: Exhibit A	

EXHIBIT B

SOILS

In Our Environment

Seventh Edition

Raymond W. Miller
Department of Plant, Soil, and Biometeorology
Utah State University

Roy L. Donahue
Professor Emeritus
Department of Crop and Soil Sciences
Michigan State University

Joyce U. Miller
Editorial Assistant

PRENTICE HALL
ENGLEWOOD CLIFFS, NJ 07632

These two examples suggest that even though a soil has a conductivity 4 dS m^{-1} and is not *termed* saline, it may have enough salt to lower the yields o tive plants.

11:2.3 Effects of Specific Ions

Exchangeable sodium in concentrations above about 15% (or SAR = 13) exerts effect on plant growth by dispersing the soil (Detail 11-1). As low as 10% e sodium in fine-textured (clayey) soils and 20% in sandier soils have caused disp age. Colloid dispersal makes the soil less permeable, or even impermeable, and form hard surface crusts when dry (Fig. 11-5).

Not all soils have dispersion problems at the same exchangeable sodium Montmorillonite clays are the most easily dispersed. Some clayey soils dispers 9–10% exchangeable sodium. Kaolinitic soils, however, may be quite stable to ev exchangeable sodium. In many Oxisols and Ultisols, the kaolinite–metal oxide cl

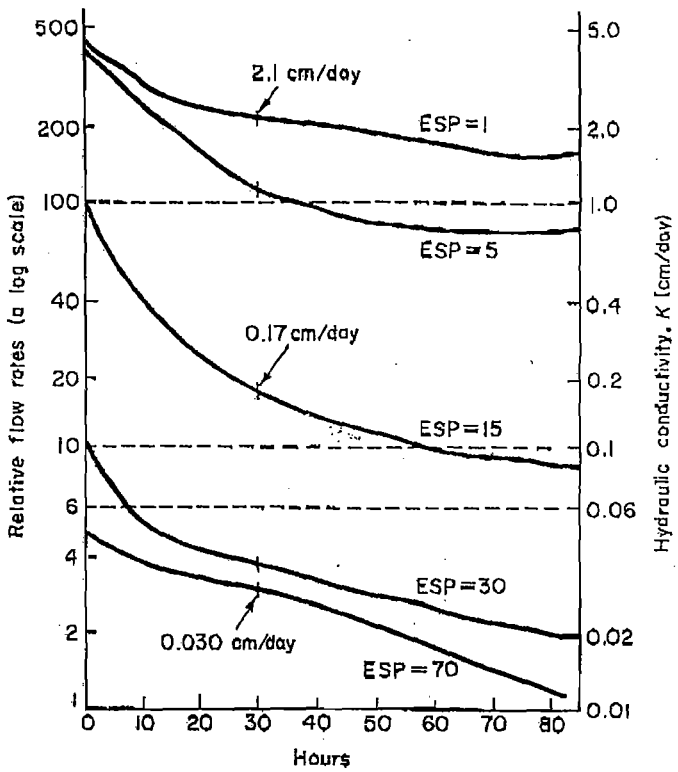

FIGURE 11-5 Example of the change in water flow (hydraulic conductivity) through a soil as influenced by the exchangeable sodium percentage. The curves are for the same soil. Each curve is for the soil with a different exchangeable sodium percentage. Note that *water flow in all soils decreases with time as clays swell.* The swelling reduces pore sizes. Also, flowing water carries soil particles that lodge in pores, further reducing flow through the soil. Percolation of water through soil with an ESP of only 5 is 47 times faster at the end of 30 hours flow than flow in that soil with ESP of 70 and is over 8 times faster than at an ESP of 15.

EXHIBIT C

P:/IMTT/GIS/MXD/10005ResultSummary/02391Summary_pH.mxd

Legend

- Approximate Plume Boundary (pH > 8.5 SU)
- Approximate Source Area Boundary (pH > 12 SU)
- Temporary Well Point Location
- Temporary Well Point Location (pH > 8.5)
- Vertical Profile Location
- Vertical Profile Location (pH > 8.5)
- Monitoring Well Location
- Monitoring Well Location (pH > 8.5 SU)
- Surficial Chrome Deposits (NJDEP)

Note:

-pH results posted are:

a) Temporary Well Points - Bluestone, March 2004

b) Temporary Well Points - Weston, July 2004

c) Groundwater Vertical Profile Sampling - Weston, July 2004 (12 to 14 Foot Sample Interval)

d) Monitoring Well Results from first round sampled (August 2004 - August 2005)

Y1-MW-7 pH = 6.19
11.8
11.7
1709 60'X48'
1710 60'X48'
1708 60'X48'
1707 60'X48'
1706 60'X48'
1705 60'X48'
1119 60'X48'
1120 60'X48'
1121 60'X48'
1124 60'X48'
HP-5 pH = 6.7
Y1-CAUS-5 pH = 12.8
Y1-CAUS-6 pH = 12.5
Y1-CAUS-1B pH = 12.4
CAUSTIC RACK
SB-25 pH = 6.3
MW-23 pH = 5.87
SB-21 pH = 6.5
SB-22 pH = 7
13.2
MW-25 pH = 12.54
Y1-CAUS-3 pH = 7.5
SB-19 pH = 13
SB-16 pH = 6.8
Y6-MW-3 pH = 6.58
HP-6 pH = 7
Y6-MW-6 pH = 6.62
1219
1220
11.7
Y1-MW-5 pH = 8.5
SB-14 pH = 7
SB-15 pH = 6.8
SB-11 pH = 7.1
HP-4 pH = 6.7
Y6-MW-2 pH = 6.54
HP-3 pH = 10.4
Y1-MW-46 pH = 9.48
13.0
Y6-MW-4 pH = 8.46
SB-1 pH = 7.4
SB-7 pH = 6.9
PIPE RACK
SB-9 pH = 6.7
PIPES
HP-2 pH = 6.8
SCREEN CHAMBER
MW-47 pH = 6.62
21.1
SALT WATER PUMP HOUSE
SB-2 pH = 6.8
Y6-MW-1 pH = 6.62
10.1
SB-3 pH = 7.2
HP-1 pH = 7.6
10

LEGEND:
30 0 30 60
1 Inch = 60 Feet

PROJECT: IMTT SODIUM HYDROXIDE RELEASE

CLIENT NAME: IMTT - BAYONNE

TITLE:
GENERALIZED PLUME / SOURCE BOUNDARY MAP
AS OF AUGUST 2004

CAUSTIC SPILL REMEDIAL INVESTIGATION

WESTON SOLUTIONS SM

DRAWING NUMBER: 02391

FIGURE #: Exhibit C

DRAWN BY: A.SALAZAR

REVIEWED BY: L.CLIFFORD

PROJECT MANAGER: R.GASCOYNE

SCALE: 1" = 60'

DATE: OCTOBER 2005

N W E S

EXHIBIT D

P:/IMTT/GIS/MXD/10005ResultSummary/02393TempWells.mxd

Legend:

- pH Isopleth Boundary
- pH Isopleth Boundary - Inferred
- Temporary Well Point Location
- Temporary Well Point Location (pH > 8.5 SU)
- Vertical Profile Location
- Vertical Profile Location (pH > 8.5 SU)
- Surficial Chrome Deposits (NJDEP)

Note:

-pH results posted are:

a) Temporary Well Points - Bluestone, March 2004

b) Temporary Well Points - Weston, July 2004

d) Groundwater Vertical Profile Sampling - Weston, July 2004 (12 to 14 Foot Sample Interval)

HP-5 (12-14') pH = 6.7

Y1-CAUS-5 pH = 12.8

Y1-CAUS-1B pH = 12.4

Y1-CAUS-3 pH = 7.5

Y1-CAUS-6 pH = 12.5

SB-25 pH = 6.3

SB-21 pH = 6.5

SB-22 pH = 7

SB-16 pH = 6.8

HP-6 (12-14') pH = 7

SB-19 pH = 13

SB-11 pH = 7.1

HP-4 (12-14') pH = 6.7

HP-3 (12-14') pH = 10.4

SB-15 pH = 6.8

SB-14 pH = 7

SB-1 pH = 7.4

SB-7 pH = 6.9

SB-9 pH = 6.7

HP-2 (12-14') pH = 6.8

SB-2 pH = 6.8

HP-1 (12-14') pH = 7.6

SB-3 pH = 7.2

12.5 9.5 8.5 7.5 10.5 11.5 6.5 10

11.8 12.1 11.7 20.4 13.2 13.0 10.1 11.7 21.1

CAUSTIC RACK

PIPE RACK

PIPES

SCREEN CHAMBER

SALT WATER PUMP HOUSE

1219 1220

LEGEND: 30 0 30 60 — 1 Inch = 60 Feet	TITLE: GENERALIZED pH ISOPLETH MAP TEMPORARY WELL POINTS - JULY 2004 CAUSTIC SPILL REMEDIAL INVESTIGATION		DRAWN BY: A.SALAZAR	N W E S
			REVIEWED BY: L.CLIFFORD	
PROJECT: IMTT SODIUM HYDROXIDE RELEASE			PROJECT MANAGER: R.GASCOYNE	
			SCALE: 1" = 60'	
CLIENT NAME: IMTT - BAYONNE	WESTON SOLUTIONS SM	DRAWING NUMBER: 02393	FIGURE #: Exhibit D (Figure 16)	DATE: OCTOBER 2005

P:/IMTT/GIS/MXD/10005ResultSummary/02394MW_Wells.mxd

Legend

- pH Isopleth Boundary
- pH Isopleth Boundary - Inferred
- Monitoring Well Location
- Monitoring Well Location (pH > 8.5 SU)
- Surficial Chrome Deposits (NJDEP)

Y1-MW-7 pH = 6.19
MW-23 pH = 5.87
MW-25 pH = 12.54
Y6-MW-3 pH = 6.58
Y6-MW-6 pH = 6.62
Y6-MW-2 pH = 6.54
Y6-MW-4 pH = 8.46
Y1-MW-5 pH = 8.5
Y1-MW-46 pH = 9.48
Y6-MW-1 pH = 6.62
MW-47 pH = 6.62

12.1 11.8 11.7 20.4 13.2 13.0 10.1 11.7 21.1 1219 1220

10 20 8.5 7.5 6.5 12.5 11.5 9.5 10.5

1709 60'X48' 1710 60'X48' 1708 60'X48' 1707 60'X48' 1706 60'X48' 1705 60'X48' 1124 60'X48' 1121 60'X48' 1130 60'X48' 1113 60'X48' 6206

CAUSTIC RACK PIPE RACK PIPE RACK PIPES SCREEN CHAMBER SALT WATER PUMP HOUSE

LEGEND: 30 0 30 60 — 1 Inch = 60 Feet	TITLE: GENERALIZED pH ISOPLETH MAP MONITORING WELLS - AUGUST 2004 CAUSTIC SPILL REMEDIAL INVESTIGATION			DRAWN BY: A.SALAZAR
				REVIEWED BY: L.CLIFFORD
PROJECT: IMTT SODIUM HYDROXIDE RELEASE				PROJECT MANAGER: R.GASCOYNE
				SCALE: 1" = 60'
CLIENT NAME: IMTT - BAYONNE	WESTON SOLUTIONS SM	DRAWING NUMBER: 02394	FIGURE #: Exhibit D (Figure 18)	DATE: OCTOBER 2005

N W E S

ATTACHMENT B

SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
MARCH 2004 SODIUM HYDROXIDE RELEASE
SPILL REPORT CASE NUMBER 04-03-29-0828-11
INTERNATIONAL-MATEX TANK TERMINALS/BAYONNE INDUSTRIES SITE
BAYONNE, NEW JERSEY

November 2005

Prepared for:

INTERNATIONAL-MATEX TANK TERMINALS
321 St. Charles Street
New Orleans, Louisiana 70130

Prepared by:

WESTON SOLUTIONS, INC.
205 Campus Drive
Edison, New Jersey 08837

Work Order No.: 12629.008.001.0004-13.0

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D	Monitoring Well Permit and Record
E	Form A Certification for Monitoring Well Y1-MW-63
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G	Recovery System: Previously Submitted Tables (June 2005 Technical Memorandum)

1.0 INTRODUCTION

On behalf of International-Matex Tank Terminals (IMTT), Weston Solutions, Inc. (Weston®) has prepared and is submitting this abbreviated Remedial Investigation Report (RIR). This report is a summary of the additional investigation/monitoring activities conducted since the submittal of the August 2004 RIR, which addressed the March 2004 sodium hydroxide (NaOH) release near aboveground storage tanks (ASTs) 1119 and 1120. An abbreviated RIR (data report) was agreed upon between the New Jersey Department of Environmental Protection Agency (NJDEP), IMTT, and Weston during a 13 September 2005 meeting to allow for an expedited review due to IMTT's desire to remain proactive. Some of the contents of this abbreviated RIR were summarized as part of the 20 June 2005 Technical Memorandum submitted to the NJDEP. The purpose of the memorandum was to provide to NJDEP a current project status and a brief summary of the events conducted since the August 2004 RIR.

1.1 Overview

Two documented releases of NaOH have recently occurred at the site. The first release occurred in March 2004 and was the larger of the two releases: 50,722 gallons of 50 percent caustic solution near ASTs 1119 and 1120 (impacts to a portion of Yards 1 and 6). An August 2004 RIR addressing the March 2004 release was submitted to the NJDEP. This report summarized the first two phases of remedial investigation and the interim remedial measure implemented. The second release occurred in September 2004 where less than 100 gallons of NaOH was released near ASTs 1705 & 1706 (Yard 1). A June 2005 Final Site Investigation Report (SIR) was submitted, which proposed that the remedial activity (immediate excavation of impacted soil) in response to this release was successful. The June 2005 SIR summarized the associated field investigation to support this proposal and requested No Further Action (NFA) determination for the September 2004 release. Based on the proposal of the June 2005 SIR, additional remedial activities have not been conducted in association with the September 2004 release. While the data from this report is utilized, this release is not discussed further in this report.

The NJDEP recently issued a comment letter via email on 17 August 2005 (herein referenced as the date of the comment letter) to address the August 2004 RIR, the June 2005 SIR, and the June 2005 Technical Memorandum. The NJDEP comment letter requested additional clarification/information for the events summarized in the referenced RIR and SIR and additional investigation/monitoring for both NaOH releases. The requested clarification/information is being provided by Weston on behalf of IMTT to the NJDEP under a cover letter dated 28 October 2005 to which this abbreviated RIR is an attachment. The plan for proposed additional investigation/monitoring as requested by the NJDEP is summarized in an abbreviated Remedial Investigation Workplan (RIWP), which is also an attachment to the same letter.

In accordance with the recommendations in the August 2004 RIR and June 2005 Technical Memorandum and prior to the issuance of the NJDEP 17 August 2005 comment letter, various field activities have been conducted. These activities were conducted to remain consistent with IMTT's proactive approach. Since the August 2004 RIR, monitoring well MW-25 was

converted to a recovery well and a quarterly groundwater monitoring program was implemented (January 2005). In May 2005, the NJDEP and Weston discussed, during a telephone conversation, the results of the baseline (August 2004) and the first two quarterly groundwater sampling events (January and April 2005), and the success of the recovery operations. The data presented at the time indicated that suspension of recovery operations with continued monitoring was appropriate. In June 2005, pumping was terminated on a trial basis. The groundwater results of the quarterly sampling program indicated that limited additional delineation was required to the southeast of monitoring wells Y1-MW-46 and Y1-MW-5. Delineation efforts were conducted in July 2005, followed by the third quarter of groundwater monitoring (August 2005). Delineation efforts included a supplemental groundwater investigation (July 2005). Currently, groundwater is not being recovered from recovery wells Y1-RW-5 and MW-25 and the fourth quarterly groundwater sampling event is scheduled for October 2005. This abbreviated RIR provides a summary of the January, April, and August 2005 quarterly groundwater sampling events and the delineation efforts conducted in July 2005.

1.2 Facility and Site Location and Description

The IMTT facility is located on the eastern side of Bayonne, New Jersey, in an area commonly referred to as Constable Hook. The IMTT facility street address is 250 East 22nd Street, Bayonne, NJ. The southern end of the facility and site borders a portion of the northern shore of the Kill van Kull, a tidal strait connecting Newark Bay with Upper New York Bay. A Facility Location Map is provided as Figure 1. The area consists primarily of heavy industrial properties. Contamination not related to the NaOH releases is present in and around the site. Additionally, several Known Contaminated Sites (KCS) are in the vicinity of the facility.

The property consists of approximately 200+ acres, much of which is reclaimed land, with a mixed fill composed of layers of construction debris, cinders, clay, etc., overlying the original marine tidal marsh deposits found below the majority of the site. There are over 250 aboveground bulk storage tanks within the IMTT facility, with capacities ranging from 10,000 gallons to 10.4 million gallons, configured into "yards" based on tank number series and, generally, by the products stored in the respective tank series. The bulk storage tanks are within containment dikes. A marine vessel transfer area featuring five active piers is along the Kill van Kull waterfront, and numerous buildings housing offices, utilities, maintenance and general operations field stations, and in-plant warehousing are located within the IMTT facility. Most of the facility has been extensively refurbished since the 1983 acquisition by the present ownership.

The area of the NaOH releases (site) is limited to the southern portion of the facility (Figure 2). The impact area of the March 2004 NaOH release is approximately 2.0 acres. This area of the facility where the March 2004 release has impacted groundwater is a portion of what has historically been referred to as Yard 1 and Yard 6. As part of the ENSR RI Report, ENSR provided a detailed summary of historic operations and environmental conditions in Yard 1 and Yard 6. Since this information has been previously submitted, this historical information is not repeated herein.

Geographically, the facility is generally flat with one topographic feature: the elevated outcropping that substantially forms the base of Yard 5. All stormwater on the facility is collected by drainage through sewers to the facility's water treatment system. All treated water discharges through a single New Jersey Pollutant Discharge Elimination System (NJPDES) permitted and monitored outfall into the Kill van Kull.

1.3 Project Goal

The ultimate project goal consists of obtaining an NFA letter from the NJDEP for the release associated with ASTs 1119 & 1120, as well as concurrence from NJDEP that no further investigation/action is warranted in associated with the release at ASTs 1705 & 1706, in the most expedited manner possible.

1.4 Remedial Investigation Objectives

The objectives for the recently conducted remedial investigations/monitoring associated with March 2004 release are as follows:

- Delineation (via temporary well points) of pH levels detected in groundwater at levels greater than 8.5 standard units (SU) southeast of wells Y1-MW-46 and Y1-MW-5.
- Installation of a permanent monitoring well, following completion of delineation activities mentioned above.
- Continued monitoring of pH levels in groundwater on a quarterly basis.

The June 2005 SIR proposed NFA for the September 2004 release; therefore, that release was neither the focus nor part of the focus of the recent remedial investigation/monitoring.

Additional specific remedial objectives are included in the RIWP, which is being submitted under the same cover as this document. The RIWP consists primarily of determining if receptors have been impacted and if preferential pathways exist beneath the site.

2.0 SITE REMEDIAL INVESTIGATION AND GROUNDWATER MONITORING

A supplemental groundwater investigation was conducted and a quarterly groundwater monitoring program was implemented associated with the March 2004 NaOH release since the submittal of the August 2004 RIR. The fieldwork was performed by Weston as proposed in the August 2004 RIR and June 2005 Technical Memorandum. The purpose of the supplemental groundwater investigation was to:

- further delineate the NaOH plume associated with the March 2004 release southeast of wells Y1-MW-46 and Y1-MW-5, and
- monitor pH levels in groundwater over time (for later evaluation of a monitored natural attenuation [MNA] remedy) via a quarterly groundwater monitoring program.

A discussion of the methodologies, results and conclusions is provided below.

2.1 SUPPLEMENTAL GROUNDWATER INVESTIGATION

2.1.1 Field Screening Program and Stratigraphic Investigation of Soil

Field activities associated with this portion of the investigation were conducted from 13 July to 14 July 2005. Fourteen borings were completed for the purpose of field screening and stratigraphic logging of soil, followed by the collection of groundwater grab samples (Section 2.1.2). Soil boring logs, which include field screening results (pH and photoionization detector [PID] readings), are provided in Appendix A. A table summarizing field efforts (e.g., boring identifiers [IDs], boring depths, field screening results) has been prepared and is submitted as Table 1.

Rationale and Technical Approach

The approach developed consisted of establishing an approximate 100-foot-by-200-foot grid in the area southeast of wells Y1-MW-46 and Y1-MW-5. Soil borings were ultimately placed based on available access, with regard to the presence of structures, underground and/or overhead utilities/piping. Boring locations are depicted on Figure 3.

Continuous soil samples were collected for field screening and lithological logging from surface to the top of the meadow mat unit. The data collected was utilized as a field screening tool for the collection of groundwater grab samples (Section 2.1.2) and in order to provide adequate worker safety. The field screening program was designed to collect pertinent data on subsurface site conditions, and make real-time field decisions regarding following phases of the investigation (e.g., groundwater grab sample and monitoring well locations). A stratigraphic investigation was performed in conjunction with the field screening program. The intent of the

stratigraphic investigation was to define the vertical limits of the upper stratigraphic units (fill and meadow mat) and to identify potential contaminant migration pathways (e.g., sand stringer).

The borings were drilled by East Coast Drilling, Inc. (ECDI) of Moorestown, New Jersey, under the direction of Weston personnel. A truck-mounted Geoprobe® was used to drill the soil borings. The sampling or drilling equipment coming in contact with the soil was decontaminated before and after each sample location or sample interval. Soil samples for field screening and lithologic logging were obtained using Geoprobe® acetate sleeves. At each boring location, the acetate sleeve was removed from the Macro-Core® and provided to Weston by ECDI. Sample intervals were 4 feet in length and collected continuously until the meadow mat unit was encountered. Field screening/logging efforts included the collection of:

- Continuous lithological data;
- pH readings via litmus paper, once every 4 feet beginning as soon as moist soils were encountered. The first pH reading was collected from the 4-to-8 foot sample interval; and
- PID readings, approximately every foot of recovered material.

These results were used to determine appropriate personnel protection levels and as a tool to guide the supplemental groundwater investigation. No other soil testing was performed.

Each borehole was abandoned following the collection of a groundwater grab sample (Section 2.1.2). The boreholes were backfilled with bentonite and finished to grade either with bentonite (unpaved areas) or asphalt (paved areas). The soil cuttings were temporarily stored on site in 55-gallon steel drums for later off-site disposal.

Results

The results of this phase of the investigation indicate that the meadow mat confining layer beneath the site is continuous. The meadow mat was typically encountered between 11.75 and 15.75 feet below ground surface (bgs); the average depth observed was 14.41 feet bgs. The site is overlain by fill material and no visible sign of chromium ore processing residue or notable migration pathway (e.g., sand stringer) was observed in the subsurface soils at the site.

The pH field screening results (ranging from 7 to 8 SU) were comparatively consistent throughout the 14 borings (37 sample intervals). One of the 37 sample intervals indicated a pH reading of 9, greater than the maximum range of the Groundwater Quality Standard of 8.5 SU, and three of the 37 sample intervals indicated a pH reading ranging between 8 and 9 SU, as summarized below:

Boring ID:	Sample Depth: (feet bgs)	pH Reading: (SU)
Y1-GW-P15	4 – 8	9
Y1-GW-P16	4 – 8	8 – 9*
Y1-GW-P18	4 – 8	8 – 9*
	8 – 12	

* - An exact or estimated pH could not be deciphered from the litmus paper; therefore, a range was provided.

2.1.2 Temporary Well Point Investigation

Field activities during this phase of investigation were conducted in conjunction with the field screening program and stratigraphic investigation conducted from 13 July through 14 July 2005. Temporary well points were installed at each of the 14 borings completed (Figure 3), from which groundwater grab samples were collected. The pH results from the groundwater grab samples were used to define the southeastern portion of the NaOH plume, and to define the extent of the pH contamination above 8.5 SU. A table summarizing field efforts (e.g., boring IDs, boring depths, pH groundwater results) has been prepared and is submitted as Table 1.

Rationale and Technical Approach

A supplemental groundwater investigation was performed to determine the extent of the NaOH plume and the appropriate location of an additional permanent monitoring well. To accomplish this task, methods consistent with the NJDEP *Alternative Ground Water Sampling Techniques Guide* (AGWST; July 1994) were used. Groundwater sampling was performed using AGWST 4.00 – Groundwater Sampling with the use of a Passively Placed Narrow Diameter Point (PPNDP). Specifically, at each grid node where a soil boring was advanced, a temporary well point was installed and a groundwater grab sample was collected for pH analysis.

The temporary well points were installed using a Geoprobe® rig. The borehole was advanced to the top of the meadow mat unit (Section 2.1.1). A one-inch polyvinyl chloride (PVC) well screen and casing were installed in the borehole. Prior to collecting the analytical samples, water was purged from the temporary well points utilizing dedicated tubing and a check valve. The tubing in-take was set within the last two feet of temporary well points. Pre-purge, post-purge and post-sample field parameter readings (e.g., temperature, dissolved oxygen) were collected (Appendix B). A minimum of three well volumes were removed from each well point. The samples were analyzed immediately in the field by a representative of Severn Trent Laboratories, New Jersey Certification No. 12028. No analysis was performed on the samples other than the field parameter reading associated with purging and pH analysis. No quality assurance/quality control (QA/QC) samples were collected and/or prepared for analysis since pH analyzed in the field and sampling equipment is dedicated/disposable.

Temporary well points remained in the ground less than 48 hours and were completed at depths less than the depth requiring a permit or variance from NJDEP. At each location, temporary well points were removed and the borehole was abandoned as described in Section 2.1.1.

Results

The pH groundwater results indicate that the pH plume has been delineated southeast of wells Y1-MW-46 and Y1-MW-5. The approximate extent of the impacted area is shown on Figure 4. Historic (August 2004 RIR) and recent (July 2005 supplemental groundwater investigation and, for the monitoring wells, the most recent event sampled) pH groundwater results were used to construct this figure. Additionally, the pH results from the July 2005 investigation identified the area for the installation of an additional groundwater monitoring well (Section 2.1.3).

Table 1 includes a summary of the pH analytical results. Figure 3 depicts the temporary well locations and associated pH analytical results.

2.1.3 Monitoring Well Installation

Rationale and Technical Approach

One surficial monitoring well (well Y1-MW-63) was installed and developed on 27 July 2005 (Figure 3). The well location was determined by the results of the pH results from the July 2005 groundwater investigation, as well as, the available site data, existing monitoring well locations, and groundwater data collected from previous groundwater investigations.

The monitoring well was installed using an 8-inch-outside-diameter (6.75-inch-inside-diameter) hollow-stem auger rig. Well construction materials consisted of 2-inch-diameter, schedule-40 PVC well screen and riser pipe. The monitoring well was constructed with 0.010-inch (machine-slotted) well screen. The well screen was approximately 10 feet in length. The well was set at the upper limits of the meadow mat unit, 13 feet bgs. The well screen was placed to straddle the water table in the surficial well at the time of installation, factoring in the tidal influences and seasonal water level fluctuations at the site. The filter pack (Morie #0) was extended to an elevation approximately 1 foot above the top of the well screen. A cement-bentonite grout mixture was placed atop the sand pack and extended to approximately ground surface. A flush-mounted steel casing with cover and locking mechanism was set into the cement/bentonite slurry and a concrete pad was constructed. The well was completed with a watertight flange cover and well lock. The monitoring well boring log is provided as Appendix C. The well permit and well record is provided in Appendix D.

Following installation, the well was developed with a submersible pump utilizing the over-pumping method until a turbid-free discharge was obtained. The well was developed using a 2-inch diameter submersible pump and dedicated polyethylene tubing. The pump intake was raised and lowered across the entire length of the well screen, and was turned off and on at variable rates to cause a surge effect. The Form A Certification is provided as Appendix E.

All soil cuttings and development water were temporarily stored on site in 55-gallon drums for later off-site disposal.

Results

The newly installed well was included as part of the August 2005 quarterly groundwater sampling event. Activities and results associated with this event are discussed in Section 2.2 of this report.

2.2 QUARTERLY GROUNDWATER MONITORING

The quarterly groundwater monitoring program was implemented in January 2005. Prior to preparation of this report, four groundwater sampling events were conducted: August 2004, January 2005, April 2005, and August 2005. The August 2004 groundwater sampling event was discussed in the August 2004 RIR and is considered the baseline event. This event is referenced as Round 1 on the figure (Figure 8) referred to in this section. The January, April, and August 2005 events are considered quarterly groundwater sampling event (Quarter 1, Quarter 2, and Quarter 3) and are referenced as Round 2, Round 3, and Round 4 on the figure referred to in this section (Figure 8).

Rationale and Technical Approach

The sampling events discussed in this report were conducted as part of a quarterly groundwater monitoring program to satisfy the NJDEP requirement of eight total rounds of monitoring data for attenuation analysis. This report summarizes the first three quarterly groundwater sampling events. One round of groundwater samples was collected for each of the conducted events. The table below is a summary of the sampling events: sample dates and wells sampled for each event.

	Round 2 Quarter 1 11 January 2005	Round 3 Quarter 2 21 April 2005	Round 4 Quarter 3 17 August 2005
MW-23	X	X	X
MW-25	X	X	X
MW-47	X	X	X
MW-48	--	--	X
Y1-MW-5	X	X	X
Y1-MW-7	X	--	X
Y1-MW-43	X	X	X
Y1-MW-63	NI	NI	X
Y6-MW-1	X	X	--
Y6-MW-2	X	X	--
Y6-MW-3	X	X	X
Y6-MW-4	X	X	X
Y6-MW-6	X	X	X

Notes:
X – Sampled as part of the groundwater sampling event
-- - Not Sampled
NI – not installed

Groundwater samples were collected by Aqua Pro-Tech Laboratories (APL), New Jersey Certification No. 07010, utilizing low-flow purging and sampling techniques in accordance with *Low Flow Purging and Sampling Guidance* (NJDEP, December 2003) and *Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures* (EPA, 1996). Wells were equipped with dedicated tubing connected to a bladder pump. The pump was set with its intake within the last two feet of the wells.

The pump was connected to the dedicated tubing, which was connected to a 250 milliliter flow-through measurement cell (holding the pH, conductivity, temperature, turbidity, dissolved oxygen [DO], and redox potential probes). Measurements were collected at predetermined time intervals (every 10 minutes for the January 2005 event and 5 minutes for the April and August 2005 event) until an equilibrium condition was established. The down-hole non-dedicated sampling equipment was decontaminated between each use. Field data were recorded on APL's standard groundwater sample field data sheets. Copies of the field data sheets have been provided as Appendix F. Sampling purge water was temporarily stored on site in 55-gallon steel drums for later off-site disposal.

Once equilibrium was established, the pH probe was used to immediately analyze the groundwater sample in the field by personnel certified by the NJDEP Office of Quality Assurance. No QA/QC samples were collected and/or prepared for analysis since pH is a field analysis (field duplicate and trip blanks) and sampling equipment is dedicated/disposable (field blank).

Results

The pH groundwater analytical results are discussed below by event. Isopleth maps are included as Figure 5, Figure 6, and Figure 7 for the January 2005, April 2005, and August 2005 quarterly groundwater sampling events, respectively. A comprehensive table including the pH results for these events and the August 2004 event is provided as Table 2. Additionally, pH results are depicted on the isopleth maps.

January 2005 Event

Eleven monitoring wells were sampled during this event. Readings of pH ranged from 7.15 SU to 12.82 SU. Readings from three well locations exceeded the NJDEP maximum range criteria of 8.5 SU. The table below summarizes the exceedances:

Monitoring Well Location:	pH Result: *(SU)*
MW-25	12.82
Y1-MW-5	11.87
Y1-MW-46	10.59

April 2005 Event

Ten monitoring wells were sampled during this event. Readings of pH ranged from 7.21 SU to 10.18 SU. Readings from three well locations exceeded the NJDEP maximum range criteria of 8.5 SU. The table below summarizes the exceedances:

Monitoring Well Location:	pH Result: *(SU)*
MW-25	9.6
Y1-MW-5	9.64
Y1-MW-46	10.18

August 2005 Event

Eleven monitoring wells were sampled during this event. Readings of pH ranged from 6.4 SU to 12.01 SU. Readings from four well locations exceeded the NJDEP maximum range criteria of 8.5 SU. The table below summarizes the exceedances:

Monitoring Well Location:	pH Result: *(SU)*
MW-25	9.37
MW-47	9.76
Y1-MW-5	12.01
Y1-MW-46	10.65

2.3 RECOVERY SYSTEM (INTERIM REMEDIAL MEASURE)

With the exception of infrequent downtime associated with operations and maintenance (O&M) procedures, recovery operations were occurring during a majority of the interim period (from April 2004 through June 2005). As reported in the June 2005 Technical Memorandum, as of April 2005, approximately 269,700 gallons of NaOH-contaminated groundwater had been removed as part of recovery operations. Previously submitted tables (June 2005 Technical Memorandum) providing a summary of the recovery operations regarding volumetric measurements and summary of the percent caustic measurements of the recovered material are included as Appendix G. The percent caustic measurements, combined with pH level measurements, are appropriate and adequate indicators of source removal efficiency.

In May 2005, the NJDEP and Weston discussed the results of the baseline (August 2004) and the first two quarterly groundwater sampling events (January and April 2005), and the success of the recovery operations. During this conversation it was agreed that the pH data from the April 2005 quarterly event indicated that suspension of recovery operations with continued monitoring was appropriate on an interim basis. In June 2005, pumping was terminated (on a trial basis) and as of October 2005 still is suspended.

3.0 CONCLUSIONS AND RECOMMENDATAIONS

The objectives for the recently conducted remedial investigations/monitoring associated with March 2004 release were:

- To delineate pH levels detected in groundwater at levels greater than 8.5 SU southeast of wells Y1-MW-46 and Y1-MW-5.
- To install a permanent monitoring well, following completion of delineation activities mentioned above.
- To continue monitoring pH levels in groundwater on a quarterly basis.

The results of this investigation indicated:

- pH levels greater than 8.5 SU southeast of wells Y1-MW-46 and Y1-MW-5 have been delineated by the 14 groundwater grab samples collected from the 14 temporary well points completed as part of this supplemental groundwater investigation.
- The newly installed well Y1-MW-63 will monitor the delineated boundary established southeast of the referenced monitoring wells during the July 2005 investigation.
- pH levels greater than 8.5 SU appear to be limited to monitoring wells MW-25, Y1-MW-5, and Y1-MW-46. Levels of pH were consistently detected at levels greater than 8.5 SU at these well locations for the three conducted quarterly groundwater sampling events.
- In addition to the above exceedances, pH was detected at a level greater than 8.5 SU during the August 2005 event at well MW-47, indicating a potential for NaOH migration towards the Kill van Kull.

The main objective of this phase of investigation was to delineate pH levels greater than 8.5 SU southeast of the above-referenced monitoring wells. This was achieved. A secondary objective was to implement a quarterly groundwater monitoring program to monitor pH levels over a two-year period to evaluate to the remedial option of MNA under non-pumping conditions. The quarterly monitoring program has been implemented and pH levels are being monitored. At a minimum, four additional groundwater sampling events will be conducted. If pH levels are detected below 8.5 SU for two consecutive quarters at the monitoring wells being sampled, a proposal will be submitted to the NJDEP requesting no further monitoring of pH in groundwater in this investigation area.

In conjunction with the RIR, an RIWP is being submitted as an attachment to this document. The RIWP proposes an investigation of potential preferential pathways caused by the

underground lines/piping (e.g., potential bedding material surrounding underground pipelines) running beneath the area of investigation.

At this point in time, based on the results submitted as part of this RIR and the objectives of the recent investigation being met, no additional recommendations are being made. Following the implementation of the referenced RIWP, the data collected as part of that investigation, as well as historic, quarterly groundwater, and recent data, and the effects of the pumping system will be evaluated. The evaluation will be included as part of the regulatory report to follow the completion of the field work outlined in the referenced RIWP. Additionally, the report to follow will include recommendations and/or actions to bring the site closer to the project goal of receiving an NFA determination for the NaOH release.

4.0 REFERENCES

NJDEP. July 1994. *Alternative Ground Water Sampling Techniques Guide.*

NJDEP. June 1997. *Guidance for the Submission and Use of Data in GIS compatible Formats Pursuant to Technical Requirements for Site Remediation.*

NJDEP. December 2003. *Low Flow Purging and Sampling Guidance.*

NJDEP. 17 August 2005. NJDEP Comment Letter.

NJDEP. July 2005. Chapter 26E: *Technical Requirements for Site Remediation.*

NJDEP. August 2005. *Field Sampling Procedures Manual.*

Weston. August 2004. *Final Remedial Investigation Report Sodium Hydroxide Release Spill Report Case Number 04-03-29-0828-11 International Matex Tank and Terminals/Bayonne Industries Sites, Bayonne, New Jersey.*

Weston. June 2005. *Final Site Investigation Report Spill Report Case Number 04-09-15-1047-20 Sodium Hydroxide Release – Tanks 1705 and 1706 International Matex Tank and Terminals/Bayonne Industries Sites, Bayonne, New Jersey.*

Weston. June 2005. *Technical Memorandum – Remedial Activities, Completion Status and Proposed Path Forward.*

BAYONNE INDUSTRIES, INC.

250 EAST 22ND ST. P.O. BOX 67 BAYONNE, NEW JERSEY 07002

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September 26, 2001

Mr. Michael S. Kenney, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of State Case Management
401 East State Street, CN 028
Trenton, New Jersey 08625-0028

RECEIVED

Re: Bayonne Industries, Inc., City of Bayonne, Hudson County, New Jersey
Technical Modifications to the Platty Kill Canal, Hot Spot Delineation

Dear Mr. Kenney:

The March 2001 estimate of contaminated sediment in the Platty Kill Canal of 7350 cubic yards has been increased to 7488 cubic yards. The increase in volume is due primarily to incorporation of arsenic and lead concentrations in the sediment. A drawing presenting these findings is attached for your review.

Four copies of the revised map and summary table of the sludge analysis are enclosed for your use and distribution to the NJDEP case team and Mr. Walters, Case Manager for ExxonMobil. If this final draft version is acceptable, we will incorporate it into the Remedial Action Work Plan to be developed for the Platty Kill Canal.

Should you have any questions, please feel free to contact me.

Sincerely yours,

Mr. George M. Bress PE
Project Manager

Encl.

cc: Mr. Rusty Walker, IMTT
Dr. Robert C. Weaver, IMTT
Mr. R. Fisette, IMTT (w/o attachments)
Mr. R. Scerbo, ExxonMobil
Mr. A. Cozzi, Bluestone

TABLE 1: FACTOR TOTAL FOR SLUDGE SAMPLES COLLECTED FROM THE PLATTY KILL CANAL BAYONNE INDUSTRIES, INC., BAYONNE, NEW JERSEY

Sample ID	PKCSED17A	PKCSED17B	PKCSED17C	PKCSED19A	PKCSED19B	PKCSED19C	PKCSED21A	PKCSED21B	PKCSED21C	NJDEP
Depth (ft.)	0 - 5	5 - 10	10 - 15	0 - 5	5 - 10	10 - 15	0 - 5	5 - 10	10 - 15	
Sampling Date	06/06/96	06/06/96	06/06/96	06/06/96	06/06/96	06/06/96	06/06/96	06/06/96	06/06/96	
METALS (MG/KG)	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	NRDCSCC
Arsenic	30 1.5	128 6.4	194 9.7	45 2.2	54 2.7	81 4	126 6.3	82 4.1	167 8.4	20
Lead	554 0	2,020 3.7	2,860 4.5	798 1.3	844 1.4	1,120 1.9	1,860 3.1	1,860 1.8	1,740 2.9	600
VOLATILES (UG/KG)	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	IGWSCC
Chlorobenzene	6,000 *6*	ND	ND	ND	ND	ND	ND	ND	ND	1,000
Total Xylenes	4,300	190,000 *2.8*	120,000 *1.8*	ND	12,000	220,000 *3.3*	4,600	150,000 *2.2*	150,000 *2.2*	67,000
SEMI-VOLATILES (UG/KG)										IGWSCC
Diethylphthalate	9,000	790,000 *16*	4,200	ND	ND	9,900	ND	ND	ND	50,000
Naphthalene	5,400	190,000 *1.9*	54,000	ND	10,000	260,000 *2.6*	69,000	90,000	61,000	100,000
FACTOR TOTAL	***7.5***	***31***	***16***	***3.5***	***4.1***	***12***	***9.4***	***8.1***	***14***	

Sample ID	PKCSED23A	PKCSED23B	PKCSED23C	PKCSED25A	PKCSED25B	PKCSED25C	PKCSED27A	PKCSED27B	PKCSED27C	
Depth (ft.)	0 - 5	5 - 10	10 - 15	0 - 5	5 - 10	10 - 15	0 - 5	5 - 10	10 - 15	
Sampling Date	06/06/96	06/06/96	06/06/96	06/06/96	06/06/96		06/07/96	06/07/96	06/07/96	
METALS (MG/KG)	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	NRDCSCC
Arsenic	104 *1.5*	123 6.2	250 12.5	629 31.5	100 5	NA	170 8.5	131 6.6	282 14.1	20
Lead	2,580 4.3	1,320 2.2	2,800 4.7	11,600 1.9	4,860 8.1	NA	3,780 6.3	1,670 2.8	3,020 5	600
VOLATILES (UG/KG)	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	Concent. Fact.	IGWSCC
Chlorobenzene	7,700 *7.7*	ND	ND	4,200 *4.2*	ND	NA	8,300 *8.3*	ND	ND	1,000
Total Xylenes	20,000	500,000 *7.5*	230,000 *3.4*	ND	ND	NA	25,000	490,000 *7.3*	330,000 *4.9*	67,000
SEMI-VOLATILES (UG/KG)										IGWSCC
Naphthalene	11,000	70,000	70,000	ND	ND	NA	28,000	220,000 *2.2*	160,000 *1.6*	100,000
Acenaphthene	6,800	13,000	10,000	28,000	110,000 *1.1*	NA	14,000	36,000	ND	100,000
Fluorene	9,900	38,000	46,000	ND	ND	NA	25,000	110,000 *1.1*	130,000 *1.3*	100,000
FACTOR TOTAL	***14***	***16***	***21***	***38***	***14***		***23***	***20***	***27***	

TABLE 1: FACTOR TOTAL FOR SLUDGE SAMPLES COLLECTED FROM THE PLATTY KILL CANAL BAYONNE INDUSTRIES, INC., BAYONNE, NEW JERSEY

Sample ID	PKCSED01A		PKCSED01B		PKCSED01C	PKCSED06A	PKCSED06B		PKCSED06C	PKCSED08A		PKCSED08B		PKCSED08C	NJDEP
Depth (ft.)	0 - 3		3 - 6			0 - 4.5	4.5 - 9			0 - 3.25		3.25 - 6.5			
Sampling Date	10/21/94		10/21/94			10/20/94	10/20/94			10/20/94		10/20/94			
METALS (MG/KG)	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**NRDCSCC**
Arsenic	324	*16*	145	7.3	NA	12.2	37	1.9	NA	24	1.2	55	2.7	NA	**20**
Lead	4,700	7.8	1,300	2.2	NA	164	521		NA	351		741	1.2	NA	**600**
VOLATILES (UG/KG)	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**Concent.**	**Fact.**	**Concent.**	**Fact.**	**Concent.**	**IGWSCC**
Chlorobenzene	13,000	*13*	65,000	*65*	NA	ND	ND		NA	ND		140		NA	**1,000**
Benzene	3,300	*3.3*	28,000	*28*	NA	14	2,700	*2.7*	NA	ND		17		NA	**1,000**
Total Xylenes	6,600		81,000	*1.2*	NA	17	98,000	*1.5*	NA	33		27		NA	**67,000**
SEMI-VOLATILES (UG/KG)															**IGWSCC**
Naphthalene	210,000	*2.1*	100,000	*1*	NA	770	66,000		NA	120		2,400		NA	**100,000**
FACTOR TOTAL		***42***		***105***		***0***		***6.1***			***1.2***		***3.9***		

NOTES

ND : Compound was not detected
NP : No Proposed Cleanup level available
NA : Not Analyzed
: Parameters are above the NJDEP Soil Cleanup Criteria
NRDCSC: Non Residential Direct Contact Soil Cleanup Criteria
IGWSCC: Impact to Ground Water Soil Cleanup Criteria.
* Concentration factors were calculated by dividing the concentration of a specific compound exceeding the NJDEP Criteria by the corresponding criteria.
All factors exceeding the NJDEP IGWSCC or NRDSCC for As or Pb were added to obtain the FACTOR TOTAL.

M. Denny

State of New Jersey

James E. McGreevey
Governor

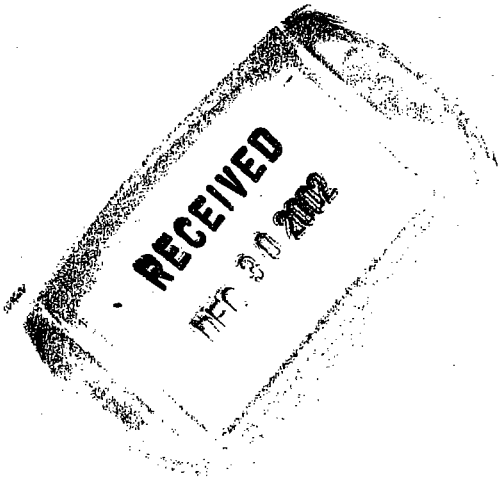
Department of Environmental Protection

Division of Water Quality
P.O. Box 029 Trenton, NJ 08625-0029
Phone: (609) 292-4860
Fax: (609) 984-7938

Bradley M. Campbell
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

DEC 30 2002



George M. Bress, P.E.
IMTT-Bayonne
250 E 22nd St
Bayonne, NJ 07002

Re: Draft Surface Water Renewal Permit Action
Category: B -Industrial Wastewater
NJPDES Permit No. NJ0002089
IMTT-BAYONNE
Bayonne City, Hudson County

Dear Permittee:

Enclosed is a **draft** New Jersey Pollutant Discharge Elimination System (NJPDES) permit action identified above which has been issued in accordance with N.J.A.C. 7:14A.

Notice of this draft permit action will appear in the *Jersey Journal* and in the December 24, 2002 *DEP Bulletin*. The *DEP Bulletin* is available on the internet at http://www.state.nj.us/dep/bulletin or by contacting the DEP Document Distribution Center at (609) 777-4398. In accordance with N.J.A.C. 7:14A-15.10(c)1i, the public comment period will close thirty days after its appearance in the newspaper.

As detailed in the *DEP Bulletin* and aforementioned newspaper written comments or a request that the Department hold a non-adversarial public hearing on the draft document must be submitted in writing to Pilar Patterseon, Chief, Bureau of Point Source Permitting Region 2, P.O. Box 029, Trenton, NJ 08625 by the close of the public comment period. All persons, including the applicant, who believe that any condition of this draft document is inappropriate or that the Department's tentative decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The NJDEP will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice of the NJDEP's final decision to issue, revoke, or redraft the document.

If you have questions or comments regarding the draft action, please contact Robert Hall at (609) 292-4860.

Sincerely,

Melisse Carasia Auriti

Melisse Carasia Auriti, Supervisor
Bureau of Point Source Permitting - Region 2

Enclosures
c: Permit Distribution List
Masterfile #: 14888; PI #: 46319

CCG000034

Draw down of

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Point Source Permitting Region 2

PUBLIC NOTICE

Notice is hereby given that the New Jersey Department of Environmental Protection (NJDEP) proposes to renew the New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Surface Water (DSW) Permit NJ0002089 in accordance with N.J.A.C. 7:14A-1 et seq., and by authority of the Water Pollution Control Act at N.J.S.A. 58:10A-1 et seq., for the following discharge:

Applicant or Permittee	Facility
IMTT-BAYONNE 250 EAST 22ND ST Bayonne, NJ 07002	IMTT-BAYONNE 250 EAST 22ND ST Bayonne, Hudson County, NJ 07002-0000

The existing facility discharges treated stormwater, wastewater resulting from groundwater remediations, and industrial wastewater associated with the storage and distribution of chemicals and refined petroleum products into the Kill Van Kull, classified as SE-3 waters. The Kill Van Kull is located within the Newark Bay/Kill Van Kull/Upper NY Bay Basin and is a tributary to the New York Bay. The existing facility has a long-term average flow value of 0.593 million gallons per day (MGD) for DSN 001 and 0.21 MGD for DSN 002. This action proposes effluent limitations based on a flow of 2.18 MGD for DSN 001.

This draft renewal permit includes authorization to discharge additional treated groundwater from the Platty Kill Pond/Canal through DSN 002. Outfall DSN 002 is being relocated from the north end of the Platty Kill Canal to the Kill Van Kull.

Modification provisions as cited in the permit may be initiated in accordance with the provisions set forth in Part IV and upon written notification from the Department.

A draft NJPDES permit renewal has been prepared for this facility based on the administrative record filed at the NJDEP, 401 East State Street, Trenton, New Jersey 08625. Copies of the draft document are obtainable, for a nominal charge, and the administrative record is available for inspection by appointment only, Monday through Friday. If you are interested in scheduling an appointment or requesting specific information regarding the draft document, contact Robert Hall of the Bureau of Point Source Permitting Region 2 at (609) 292-4860.

Written comments or a request that the Department hold a non-adversarial public hearing on the draft document must be submitted in writing to Pilar Patterson, Chief, or Attention: Comments on Public Notice NJ0002089, Bureau of Point Source Permitting Region 2, P.O. Box 029, Trenton, NJ 08625 by the close of the public comment period, which closes thirty calendar days after publication of this notice in the newspaper. All persons, including the applicant, who believe that any condition of this draft document is inappropriate or that the Department's decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The NJDEP will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice of the Department's permit decision.

Public Notice of Proposed Permit Actions (Division of Water Quality)

Permit: • *Name* • *NJPDES No.* • *Type*	*Facility Location:* • *Address* • *County*	*NJDEP:* • *Case manager* • *Bureau* • *Phone No.*	*Receiving Discharge:* • *Stream or Formation or POTW* • *Stream Classification* • *Watershed*	*Executive Summary*
IMTT-BAYONNE NJ0002089 DSW Major	250 E 22ND ST Bayonne, NJ , 07002 Hudson	Robert Hall Bureau of Point Source Permitting Region 2 (609) 292-4860	DSN 001: Kill Van Kull/Upper NY Bay DSN 002: Kill Van Kull DSN 001: SE- 2 DSN 002: SE- 3 Newark Bay/Kill Van Kull/Upper NY Bay	This action is for the renewal of a NJPDES permit to discharge an average of 0.593 million gallons per day (MGD) for DSN 001 and 0.21 MGD for DSN 002 of treated industrial wastewater, stormwater, and remediated groundwater to the Kill Van Kull. The renewal permit will allow discharge of treated stormwater and groundwater from the Platty Kill Pond and Platty Kill Canal. Outfall DSN 002 is being relocated from the north end of the Platty Kill Canal to the Kill Van Kull.

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Point Source Permitting Region 2

FACT SHEET

Masterfile #: 14888 **PI #:** 46319

This fact sheet sets forth the principle facts and the significant factual, legal, and policy considerations examined during preparation of the draft permit. This action has been prepared in accordance with the New Jersey Water Pollution Control Act and its implementing regulations at N.J.A.C. 7:14A-1 et seq. - The New Jersey Pollutant Discharge Elimination System.

PERMIT ACTION: Surface Water Renewal Permit Action

The permittee has applied for a New Jersey Pollutant Discharge Elimination System (NJPDES) Surface Water Renewal Permit Action through an application dated 08/06/2002.

The permittee has requested the following modifications to the permit:

1. Authorization to discharge remediated stormwater and groundwater from the Platty Kill Pond and Platty Kill Canal at the Westside Wastewater Treatment Plant in order to remove the water for closure of the pond and canal.

2. Relocation of the discharge from DSN 002 from the north end of the Platty Kill Canal to the Kill Van Kull.

   The Department has deemed the existing limitations as sufficient for the new receiving water. New monitoring is being imposed for metals to determine if any new limitations for those metals are needed.

1 Name and Address of the Applicant:

IMTT-BAYONNE
250 E 22ND ST
Bayonne, NJ, 07002

2 Name and Address of the Facility/Site:

IMTT-BAYONNE
250 E 22ND ST
Bayonne, Hudson County, NJ, 07002-0000

3 Discharge Location Information:

A copy of the appropriate section of a USGS quadrangle map indicating the location of the facility and discharge point(s) is included towards the end of this Fact Sheet.

Outfall Designator: DSN 001

General Information		Watershed Information	
Receiving Water:	Kill Van Kull/Upper New York Bay	Downstream Confluences:	New York Bay
Via :	Outfall pipe	Receiving River Basin:	Newark Bay/Kill Van Kull/Upper NY Bay
Classification:	SE-2	WMA (a):	07
Latitude:	40° 39' 17.2"	Watershed:	Newark Bay/Kill Van Kull/Upper NY Bay
Longitude:	74° 05' 12.3"	Subwatershed:	Upper NY Bay / Kill Van Kull
County:	Hudson	HUC 14 (c):	02030104010030
Municipality:	Bayonne		
Outfall Description			
Outfall Configuration:	Submerged pipe	Submerged Pipe Characteristics:	Not Applicable

Outfall Designator: DSN 002 (Relocation)

General Information		Watershed Information	
Receiving Water:	Kill Van Kull	Downstream Confluences:	New York Bay
Via :	Outfall pipe (proposed relocation)	Receiving River Basin:	Newark Bay/Kill Van Kull/Upper NY Bay
Classification:	SE-3	WMA (a):	07
Latitude:	40° 39' 04"	Watershed:	Newark Bay/Kill Van Kull/Upper NY Bay
Longitude:	74° 06' 26"	Subwatershed:	Upper NY Bay / Kill Van Kull
County:	Hudson	HUC 14 (c):	02030104010030
Municipality:	Bayonne		
Outfall Description			
Outfall Configuration:	non-submerged pipe	Submerged Pipe Characteristics:	Not Applicable

Footnotes:

(a) WMA = Watershed Management Area
(b) The 75 percentile flow is defined as the flow which is exceeded 75 percent of the time for the appropriate "period of record" as determined by the United States Geological Survey (USGS).
(c) HUC 14 = 14 digit Hydrologic Unit Code
(d) Please refer to Section 6 for the specific stream design low flow values utilized in parameter limitation calculations.

4 Facility Description:

The facility is classified as a major discharger by the Department of Environmental Protection (NJDEP) in accordance with the United States Environmental Protection Agency (EPA) rating criteria. Based on available data, the facility's estimated combined long-term average flow is 0.593 million gallons per day (MGD) for DSN 001 and 0.21 MGD for DSN 002. The permitted flows in the Northeast Water Quality Management Plan are 2.18 MGD for DSN 001 and 0.65 for DSN 002.

IMTT-Bayonne is a bulk liquid storage and distribution facility of chemicals and refined petroleum products. The facility maintains 642 aboveground storage tanks, ranging in capacity from 10,000 barrels to 248,00 barrels. IMTT-Bayonne's complex consists of four separate and distinct areas, known as Eastside, Westside, Chemical North, and Chemical South. The Eastside consist of the IMTT-Bayonne-BX facility (Area A) and the Exxon/Mobil Oil Facility (Area B). The Westside consists of the Bayonne Industries facility (Area C). Chemical North is currently a vacant area of the complex known as Area D with no industrial activity and no stormwater collection. The Chemical South part of the complex is known as Area E.

Wastewater from Areas A and B are treated in the Eastside Wastewater Treatment Plant (EWTP) and discharged to the Upper New York Harbor via Outfall DSN 001. Wastewater consists of equipment washwater, tank roof draw-off, decanted tank water, wastewater from tank bottoms, laboratory wastewater, stormwater runoff, remediated groundwater associated with sitewide cleanup measures, groundwater infiltration, and tank integrity test water. Exxon/Mobil is currently installing recovery wells and free oil recovery systems and remediating contaminated groundwater in Areas A and B. Wastewater from the Exxon/Mobil Lube Oil Facility (Area B) is pretreated in a separate treatment plant before being treated at the EWTP. Stormwater runoff from the IMTT-BC facility (Area E) is also treated at the EWTP in order to alleviate severe flooding at the IMTT-BC facility. During periods of low flow, treated effluent from the facility's Zimpro Wastewater Treatment Plant (ZWTP) is transferred on a batch process to the EWTP.

Currently, stormwater from the Bayonne Industries facility (Area C) and boiler blowdown is treated at the Westside Wastewater Treatment Plant (WWTP) and is discharged to the Kill Van Kull via the Platty Kill Canal. The outfall pipe, identified as DSN 002, is being moved directly to the Kill Van Kull as part of a remediation and closure project of the Platty Kill Pond and the Platty Kill Canal. Therefore, this permit will allow discharge of an additional flow of 0.014 MGD to 0.028 MGD as a maximum of treated groundwater and stormwater from the pond and canal. Once the pond is closed, it will be fitted with a cap; and stormwater runoff from this cap will be treated at the WWTP. High strength wastewater generated from operations in Area A and Area C is pre-treated in a Sequencing Batch Reactor (SBR) and then treated at the WWTP.

The EWTP consists of an oil-water separator, sand filters, and activated carbon units. The Exxon/Mobil Wastewater Treatment plant used to pre-treat wastewater from area B consists of an API separator, a dissolved air flotation unit, and storage tanks for excess stormwater. The WWTP consists of an oil-water separator, an equalization lagoon, and a granular activated carbon unit. The ZWTP consists of an oil-water separator, flow-equalization unit, pH adjustment unit, biological treatment unit augmented with powdered activated carbon, a clarifier, and a granular activated carbon unit.

Flow diagrams of the facility's wastewater treatment plants are included near the end of the fact sheet.

5 Type and Quantity of the Wastes or Pollutants:

The Permit Summary Table near the end of this fact sheet contains a summary of the quantity and quality of pollutants treated and discharged from the facility and the proposed effluent limitations. Effluent data was obtained from the facility's Monitoring Report Forms for the time period specified in the table and the application submitted by the applicant. Influent data was obtained from well data submitted by the applicant.

6 Summary of Permit Conditions:

The existing and proposed effluent limitations and other pertinent information regarding the draft permit are described below:

A. Basis for Effluent Limitations and Permit Conditions - General:

The effluent limitations and permit conditions in this permit have been developed to ensure compliance with the following:

1. NJPDES Regulations (N.J.A.C. 7:14A),
2. New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B),
3. 1998 "Identification and Setting of Priorities for Section 303(d) Water Quality Limited Waters in New Jersey" report,
4. Interstate Environmental Commission (N.J.A.C. 7:9B-1.5(b)2),
5. Wastewater Discharge Requirements (N.J.A.C. 7:9-5.1 et seq.),
6. Secondary Treatment Standards (40 CFR Part 133, N.J.A.C. 7:14A-12.2 and -12.3),
7. Existing permit limitations in accordance with N.J.A.C. 7:14A-13.19 and 40 CFR 122.44 (antibacksliding requirements),
8. Permit limitations in accordance with N.J.A.C. 7:9B-1.5(d) (antidegradation requirements),
9. Statewide Water Quality Management Planning Rules (N.J.A.C. 7:15),
10. Technology Based Treatment Requirements or Effluent Limitation Guidelines Requirements (N.J.A.C. 7:14A-13.2 to 13.4),
11. USEPA Region II Memorandum, Permit Development Guidance: Cooling Water – Surface Water Runoff, December 8, 1978 (John S. Frisco, Chief, Toxic and Inorganic Waste Section, USEPA, Region II)
12. USEPA Region II Memorandum, EPA Region II Revised Guidance for Cooling Water and Storm Water Runoff, September 5, 1991 (John S. Kushwara, Acting Chief, Water Permits and Compliance Branch, USEPA, Region II)

Expression of all effluent limitations is in accordance with N.J.A.C. 7:14A-13.14 and 13.15.

Whole effluent toxicity limitations are expressed as a minimum as a percent.

Loading limitations (kg/day or g/day) for DSN 001 are calculated by multiplying the Northeast Water Quality Management Plan (NEWQMP) flow of 2.18 million gallons per day (MGD) by the conversion factor of 3.785 (L/gal) and the appropriate concentration limitation (mg/L or µg/L). The existing permit used a flow of 3.024 MGD, which is above the 2.18 MGD flow in the NEWQMP, and is therefore inconsistent with the Bureau of Watershed Management regulations. Therefore, the loading limitations have been recalculated with the correct flow of 2.18 MGD.

Limitations for DSN 002 are based on concentration only, as the discharge is only stormwater, which causes variable flows. Therefore, loading limitations are not appropriate for this discharge.

B. Basis and Derivation for Effluent Limitations and Monitoring Requirements- Specific:

DSN 001

1. Flow: This permit does not include a numerical limitation for flow. Monitoring conditions are applied pursuant to N.J.A.C. 7:14A-13.13.

2. Total Organic Carbon (TOC): The concentration limitations are being carried forward from the existing permit in accordance with N.J.A.C. 7:14A-13.19. These concentration limits are a monthly average of 42 mg/L and a weekly average of 63 mg/L. The limitations for TOC were originally based on Best Professional Judgement (BPJ) using plant performance; and the ratio of 5-day Biological Oxygen Demand (BOD5) data and TOC data of 1:1.4, which allowed the imposition of the TOC limit versus a BOD5 limit.

   The Department has been made aware that the loading limitations established in the existing permit were calculated with a flow of 3.024 MGD. This flow is above the allowable flow listed in the NEWQMP and is therefore inconsistent. Therefore, the loading limitations have been recalculated with the correct flow of 2.18 MGD listed in the NEWQMP. Also, the Department realized an incorrect conversion factor was used in the previous calculation, giving an incorrect limitation. Upon using the correct conversion factor of 3.785, multiplied by the NEWQMP flow of 2.18 MGD and the concentration values, the resulting loading limitations are a monthly average of 347 kg/d and a weekly average of 520 kg/d.

   The monthly monitoring frequency is being retained from the existing permit.

3. Total Suspended Solids (TSS): The concentration limitations are based on the Interstate Environmental Commission (IEC) regulations. The monitor only requirement for monthly average and the daily maximum concentration limit of 50 mg/L are being carried forward in accordance with N.J.A.C. 7:14A-13.19. The monitor only requirement for loading is also being carried forward from the existing permit, as is the monthly monitoring frequency.

4. pH: The effluent limitations of 6.0 s.u. as a minimum and 9.0 s.u. as a maximum are being carried forward from the existing permit in accordance with N.J.A.C. 7:14A-13.19. The quarterly monitoring frequency is being changed to a monthly frequency in consideration of N.J.A.C. 7:14A-14.2(a) – Table 14-2, which recommends a frequency of twice per month for major industrial facilities.

5. Petroleum Hydrocarbons: The effluent limitations are based on N.J.A.C. 7:14A-12.8(c) and are being carried forward from the existing permit in accordance with N.J.A.C 7:14A-13.19. The concentration limitations are 10 mg/L for a monthly average and 15 mg/L for a daily maximum. Monitoring only for monthly average and daily maximum for loading is also required. The weekly monitoring frequency is also being carried forward from the existing permit.

6. Arsenic, Total Recoverable: On November 10, 1998, the Department issued a modification to the existing permit to change the effluent limitations for Arsenic. This was a result of a Mixing Zone Analysis report, dated June 10, 1999, that was submitted to the Department. The concentration limitations from this modification are being carried forward in this permit renewal in accordance with N.J.A.C. 7:14A-13.19. The concentration limitations are 71 ug/L for a monthly average and 93 ug/L for a daily maximum.

   The Department has been made aware that the loading limitations established in the existing permit were calculated with a flow of 3.024 MGD. This flow is above the allowable flow listed in the NEWQMP and is therefore inconsistent. Therefore, the loading limitations have been recalculated with the correct flow of 2.18

MGD listed in the NEWQMP. Also, the Department realized an incorrect conversion factor was used in the previous calculation, giving an incorrect limitation. The revised loading limitations are 0.59 kg/d for a monthly average and 0.88 kg/d for a daily maximum.

The weekly monitoring frequency is being reduced to monthly based on consistent compliance with the effluent limitations and N.J.A.C. 7:14A-14.2.

7. Wastewater Characterization Report (WCR) data: Data submitted on WCR's by the permittee dated from 8/00 to 5/02 were reviewed by the Department. All parameters were either at non-detectable levels or non-significant levels. The monitoring requirement for the Semi-Annual WCR is being carried forward in order to insure that all pollutants remain at consistently low levels.

8. Whole Effluent Toxicity (WET):

Section 101(a) of the Clean Water Act (CWA) establishes a national policy of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters. In addition, section 101(a)(3) of the CWA and the State's Surface Water Quality Standards (SWQS) at N.J.A.C. 7:9B-1.5(a)3 state that the discharge of toxic pollutants in toxic amounts is prohibited. Further, 40 CFR 122.44(d) and N.J.A.C. 7:14A-13.6(a) require that where the Department determines using site-specific WET data that a discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS, the permitting authority must establish effluent limits for WET. In order to satisfy the requirements of the CWA, the State's SWQS and the NJPDES Regulations, the need for a water quality based effluent limitation (WQBEL) for WET was evaluated for this discharge.

WQBELs for chronic WET were calculated in accordance with N.J.A.C. 7:14A-13.6 and USEPA's "Technical Support Document for Water Quality Based Toxics Control (EPA/505/2-90-001), March 1991" (TSD).

These limits are developed using an acute dilution factor (Df_a) of 300 and a chronic dilution factor (Df_c) of 300. These values are based on the report entitled "Critical Instream Waste Concentration Study for Exxon Corporation, U.S.A., Bayonne, New Jersey", dated "July 1990", submitted on behalf of IMTT-Bayonne by IT Corporation; and on the correspondence dated 7/31/98 to Jim Grob of DEP from George M. Bress of IMTT-Bayonne regarding reevaluation of the 1991 critical instream waste concentration determination of new dilution factor.

The Df_a and Df_c were then used to determine acute and chronic Wasteload Allocations (WLAs) consistent with N.J.A.C. 7:14A-13.5, using a steady state model, as specified in section 5.4.1 of the TSD. Consistent with recommendations in the TSD, values of 0.3 acute toxic unit (TU_a) and 1.0 chronic toxic unit (TU_c) were used to interpret the narrative water quality criteria for WET contained at N.J.A.C. 7:9B-1.14(c) (see Response to Comments 13-74 through 13-89, 29 NJR 1861, (May 5, 1997)). The acute WLA (WLA_a) was translated to equivalent chronic toxic units (WLA_{ac}), to enable comparison of acute and chronic WET limits, by multiplying the WLA_a by a default acute to chronic ratio (ACR) of 10.

The acute and chronic WLAs are then converted to an acute Long Term Average (LTA_{ac}) of 288.9749 and a chronic LTA (LTA_c) of 71.0228, using a default coefficient of variation (CV) of 0.6, and multipliers of 0.321 and 0.527 for the acute and chronic LTAs respectively. Those multipliers are based on the 99th percentile consistent with Response to Comments 13-74 through 13-89, 29 NJR 1861 and are found on Page 102 of the TSD. The resultant long term average values were evaluated and the more protective (e.g. lower) value selected for translation into a daily maximum WET limit using the applicable 99th percentile multiplier, as found on Page 103 of the TSD.

The daily maximum chronic WET limit of 71.0228 TU_cs was then converted to a permit limitation expressed as an IC25. The resultant limitation is an IC25 = 0.2 % effluent. However, because the resultant chronic limitation is less than 10% and the equivalent LC50 is less than 50%, **the minimum state standard acute limit of LC50 ≥ 50% becomes the applicable limit**, consistent with Response to Comments 13-74 through 13-89, 29 NJR 1861.

The monitoring frequency for acute WET of semi-annually is being carried forward in accordance with N.J.A.C. 7:14A-13.19

The test species method to be used for acute testing shall be the *Mysidopsis bahia* 96 hour definitive test. Such selection is based on the saline characteristics of the receiving stream, the existing permit, N.J.A.C. 7:9B-1.5 and N.J.A.C. 7:18, the Regulations Governing the Certification of Laboratories and Environmental Measurements (N.J.A.C. 7:18).

The monitor only requirement for chronic WET is being removed from the permit since a calculation by the Department has shown the acute WET test to be the more sensitive test method for the facility's discharge.

The Toxicity Reduction Implementation Requirements (TRIR) are included in accordance with N.J.A.C. 7:14A-13.17(a), 7:14A-6.2(a)5 and recommendations in Section 5.8 of the TSD. The requirements are necessary to ensure compliance with the applicable WET toxicity limitation and to expedite compliance with the WET toxicity limitation should exceedances of the WET limitation occur. As included in section B.1 of the TRIR requirements, the initial step of the TRIR is to identify the variability of the effluent toxicity and to verify that a consistent toxicity problem does in fact exist.

Effluent samples for conducting WET testing are to be collected after the last treatment step, consistent with the collection location for all other parameters.

DSN 002

1. Flow: This permit does not include a numerical limitation for flow. Monitoring conditions are applied pursuant to N.J.A.C. 7:14A-13.13.

2. Total Organic Carbon: The concentration limitation of 100 ug/L as a daily maximum is being carried forward from the existing permit in accordance with N.J.A.C. 7:14A-13.19. The monitor only requirement for monthly average and the monthly monitoring are also being carried forward.

3. Total Suspended Solids: The daily maximum concentration limit of 50 ug/L is being carried forward from the existing permit in accordance with N.J.A.C. 7:14A-13.19. The monitor only requirement for monthly average and the monthly monitoring frequency are also being carried forward.

4. Petroleum Hydrocarbons: The effluent limitations are based on N.J.A.C. 7:14A-12.8(c) and are being carried forward from the existing permit in accordance with N.J.A.C 7:14A-13.19. The concentration limitations are 10 mg/L for a monthly average and 15 mg/L for a daily maximum. The monthly monitoring frequency is also being carried forward from the existing permit.

5. pH: The effluent limitations of 6.0 s.u. as a minimum and 9.0 s.u. as a maximum are being carried forward from the existing permit in accordance with N.J.A.C. 7:14A-13.19. The quarterly monitoring frequency is being changed to a monthly frequency in consideration of N.J.A.C. 7:14A-14.2(a) – Table 14-2, which recommends a frequency of twice per month for major industrial facilities and in consideration that a new source of wastewater will be added to this discharge.

6. Whole Effluent Toxicity (WET): The Department has no WET data available for DSN 002 and is therefore including a monitoring only requirement in this permit for acute WET so that the information to determine if a WQBEL is necessary can be obtained. A semi-annual monitoring frequency is being imposed for acute WET.

   The test species method to be used for acute testing shall be the *Mysidopsis bahia* 96 hour definitive test. Such selection is based on the saline characteristics of the receiving stream, the existing permit, N.J.A.C. 7:9B-1.5 and N.J.A.C. 7:18, the Regulations Governing the Certification of Laboratories and Environmental Measurements (N.J.A.C. 7:18).

7. Benzene, Total Recoverable Copper, Total Recoverable Iron, Total Recoverable Lead, and Total Recoverable Mercury: The above listed parameters are shown at significant levels on the May 1995 Aqueous Sample Results Summary for the Platty Kill Pond water (Table 4-5 and 4-7 of Permit Application). They are also significantly above the SWQS at N.J.A.C. 7.9B-1.14, with the exception of iron for a SWQS does not currently exist. Therefore, the Department is imposing a monitor only requirement on a quarterly basis to determine if a limitation is needed. If deemed necessary, the permit may be reopened to include any needed limitations. Results shall be reported on the quarterly Wastewater Characterization Reports (WCRs).

8. Priority Pollutant Scan: In order to analyze the effluent after the additional flow from the Platty Kill Pond and Platty Kill Canal is added to the waste stream, the Department is imposing a priority pollutant scan for DSN 002. Sampling shall be performed on volatile organics, base/neutrals, metals, acids, and pesticides. This scan shall be done between EDP + 4 years and EDP + 4.5 years, with the results submitted to the Department on the semi-annual WCR on or before EDP + 4.5 years + 25 days.

D. Effluent Monitoring Frequencies and Sample Types:

Monitoring frequencies and sample types are in accordance with N.J.A.C. 7:14A-14, uMRess specified otherwise in the permit. In accordance with N.J.A.C. 7:14A-14.2, the permittee may submit a written request for a modification of the permit to decrease monitoring frequencies for non-limited parameters listed in Part III if site specific conditions indicate the applicability of such a modification.

E. Recommended Quantitation Levels Policy (RQLs):

The Department developed the RQLs to insure that useful data is provided to the Department in order to characterize the discharger's effluent. The Department recommends that the permittee achieve detection levels that are at least as sensitive as the RQLs found in Part III. The Department has determined that the quantitation levels listed therein can be reliably and consistently achieved by most state certified laboratories for most of the listed pollutants using the appropriate procedures specified in 40 CFR Part 136. FAILURE TO ATTAIN A QUANTITATION LEVEL AS SENSITIVE AS A LISTED RQL IS NOT A VIOLATION OF THE PERMIT, BUT DOES TRIGGER SOME ADDITIONAL REPORTING REQUIREMENTS FOR THE PERMITTEE AS SPECIFIED IN PART IV OF THE PERMIT.

F. Reporting Requirements:

All data requested to be submitted by this permit shall be reported on the Discharge Monitoring Reports (DMRs) and Waste Characterization Reports (WCR) as appropriate and submitted to the Department as required by N.J.A.C. 7:14A-6.8(a).

G. General conditions:

In accordance with N.J.A.C. 7:14A-2.3 and 6.1(b), specific rules from the New Jersey Administrative Code have been incorporated either expressly or by reference in Part I and Part II.

H. Outfall Tag:

Pursuant to N.J.A.C. 7:14A-6.2(a)9, the permittee shall notify the Department that a tag to mark the location of the relocated outfall pipe (DSN 002) has been installed on or before the start of discharge.

I. Operator Classification Number:

The operator classification requirement is no longer included in the permit. To obtain or determine the appropriate licensed operator classification for the treatment works specified, the permittee shall contact the Bureau of Engineering North at (609) 292-6894 to determine the appropriate licensed operator classification for the treatment works specified.

J. Flow Related Conditions:

The numerical value of 2.18 MGD for DSN 001 and 0.65 MGD for DSN 002 used for flow as permit conditions are consistent with the flows listed in the Northeast Water Quality Management Plan (NEWQMP). The additional flow of between 0.014 and 0.028 MGD for the remediation of the Platty Kill Pond is not addressed in the NEWQMP, but is considered consistent on the basis that remedial actions are beneficial to the environment and that the remediation will not cause the permittee to exceed the flow value of 0.65 MGD for DSN 002 allowed by the NEWQMP.

K. Residuals/Sludge Conditions:

Analysis of the industrial sludge generated from the oil/water separators for the parameters found on Table III-C-1 and Table III-D-I of Part III is required pursuant to N.J.A.C. 7:14C-1.9(b) of the Sludge Quality Assurance Regulations. The frequency of monitoring is dependent on the amount of sludge produced. Since the amount of sludge generated from each oil/water separator is less than 290 dry metric tons per year the frequency of monitoring is annually. Analysis of these sludge sources is not required during those calendar years where sludge is not removed for ultimate management or when the sludge(s) are managed as a hazardous waste.

All treatment works with a discharge regulated under N.J.A.C. 7:14A must have permits that implement applicable technical standards for residuals management. Generally, the permit issued to the treatment works generating the residual will include applicable residual quality monitoring as well as other general conditions required by N.J.A.C. 7:14A-6. In addition, the permit may include conditions related to any aspect of residual management developed on a case-by-case basis where the Department determines that such conditions are necessary to protect public health and the environment.

The permit may also include conditions establishing requirements for treatment works that send residual to other facilities for final use or disposal. Thus, **ALL** residual preparers (that is, generators as well as persons who manage the residual) are required to submit basic information concerning their residual use and disposal practices. This basic information is submitted by compliance with the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C).

The documents listed below have been used to establish the residual conditions of the Draft Permit:

a. United States Environmental Protection Agency "Standards for the use or disposal of sewage sludge" (40 CFR Part 503),
b. "New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A),
c. Technical Manual for Residuals Management, May 1998,
d. USEPA Part 503 Implementation Guidance, EPA 833-R-95-001, October 1995. This document is a compilation of federal requirements, management practices and EPA recommended permit conditions for sewage sludge use and management practices,
e. USEPA A Plain English Guide to the EPA Part 503 Biosolids Rule, EPA/832/R-93/003, September 1994,
f. New Jersey "Statewide Sludge Management Plan", November 1987 and
g. New Jersey "Sludge Quality Assurance Regulations" (SQAR), N.J.A.C. 7:14C.

7 Variances to Permit Conditions:

Procedures for modifying a water quality based effluent limitation are found in the New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B-1.8 and 1.9. If a water quality based effluent limitation has been proposed in this permit action, the permittee may request a modification of that limitation in accordance with N.J.A.C. 7:14A-11.7(a). This request must be made prior to the close of the public comment period. The information that must be submitted to support the request may be obtained from the Division of Watershed Management at (609) 633-7020.

8 Description of Procedures for Reaching a Final Decision on the Draft Action:

Please refer to the procedures described in the public notice that is part of the draft permit. The public notice for these actions are published in the Jersey Journal and in the DEP Bulletin.

9 Contact Information

If you have any questions regarding this permit action, please contact Robert Hall, Bureau of Point Source Permitting – Region 2 at (609) 292-4860.

10 Permit Summary Table DSN 001

Unless otherwise noted all effluent limitations are expressed as maximums.

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA (1)	APPLICATION DATA (2)	EXISTING LIMITS	FINAL LIMITS	MONITORING	
							Freq.	Sample Type
Flow	MGD	Monthly Avg. Daily Max.	0.593 2.344	0.6 1.55	MR MR	MR MR	Continuous	Meter
Total Organic Carbon (TOC)	kg/d	Monthly Avg. Weekly Avg.	11.6 11.6	15.71 15.71	481 721	347 520	Monthly	24 Hr Composite
Total Organic Carbon (TOC)	mg/L	Monthly Avg. Weekly Avg.	5.9 5.9	7.88 7.88	42 63	42 63	Monthly	24 Hr Composite
Total Suspended Solids (TSS)	kg/d	Monthly Avg. Daily Max.	9.62 23.55	10.57 10.57	MR MR	MR MR	Monthly	24 Hr Composite
Total Suspended Solids (TSS)	mg/L	Monthly Avg. Daily Max.	6 8	5.33 5.33	MR 50	MR 50	Monthly	24 Hr Composite
Petroleum Hydrocarbons	kg/d	Monthly Avg. Instant Max	1.3 11.5	1.55 3.63	MR MR	MR MR	Weekly	24 Hr Composite
Petroleum Hydrocarbons	mg/L	Monthly Avg. Instant Max.	0.66 0.66	0.59 1.09	10 15	10 15	Weekly	24 Hr Composite
Effluent pH	su	Instant Min. Instant Max.	6.9 7.5	6.9 7.4	6.0 9.0	6.0 9.0	Monthly	Grab
Arsenic, Total Recoverable	kg/d	Monthly Avg. Daily Max.	0.03 0.33	0.0265 0.0449	0.82 1.07	0.59 0.88	Monthly	24 Hr Composite
Arsenic, Total Recoverable	ug/L	Monthly Avg. Daily Max.	13.3 84.2	13.52 19.40	71 93	71 93	Monthly	24 Hr Composite
Acute Toxicity, LC50	%	Minimum	>100	>100	50	50	Semi-Annually	Composite
Chronic Toxicity, IC25	%	Minimum	>100	>100	MR	--	Semi-Annually	Composite

Footnotes and Abbreviations:

MR Monitor and report only

(1) Wastewater data originates from the information submitted on the monitoring report forms from 8/00 to 7/02.

(2) Data in this column is from the NJPDES application dated 9/6/02.

11 Permit Summary Table DSN 002

Unless otherwise noted all effluent limitations are expressed as maximums. Dashes (--) indicate there is no effluent data, no limitations, or no monitoring for this parameter depending on the column in which it appears.

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA (1)	APPLICATION DATA (2)	EXISTING LIMITS	FINAL LIMITS	MONITORING	
							Freq.	Sample Type
Flow	MGD	Monthly Avg. Daily Max.	0.21 0.94	0.23 0.47	MR MR	MR MR	Continuous	Meter
Total Organic Carbon (TOC)	mg/L	Monthly Avg. Daily Max.	7.86 7.86	11.36 11.36	MR 100	MR 100	Monthly	Grab
Total Suspended Solids (TSS)	mg/L	Monthly Avg. Daily Max.	12.4 25	12.0 12.24	MR 50	MR 50	Monthly	Grab
Petroleum Hydrocarbons	mg/L	Monthly Avg. Instant Max.	0.82 1.8	0.62 0.66	10 15	10 15	Monthly	Grab
Effluent pH	su	Instant Min. Instant Max.	7.6 8.6	7.2 8.64	6.0 9.0	6.0 9.0	Monthly	Grab
Benzene	ug/L	Monthly Avg. Daily Max.	-- --	-- 120 (3)	-- --	MR MR	Quarterly	Grab
Copper, Total Recoverable	ug/L	Monthly Avg. Daily Max.	-- --	-- 1130 (3)	-- --	MR MR	Quarterly	Grab
Iron, Total Recoverable	ug/L	Monthly Avg. Daily Max.	-- --	-- 6960 (3)	-- --	MR MR	Quarterly	Grab
Lead, Total Recoverable	ug/L	Monthly Avg. Daily Max.	-- --	-- 682 (3)	-- --	MR MR	Quarterly	Grab
Mercury, Total Recoverable	ug/L	Monthly Avg. Daily Max.	-- --	-- 4 (3)	-- --	MR MR	Quarterly	Grab
Acute Toxicity, LC50	%	Minimum	--	--	--	MR	Semi-Annual	Composite

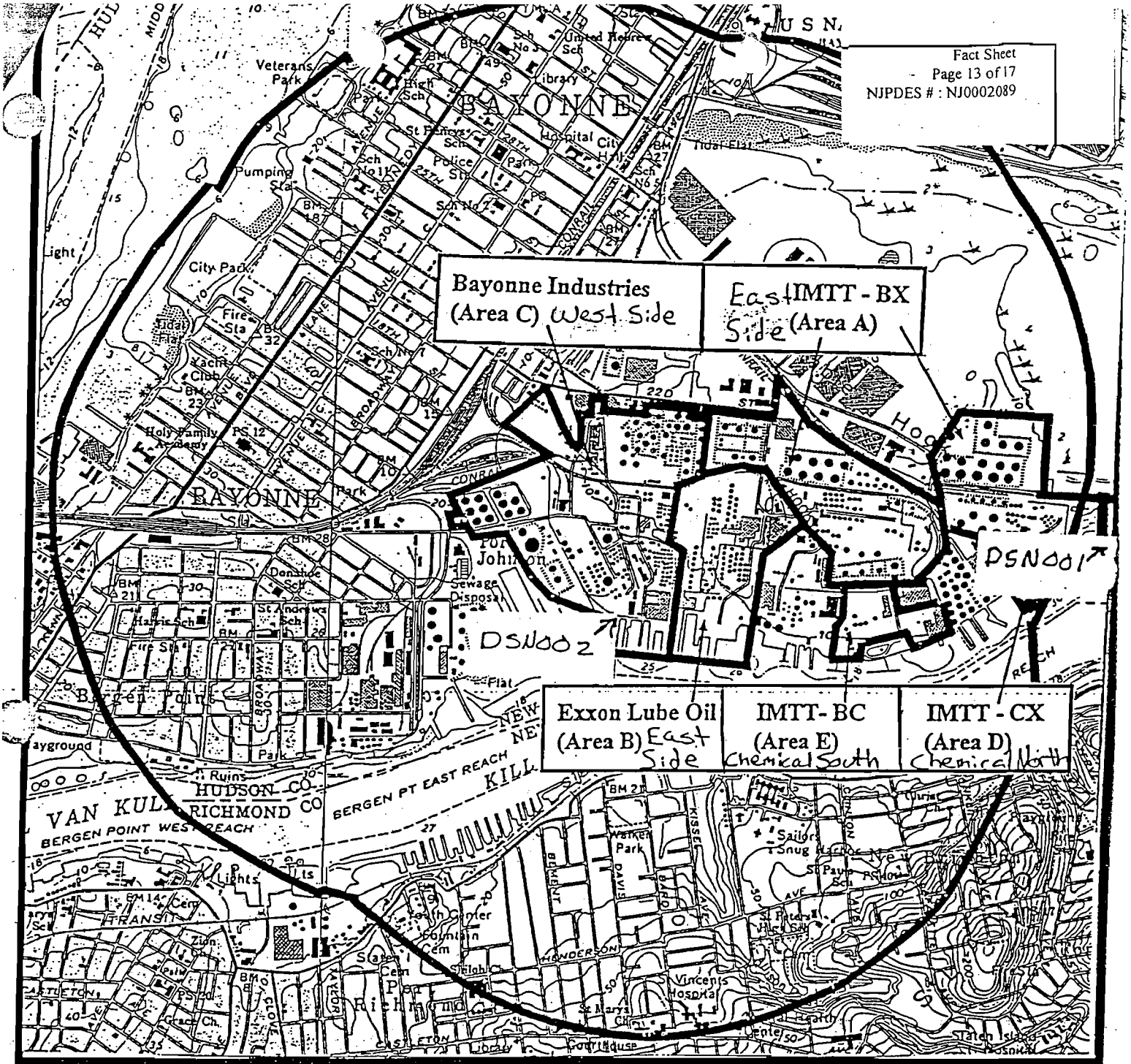
Footnotes and Abbreviations:

MR Monitor and report only

(1) Wastewater data originates from the information submitted on the monitoring report forms from 8/00 to 7/02.

(2) Data in this column is from Form C of the NJPDES application dated 9/6/02.

(3) This data originates from the May 1995 Aqueous Sample Results Summary for the Platty Kill Pond water (Table 4-5 and 4-7 of Permit Application).

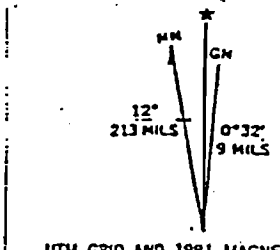


IMTT - BAYONNE
Site Location Plan / 1- Mile Vicinity Map

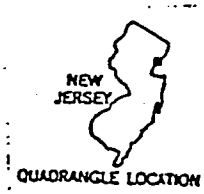
Bayonne, Hudson County, NJ

USGS Jersey City, NJ-NY Quadrangle
7.5 Minute Series (Topographic)

Date: 1967, photorev. 1981



UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



QUADRANGLE LOCATION

Figure: 1
Scale: 1"= 2000'

PSP Segment Code: 01000000 Hudson River and Upper New York Bay

EPA Reach Number: 02030104-001

Figure 2
Eastside Wastewater Treatment Plant
Block Flow Diagram
Outfall: DSN001

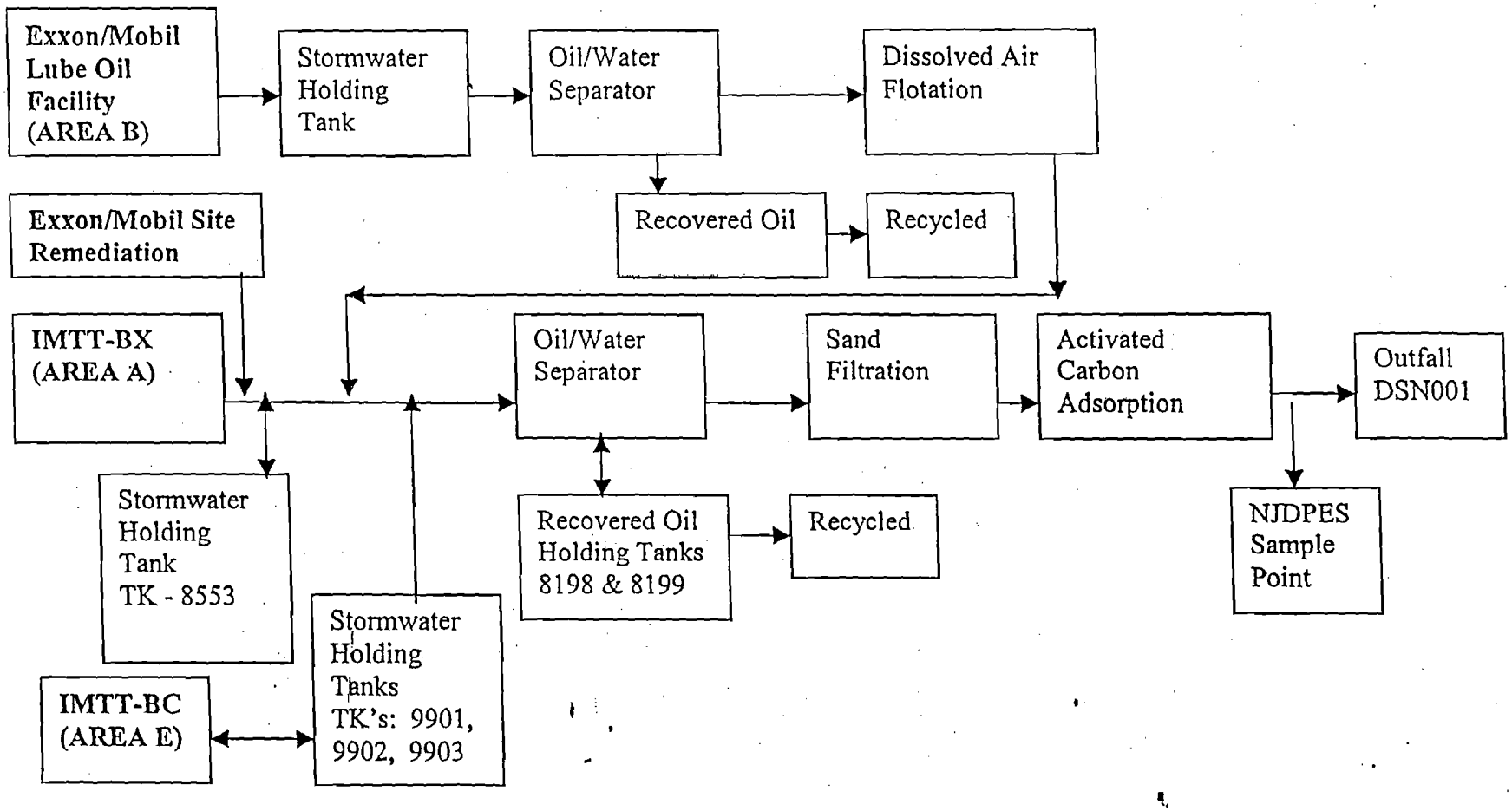


Figure 3
Westside Wastewater Treatment Plant
Block Flow Diagram
Outfall: DSN002

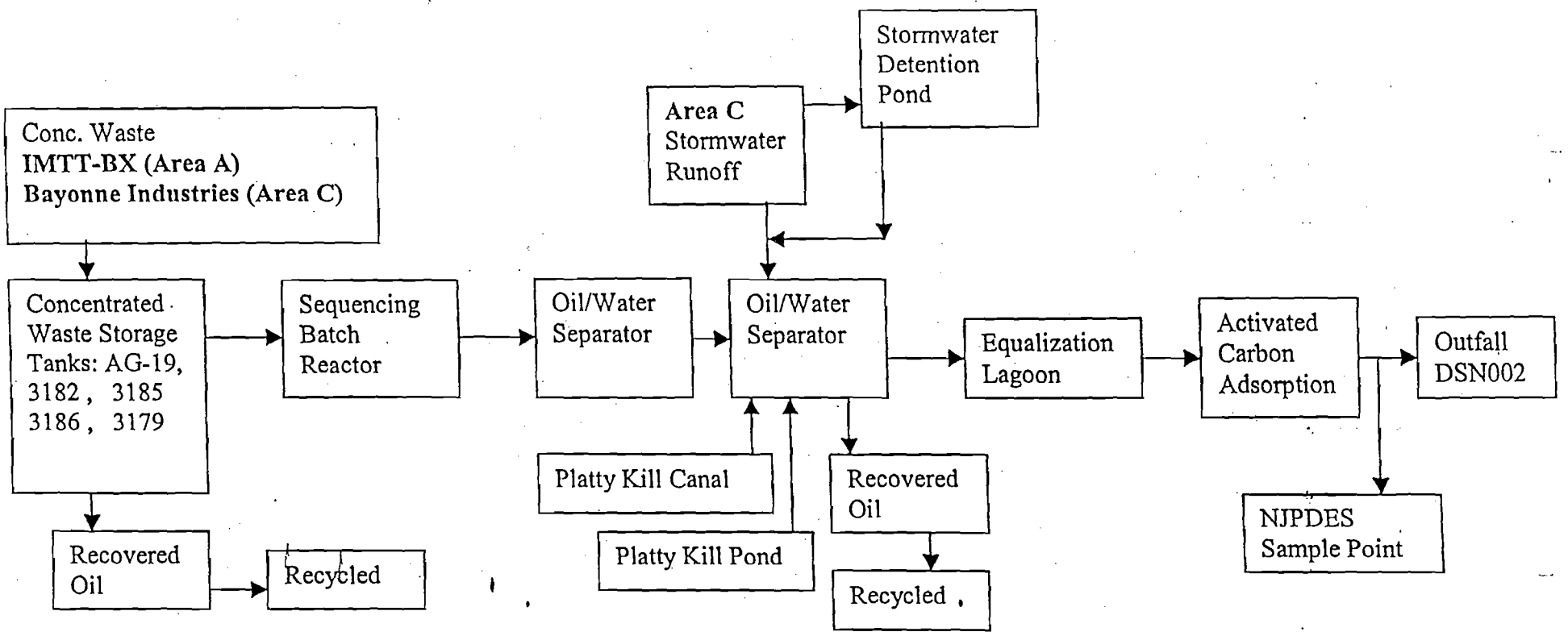
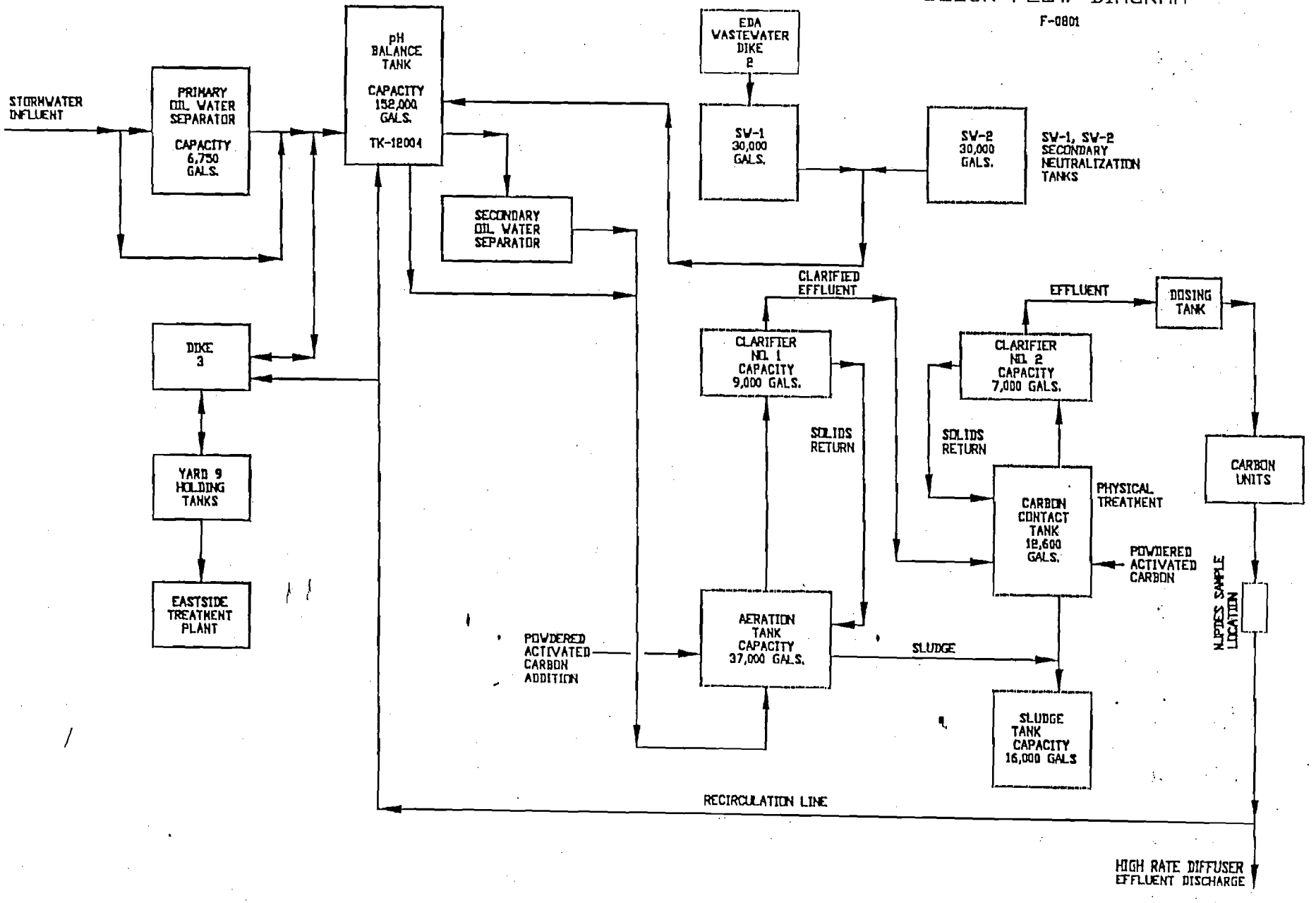


FIGURE 4

ZIMPRO
WASTEWATER TREATMENT FACILITY
BLOCK FLOW DIAGRAM

F-0801



12 Contents of the Administrative Record

The following items are used to establish the basis of the Draft Permit:

1. 33 U.S.C. 1251 et seq., Federal Water Pollution Control Act. [C]
2. 40 CFR Part 131, Federal Water Quality Standards. [A] [C]
3. 40 CFR Part 122, National Pollutant Discharge Elimination System. [C]
4. N.J.S.A. 58:10A-1 et seq., New Jersey Water Pollution Control Act. [A] [B]
5. N.J.A.C. 7:14A-1 et seq., New Jersey Pollutant Discharge Elimination System Regulations. [A] [B]
6. N.J.A.C. 7:9B-1 et seq., New Jersey Surface Water Quality Standards. [A] [B]
7. N.J.A.C. 7:9-5.1 et seq., Wastewater Discharge Requirements. [A] [B]
8. N.J.A.C. 7:15, Statewide Water Quality Management Planning Rules. [A] [B]
9. N.J.A.C. 7:14C, Sludge Quality Assurance Regulations. [B]
10. "Field Sampling Procedures Manual", published by the NJDEP. [A]
11. "Discharge Monitoring Report (DMR) Instructional Manual", published by the NJDEP. [A]
12. "EPA Technical Support Document for Water Quality-based Toxics Control", EPA/505/2-90-001, March 1991. [A]
13. 1998 "Identification and Setting of Priorities for Section 303(d) Water Quality Limited Waters in New Jersey" report. [A] [B]
14. Interstate Environmental Commission Regulations, N.J.S.A. 32:18-1 et seq.
16. NJPDES/DSW Permit Application dated 8/6/02. [A]
17. NJPDES/DSW Permit NJ0002089 issued 12/29/97. [A]
19. NJPDES/DSW Minor Permit Modification NJ0002089 issued 12/6/01.
    Site Visit on [*date of site visit*].
20. Discharge Monitoring Reports (DMRs) from 8/00 to 7/02.
21. Compliance Inspection Reports dated 12/31/97 and 7/3/02.
22. Correspondence dated 7/31/98 to Jim Grob of DEP from George M. Bress of IMTT-Bayonne regarding Reevaluation of the 1991 Critical Instream Waste Concentration Determination of new Dilution Factor.

Footnotes:

[A] Denotes items that may be found in the NJPDES/DSW Administrative Record Library located in the NJDEP Central File Room, 401 East State Street, Trenton, New Jersey.

[B] Denotes items that may be found on the New Jersey Department of Environmental Protection (NJDEP) website located at "http://www.state.nj.us/dep/".

[C] Denotes items that may be found on the United States Environmental Protection Agency (USEPA) website at "http://www.epa.gov/".

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0002089

Draft: Surface Water Renewal Permit Action

Permittee:
IMTT-BAYONNE
250 EAST 22ND STREET
BAYONNE, NJ 07002

Co-Permittee:

Property Owner:
IMTT-BX
321 ST CHARLES AVE
NEW ORLEANS, LA 70130-0000

Location Of Activity:
IMTT-BAYONNE
250 EAST 22ND STREET
BAYONNE, NJ 07002-0000

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
B -Industrial Wastewater			

By Authority of:
Commissioner's Office

DEP AUTHORIZATION
Pilar Patterson, Chief
Bureau of Point Source Permitting - Region 2
Division of Water Quality

(Terms, conditions and provisions attached hereto)

copy

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

April 20, 2006

Mr. Dennis M. Toft
Wolf & Samson
One Boland Drive
West Orange, NJ 07052

Re:		
	TYPE OF APPLICATION:	LNA Application
	TRANSACTION:	Sale of Stock in Corporation
	NAME:	IMTT Bayonne
	ADDRESS:	250 East 22nd Street
	MUNICIPALITY:	Bayonne City
	COUNTY:	Hudson
	BLOCK & LOT	See Attachment for Lots & Blocks
	APPLICATION NO:	N20062093

Dear Mr. Toft:

This is in response to your application received April 19, 2006 concerning the applicability of the Industrial Site Recovery Act (ISRA) to the above referenced establishment. On the basis of the sworn statements set forth in the affidavit signed by James O. Coleman, the Department finds that this transaction is not subject to the provisions of ISRA.

This decision is made in light of the absence of an industrial establishment as defined within the North American Industry Classification System numbers covered by the Act. Any inaccuracies in the affidavit or subsequent changes in the facts as stated therein could alter the Department's determination.

The inapplicability of the Industrial Site Recovery Act to this transaction does not relieve the above referenced establishment of any responsibilities under any other environmental statutes, regulations or permits. In addition, this determination of ISRA inapplicability does not constitute any finding by the New Jersey Department of Environmental Protection as to the current site condition or existence or nonexistence of any hazards to the environment at this location. In addition, obtaining an ISRA Applicability Determination is not a substitute for the appropriate inquiry into a site prior to acquisition for the purposes of an innocent purchaser defense (pursuant to the NJ Spill Compensation and Control Act).

Should you have any further questions regarding this matter, please contact Jim Bono at (609) 633-1434.

Sincerely,

James J. Bono

James J. Bono, Supervisor
Applicability Unit

CCG000041

Attachment A

Tax Block and Lot Numbers and Current Property Owners

Owner	Block	Lot(s)
Bayonne Industries, Inc.	452	6, 7, 9
	452.02	6, 7, 8, 11
	463	1, 2, 3
	464.01	1, 3, 4, 5, 5.01, 5.02, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
	464.02	1, 2
	465	5, 6, 6.7, 7
	470.01	1
	476.01	1, 2, 4, 5, 6, 7, 8, A1
	476.02	1, 2
	477.01	1, B3
	477.01	1, 1.01, RG42RG43RG44
	477.01	1, 2
	477.02	1, 3
	477.02	2
	478	1A, 1B, 2, 8A, 8B, 10A
	479	1
	1513	1, 2, 3, 4, 5
IMTT-BX	418	3, 4
	419	1
	427	3
	465	1, 2, 3, 4
	466	1, 2, 3, 4
	480	1
IMTT-BC	481	3, 3.01, 6
	482	3, 4, 4.01, 5, 6
IMTT-CX	482	10, 11
Hook Terminaling Company	481	5
IMTT-Pipeline	(easements only)	(easements only)
IMTT-Interterminal Pipeline	332	6, 7
	333.01	7
	475	4, 11, 12, 13, 14, 15

Transaction Type

1 - Sale of Property
2 - Sale of Business
3 - Business Ceasing Operations
4 - Refinancing
5 - Sale of Stock in Corp.
6 - Condemnation
7 - Bankruptcy
8 - Corporate Merger
9 - Prtnrshp Situation Change
10 - Intra Family
11 - Corporate Reorg.
12 - Sale of Assets
13 - Other
14 - Sale of Property & Business
15 - Sale of Property & Cessation

CASE #N2006 2093

DATE REC'D: 4 / 12 / 06

TRANSACTION TYPE: _____

SIC #: _____ NAICS #: _____

HAZARDOUS SUBSTANCE: _____

SUBJECT (YES/NO) _____

CONTACT: JM

LETTER #: _____

INSPECT: YES/NO # OF SITES _____

DATE OF INSPECTION: ____/____/____

SUPPLEMENTAL INFO DATE: ____/____/____

DEFICIENT: YES/NO _____

LETTER: _____

CHRONOLOGY OF EVENTS FOR LNA INVESTIGATION

DATE	SUMMARY

WOLFF & SAMSON PC

COUNSELLORS AT LAW

THE OFFICES AT CRYSTAL LAKE
ONE BOLAND DRIVE
WEST ORANGE, NEW JERSEY 07052
973-325-1500
TELECOPIER: 973-325-1501

NEW YORK OFFICE:
140 BROADWAY
FORTY-SIXTH FLOOR
NEW YORK, NEW YORK 10005
212-973-0572

PHILADELPHIA OFFICE:
TWO PENN CENTER, SUITE 1310
1500 JOHN F. KENNEDY BOULEVARD
PHILADELPHIA, PENNSYLVANIA 19102
215-567-2878

WWW.WOLFFSAMSON.COM

WRITER'S E-MAIL:
LSullivan@WolffSamson.com

WRITER'S DIRECT DIAL:
973-530-2081

WRITER'S TELECOPIER:
973-530-2281

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ARMEN SHAHINIAN*
BRADLEY M. CAMPBELL*
THOMAS R. O'BRIEN*
GAGE ANDRETTA*
DANIEL A. SCHWARTZ*
KAREN L. GILMAN
KENNETH N. LAPTOOK*
FREDRIC P. LAVINTHAL
DAVID M. HYMAN*
DAVID L. SCHLOSSBERG
ROGER J. BREENE
DAVID N. RAVIN*
PAUL M. COLWELL
ROBERT E. NIES
MORRIS BIENENFELD*
DENNIS M. TOFT
JEFFREY M. GUSSOFF*
JOHN F. CASEY
JAMES D. FERRUCCI
JOHN M. SIMON
JOHN A. McKINNEY, JR.
STEPHEN L. FERSZT*
LAURENCE M. SMITH
WILLIAM E. GOYDAN*

DARRYL WEISSMAN*
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LORI GRIFA*
MICHELLE A. SCHAAP
ADAM K. DERMAN
ANDREW SAMSON*
ADAM P. FRIEDMAN*
SCOTT D. BARON[D]
MITCHELL S. BERKEY*
CATHERINE P. WELLS
JONATHAN BONDY*
MICHAEL A. JANKOWSKI[A]
DANIEL M. MURPHY*
ROBERT H. CRESPI*
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KLAUS P. STOFFEL*[A]
STEPHEN M. ASPERO*
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BARBARA B. MANAHAN
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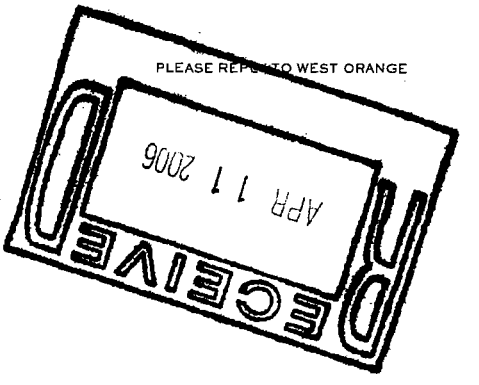
SHARON L. WEINER[C]
CARLOS G. MANALANSAN
MYRNA BLUME
DANIEL D. BARNES*
RONALD L. ISRAEL*
ARTHUR M. NALBANDIAN*
WILLIAM R. FINIZIO
JOHN O. LUKANSKI*

DIANA L. BUONGIORNO
CHRISTOPHER NUCIFORA
THOMAS J. TRAUTNER*
LINDA D. SULLIVAN*
JENNIFER R. JACOBUS
JOSHUA M. LEE
KAREN L. SHAMIR
RANDI-LYNN SMALLHEER*
TODD W. TERHUNE
ELIE FINK*
SHANNON L. KEIM
DENISE J. PIPERSBURGH*
RUSSEL D. FRANCISCO*
NICOLE F. DIMARIA
DANIEL T. McKILLOP
SCOTT E. LINSKY*
KATHRYN E. SONG*
SEEMA CHANDRA*
JENNIFER J. McGRUTHER*
KIRAN V. SOMASHEKARA
LORYN M. LAWSON
RACHEL C. MAIO*[A]
SCOTT J. GOLDSTEIN*
CARA A. CENTANNI*
JOSHUA M. GAFFNEY*
MELISSA A. SALIMBENE*
SAUL STEIN

*MEMBER NJ AND NY BARS
*MEMBER NJ AND PA BARS
[C]MEMBER PA AND NY BARS
[D]MEMBER NJ, NY AND PA BARS
*MEMBER NY BAR ONLY
*MEMBER PA BAR ONLY
[A]REGISTERED PATENT ATTORNEY

MARTIN L. WIENER (1942 - 2002)



April 7, 2006

Via Fax and Federal Express
New Jersey Department of Environmental Protection
Bureau of Risk Management, Initial Notice & Case Assignment
ISRA Applicability Section
401 East State Street, 5th Floor
P.O. Box 432
Trenton, New Jersey 08625-0432

Re: IMTT-Bayonne
250 East 22nd Street
Bayonne, Hudson County, New Jersey

Dear Sir or Madam:

Enclosed is an Applicability/Nonapplicability Affidavit for the above-referenced site pursuant to the Industrial Site Recovery Act, N.J.S.A. 13:1K-6 *et seq*. Also enclosed is a check for the applicable fee of $200.00 made payable to Treasurer, State of New Jersey.

Thank you for your attention to this matter. Please call me if you have any questions or require additional information.

Very truly yours,

Linda D. Sullivan

LINDA D. SULLIVAN

Enclosures

NOTE: Please read the entire introduction before completing this application. It contains important information about this form and the ISRA process. All sections of this application shall be completed or it will be returned unprocessed.

PLEASE TYPE OR PRINT Date April 7, 2006

A. Determination of Applicability/Nonapplicability should be mailed to the following:

Name (Mr./Mrs./Ms.) Dennis M. Toft, Esq.
Company Wolff & Samson PC
Address One Boland Drive
City or Town West Orange
State New Jersey Zip Code 07052 Tele. No. 973-530-2014

B. Property Location for which request is being submitted:

Street Address 250 East 22nd Street
Tax Block(s) **See Attachment A** Tax Lot(s) **See Attachment A**
Municipality Bayonne County Hudson

C. Transaction for which the Applicability/Nonapplicability Determination is requested: (Check appropriate transaction). * Please attach a detailed description of these transactions.

1. ___ Sale of Property
2. ___ Sale of Business
3. ___ Business Ceasing Operations
4. _X_ Sale of Stock in a Corporation*
5. ___ Condemnation
6. ___ Bankruptcy
7. ___ Corporate Merger*
8. ___ Partnership Situation Change *
9. ___ Intra Family
10. ___ Corporate Reorganization
11. ___ Sale of Assets

___ Other: (Explain) **See Attachment B**

If a sale is pending, provide the date of the Planned Transaction: Upon receipt of LNA

D. Current Owner of the Property for which an Applicability/Nonapplicability Determination is requested:

Name **See Attachment A**
Street Address 250 East 22nd Street
Municipality Bayonne State New Jersey
Zip Code 07002 Tele No. 201-437-2200

E. Purchaser: (not required if the transaction is only a cessation of operations)

Name Macquarie Terminal Holdings LLC
Address 125 West 55th Street
Municipality New York State NY Zip Code 10019

F. Please provide the name of each Business/Industrial Establishment that operated at the address listed in Question B on or after December 31, 1983. Include the dates of operations and the applicable NAICS number. Note, if the applicant is a tenant and the transaction affects only its operation (i.e., a cessation of operations or sale of business), it is acceptable to only list the tenant's business and seek a determination regarding the applicability of ISRA to the operation of the current business. Please read the summarized definition of Industrial Establishment on the first page of this application before going any further. (Attach additional sheets if necessary.)

Name of Business/Industrial Establishment	Dates of Operation		NAICS # 6 Digits
	From MM/YY	To MM/YY	
See Attachment C	Pre-1983	Present	493190

G. Operations:

1.) The property owner and/or operator must completely describe in detail the operations and processes conducted at the site for each business listed in F above occupying any part of the property since December 31, 1983. The description should include the nature of each operator's business and, specifically, how the site is used in connection with such business. If the application only pertains to a tenant's transaction, simply describe the tenant's operations. (Attach additional sheets, if necessary.)

IMTT-Bayonne operates a bulk petroleum and chemicals storage and distribution facility.

2.) If the property described above is vacant land, does the owner described in D above own contiguous property? __ Yes __ No (If yes, please describe onsite operations at the contiguous property.)

Not Applicable

H. History:

1. Provide the name and address of all previous Owners and dates of ownership since December 31, 1983. (Attach additional sheets, if necessary.)

Name **Address** **Date**

See Attachment C

2. Is this site currently or has the site previously been the subject of any other ECRA or ISRA review? _X_ Yes ___ No. If yes, please provide the case or application number __NJD064288855; #01-03-07-1649-03; #E20030328; #E20030482; #E20030483; #85108; #98513; #E94100; #NJD045435807

I. Hazardous Substances or Wastes: Answer this question only if the facility or business has a subject NAICS number as listed in Appendix C of the ISRA rule and the applicant is seeking a determination of ISRA non applicability based on the absence of any hazardous substances or wastes being generated, manufactured, used or stored at the listed site. Be advised that heating oil is a hazardous substance. *. Check here _X_ if this question does not apply and go to section **J**.

*Note: Heating oil, formerly contained in historic above or below ground tanks, is not a hazardous substance for the purpose of this section, if the tanks were removed with the Department's no further action approval. Applicants who closed tanks without Departmental oversight are subject to ISRA and should file a General Information Notice within 5 days of a triggering event. Was the building(s) ever heated by oil? Yes No__. If yes, please provide a copy of the no further action determination to support your request.

By signing the certification at section **N** of this application, I certify that no hazardous substances or wastes, as defined at N.J.A.C. 7:1E, were **ever** used during the ownership or operations of the business(s) listed in Question F above. The Signatory on the certification shall initial here _____.

Sections **J-L** below are for the use of applicants who seek a determination as to whether a specific transaction is a ***"Change of ownership," "Closing operations" or "Transferring ownership or operations."*** Should the applicants' NAICS number not be among those listed at N.J.A.C. 7:26B, Appendix C, as subject to ISRA, then these sections should be disregarded. Please proceed to section **M**.

J. If the applicant is seeking a determination for a transfer of ownership or operations involving an evaluation of whether the indirect owner's assets would have been available for remediation please provide the following information as an attachment to this application:

1. Identify each direct owner and each indirect owner of the industrial establishment;

2. Identify whether the indirect owner has exerted fiscal control over the direct owner or industrial establishment including, but not limited to, imposing any restriction upon the financing, borrowing, budgeting, dividends and cash management of the direct owner or industrial establishment;

3. List all persons that are officers and directors for both the direct owner and the indirect owner of the industrial establishment to establish whether the officers, directors and employees of the indirect owner constitute a majority of the directors of the direct owner or the industrial establishment or such smaller number of directors as is sufficient to effectively direct the management and policies of the direct owner or the industrial establishment;

4. Identify whether the officers, directors and employees of the indirect owner are involved in the day-to-day operations of the direct owner or the industrial establishment and whether the day-to-day operations of the direct owner or the industrial establishment are relevant to the generation, manufacture, handling, storage or disposal of hazardous substances or hazardous wastes;

5. Identify whether the indirect owner has the ability to control the activities, policies or decisions of the direct owner or the industrial establishment and whether these activities, policies or decisions are relevant to the generation, handling, storage or disposal of hazardous substances or hazardous wastes; and

6. The applicant shall provide any additional information which may be relevant to this determination.

K. If the applicant is seeking a determination for a transfer of ownership or operations involving an evaluation of whether the subject transaction is a corporate reorganization not substantially affecting the ownership of the industrial establishment, please provide the following information as an attachment to this application:

1. Identify each direct owner of the industrial establishment, indirect owner of the industrial establishment and the organizational structure of the person, prior to, and after the proposed transaction;

2. Identify whether the transaction involves the transfer of stock and/or assets, solely among persons under common ownership or control and/or shareholders or owners of such persons. A transaction between related corporations that prepare financial statements or tax returns on a consolidated basis will be presumed to be among corporations under common ownership or control;

3. Identify: (i.) Whether the transaction will result in an aggregate diminution of more than 10 percent in the net worth of the industrial establishment or of the person directly owning or operating the industrial establishment. The applicant must include all transactions occurring within the five-year period preceding the date of the proposed transaction in the calculation of "aggregate diminution"; or (ii.) Whether there is an equal or greater amount in assets that is available for the remediation of the industrial establishment before and after the transaction(s);

4. Identify whether the transferee has a registered agent in New Jersey who is authorized to accept service on behalf of the transferee. If so, the applicant shall provide the name and address of the registered agent;

5. Identify whether the assets of an indirect owner transferring any direct or indirect interest in the stock or assets of the industrial establishment would have been available for the remediation of the industrial establishment based upon the criteria set forth in (b) above; and

6. Provide any additional information which may be relevant to this determination.

L. **See Attachment B.**

If the applicant is seeking a determination for a transfer of ownership or operations involving an evaluation of whether the subject transaction is a transfer of a controlling interest in the industrial establishment, please provide the following information as an attachment to this application.

1. Identify whether the transferor is transferring more than 50 percent of the voting or ownership interest in the direct owner or operator or indirect owner of an industrial establishment. There is a rebuttable presumption that any person who has more than 50 percent of the voting or ownership interest holds a controlling interest in that direct owner or operator or indirect owner; or

2. Identify whether the transferor is transferring 50 percent or less of a voting or ownership interest in the direct owner or operator or indirect owner of an industrial establishment and: i. Identify whether the transferor possess(es), directly or indirectly, the power to direct or cause the direction of the management and policies of the entity; and

ii. Identify whether a voting trust, shareholder's agreement, proxy or similar agreement exists which would enable the transferor to elect a majority of the board of directors or a smaller number of directors sufficient to effectively direct or cause the direction of the management and policies of the entity; and

3. Provide any additional information which may be relevant to this determination.

M. Right of Entry: *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

CERTIFICATION:

The following certification shall be signed by a duly authorized person pursuant to the requirements of N.J.A.C. 7:26B-1.6(e) as follows.

a. For a corporation, by a principal executive officer of at least the level of vice president;
b. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
c. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

N. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of N.J.S.A. 13:1K-6, et seq., I am personally liable for the penalties set forth at N.J.S.A. 13:1K-13.

Bayonne Industries, Inc., a New Jersey corporation

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th day

Date of April 2006

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 18, 2009

Notary

Have you enclosed a check or money order for $200? X **Yes** __ **No**

Check Number $7155

Have you included the original signature of the owner or operator? X **Yes** __ **No**

Has the certification been properly notarized? X **Yes** __ **No**

M. Right of Entry: *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

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IMTT-CX, a Delaware partnership

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th day

Date of April 20 06

Jill M. Chapman

Notary

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 16, 2009

M. Right of Entry: *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

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b. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

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IMTT-Pipeline, a Delaware partnership

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th day

Date of April 2006

Jill M. Chapman

Notary

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 16, 2009

M. Right of Entry: *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

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IMTT-Bayonne, a Delaware partnership

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th

Date of April 20 06

Notary Jill M. Chapman

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 16, 2009

M. Right of Entry: *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

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IMTT-Interterminal Pipeline, a Delaware partnership

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th day

Date of April 20 06

Jill M. Chapman

Notary

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 16, 2009

M. **Right of Entry:** *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

CERTIFICATION:

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b. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
c. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

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Hook Terminaling Company, a Delaware partnership

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th day

Date of April 20 06

Jill M. Chapman

Notary

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 16, 2009

M. Right of Entry: *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

CERTIFICATION:

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b. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
c. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

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IMTT-BC, a Delaware partnership

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th ~~April~~ day

Date of April 2006

Jill M. Chapman

Notary

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 16, 2009

M. Right of Entry: *Pursuant to the Industrial Site Recovery Act rules (N.J.A.C. 7:26B-1.9), by the submission and certification of this document, I give my consent to the Department and or its authorized representatives to enter the Industrial Establishment, upon the presentation of credentials, to inspect the site to verify the accuracy of this application.* JC **(The signatory on the certification shall initial here)**

CERTIFICATION:

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b. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
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IMTT-BX, a Delaware partnership

Typed/Printed Name By: James O. Coleman Title President

Signature James O Coleman Date 4/7/06

Sworn to and Subscribed Before Me

on this 7th day

Date of April 2006

Jill M. Chapman

Notary

JILL M. CHAPMAN
Notary Public of N.J.
My Commission Expires March 16, 2009

Attachment A

Tax Block and Lot Numbers and Current Property Owners

Owner	Block	Lot(s)
Bayonne Industries, Inc.	452	6, 7, 9
	452.02	6, 7, 8, 11
	463	1, 2, 3
	464.01	1, 3, 4, 5, 5.01, 5.02, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
	464.02	1, 2
	465	5, 6, 6.7, 7
	470.01	1
	476.01	1, 2, 4, 5, 6, 7, 8, A1
	476.02	1, 2
	477.01	1, B3
	477.01	1, 1.01, RG42RG43RG44
	477.01	1, 2
	477.02	1, 3
	477.02	2
	478	1A, 1B, 2, 8A, 8B, 10A
	479	1
	1513	1, 2, 3, 4, 5
IMTT-BX	418	3, 4
	419	1
	427	3
	465	1, 2, 3, 4
	466	1, 2, 3, 4
	480	1
IMTT-BC	481	3, 3.01, 6
	482	3, 4, 4.01, 5, 6
IMTT-CX	482	10, 11
Hook Terminaling Company	481	5
IMTT-Pipeline	(easements only)	(easements only)
IMTT-Interterminal Pipeline	332	6, 7
	333.01	7
	475	4, 11, 12, 13, 14, 15

Attachment B

Even though the operations at the facility are not ISRA-subject based on the NAICS code, the applicant is also seeking a determination for a transfer of ownership interest involving an evaluation of whether the subject transaction is a transfer of a controlling interest in the industrial establishment, pursuant to section "L" of the application. The following information describes the transaction:

Bayonne Industries, Inc., IMTT-BX, IMTT-BC, IMTT-CX, Hook Terminaling Company, IMTT-Pipeline, and IMTT-Interterminal Pipeline (the current owners of the industrial establishment) are ultimately owned by Loving Enterprises, Inc. ("Loving"), a Louisiana corporation. Therefore, Loving is the indirect owner of the industrial establishment. This transaction involves the sale of a 50% ownership interest in Loving to Macquarie Terminal Holdings LLC, a Delaware limited liability company. The daily operational control of the industrial establishment will remain the same. The current operations are not ISRA-subject, and there will be no change in operations at the facility as a result of this transaction.

Pursuant to Section L of the application, Loving is issuing and selling 50% of the ownership interest in the indirect owner of the industrial establishment. The transferor and Macquarie will share equally the power to direct or cause the direction of the management and policies of Loving, and a shareholder's agreement enables each of them to elect half of the members of the board of directors. However, the operational control of the industrial establishment in Bayonne will remain the same following the transaction.

Attachment C

Prior Owners and Operators

IMTT-Interterminal Pipeline purchased its portion of the facility from Coastal Oil New York, Inc., 1001 Louisiana Street, Houston, Texas 77002 on February 26, 2004. At the same time, **IMTT-Pipeline** received an assignment of Coastal's rights under several existing pipeline easements. IMTT-Pipeline does not own any real property.

Bayonne Industries, Inc. has owned its portion of the facility from prior to 1983. Other operators of this property (in addition to IMTT-Bayonne) include the following: Oil Mop – East Coast, L.L.C., environmental consulting company from August 1997; Bennet Testing Services, Inc., independent chemical testing facility from November 1995; Enron Capital & Trade Resources Corp., a cogeneration facility (currently undertaking a remediation pursuant to ISRA Case No. 98513); Mid-States Packaging & Distribution, Inc., warehouse for storage of plastic resins from March 1994; Bookazine, book warehouse from November 1997 to March 1998; Coviello Transportation Company, general warehousing and storage from June 1989 to April 1994; H&M Warehousing & Transportation, general warehousing and storage from June 1988 to December 1988; Nicaretta Construction Company, storage of construction equipment from December 1973 to September 1995; Railhead Transfer, trucking and warehousing of general cargo in October 1984; Rona Pearl, manufacturing/warehousing/sales of cosmetic products from August 1971 to April 1995 (Rona Pearl submitted an ISRA filing for its termination of operations and received an NFA letter in June 1995 – E94100); Saybolt Inc., petroleum testing laboratory from December 1985 to July 1998; Universal Air Cargo, general warehouse/storage from October 1987 to December 1998; and Votainer, general warehousing and storage of shipping containers from October 1984 to January 1988.

IMTT-BC purchased its portion of the facility from Powell-Duffryn, Ltd. in February 1997. Powell-Duffryn (formerly known as El Dorado Terminals) operated at the facility from March 1979 through February 1997. A methylene chloride spill was remediated at this facility under Case # 01-03-07-1649-03. Prior operators of this property (in addition to IMTT-Bayonne) include the following: IESI Holding Corp, offices for sanitation collection company from October 1997; and Laboratory Services, Inc., independent chemical testing facility from pre-1984.

Hook Terminaling Company purchased its portion of the facility from the City of Bayonne in 2003. Lafarge North America operated the property during the City of Bayonne's ownership of the property, and continued operations after the property was purchased by Hook Terminaling Company. The site is being remediated pursuant to a Remediation Agreement under ISRA Case #E20030328.

IMTT-BX purchased its portion of the facility from Exxon in April 1993. Prior operators of this property (in addition to IMTT-Bayonne) include the following: International Petroleum Corp. of Delaware, waste oil recycling (primarily motor oils) from July 1998; Exxon Corporation leases a

portion of the property solely for use as staging area (equipment storage) for its environmental remediation from April 1993; SGS Control Services, Inc., independent petroleum testing laboratory from May 1991; Delta Atlantic, performs blending of materials to make aircraft wing de-icer from April 1994; Allchem, trucking terminal from October 1994 to July 1996; and Angus Tank Cleaning, tank cleaning operation and equipment staging area (actual tank cleaning done off-site) from September 1994 to May 1999.

IMTT-CX purchased its portion of the facility from Constable Terminal Corporation in August 1997. Powell Duffryn Terminals, Inc. owned the property until May 1984, when it sold the property to Constable Terminal Corporation.

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PLEASE REPLY TO WEST ORANGE

April 20, 2006

Via Facsimile (609-633-1439)
Mr. James J. Bono
New Jersey Department of Environmental Protection
Bureau of Risk Management, Initial Notice and Case Assignment
ISRA Initial Notice
401 East State Street, 5th Floor
P.O. Box 435
Trenton, New Jersey 08625-0435

Re: IMTT-Bayonne
250 East 22nd Street, Bayonne, New Jersey

Dear Mr. Bono:

As a supplement to IMTT-Bayonne's application for a non-applicability determination, we are providing this letter to further describe IMTT-Bayonne's operations at the above-referenced facility. IMTT-Bayonne operates a bulk petroleum and chemicals storage and distribution facility. IMTT-Bayonne does not own the products stored at its facility, but merely stores them for a fee. IMTT-Bayonne operates the tank terminal, but the products stored inside the tanks are owned by various customers. Because IMTT-Bayonne does not store its own products, its NAICS code is 493190, which is not subject to the requirements of ISRA.

Thank you for your attention to this matter. Please contact me if you have any questions or require additional information.

Very truly yours,

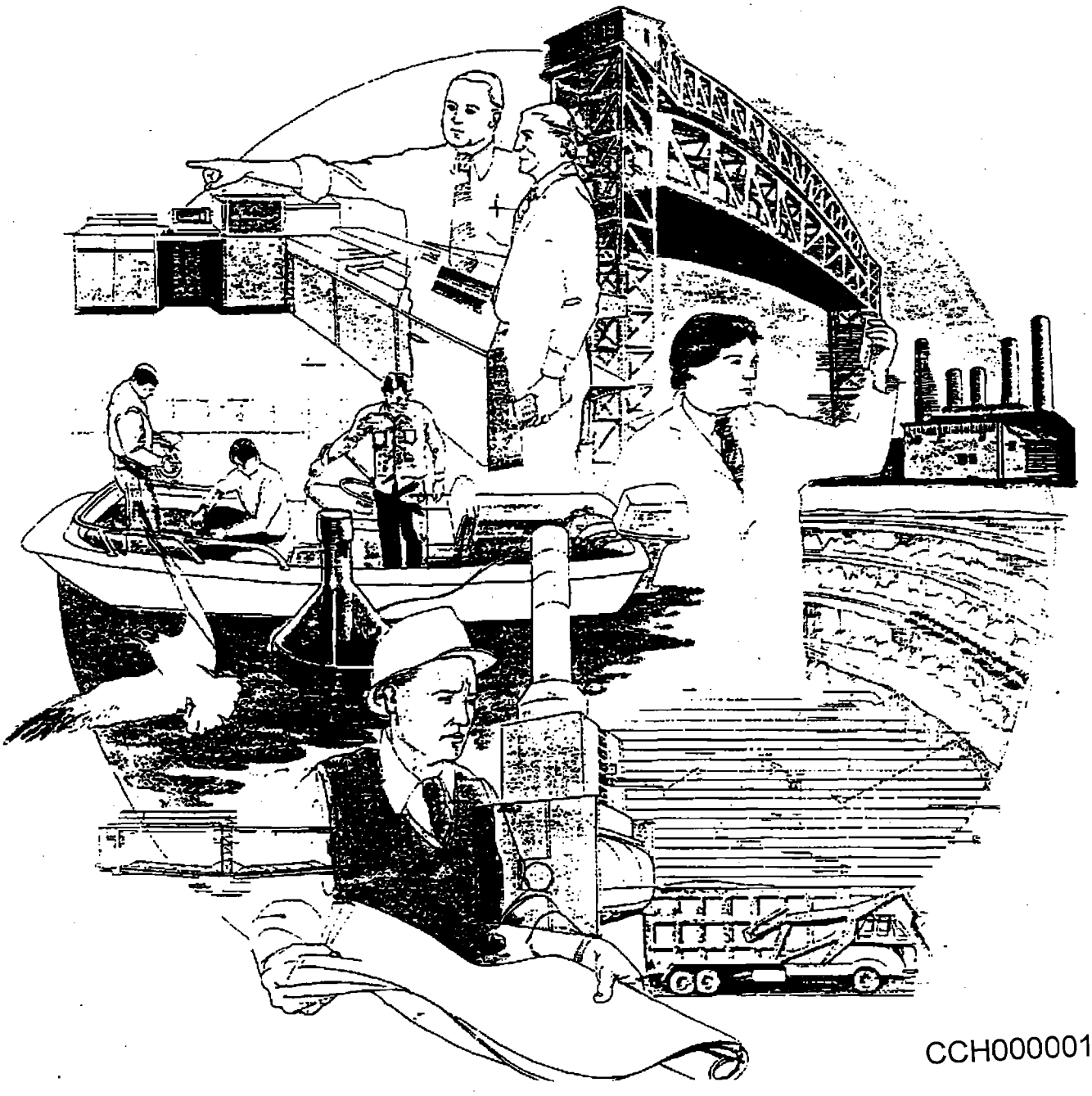
Dennis M. Toft/LL

DENNIS M. TOFT

1011589.1

Evaluation of Control Alternatives For the Separator Pond

Bayonne Industries, Inc.
Bayonne, New Jersey



CCH000001

EVALUATION OF CONTROL ALTERNATIVES FOR THE SEPARATOR POND

at

BAYONNE INDUSTRIES, INC.
BAYONNE, NEW JERSEY

Wilfredo C. Gomez, P.E.
Senior Project Engineer

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November 1979

Prepared by
ROY F. WESTON, INC.
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EXECUTIVE SUMMARY

BAYONNE INDUSTRIES, INC. has been confronted with an oil slick and/or sheen problem emanating from the separator pond. Although a WEMCO oil separator has been installed to meet the discharge criteria, the existence of large quantities of oily water and oil sludge in the pond is the primary cause of said problem. Bayonne Industries, Inc. retained Roy F. Weston, Inc. to develop a strategy to address and evaluate solutions to this problem.

Based on Weston's field investigations, hydrogeologic studies and bench scale testings, it was determined that the most attractive alternative is closure of the pond by pumping the oily water to the WEMCO separator and encapsulating the remaining sludge in-situ. The recommended strategy for pond closure is detailed in Section 6 of this report. This is feasible technically and environmentally, based on the following findings:

- The approach of in-situ fixation is supported by the following site conditions:
  - A clay layer is located along the bottom of the separator pond. Subsurface borings and laboratory analyses have indicated that there is no migration of contaminants from the pond into the clay layer.
  - The ground water elevation around the outside perimeter of the pond bulkhead is significantly higher than the water elevation in the pond. This indicates that the bulkhead acts as an effective ground water barrier.
  - Laboratory analyses of sludge samples indicate that bio-degradation of organics in the pond is transpiring.
  - Contaminant migration through the pond dike should be restricted by a synthetic membrane and mud fence which are shown in the design drawings for the dike.
- The disposal of sludge in a secure off-site or on-site facility is not considered practical or economically viable.
- Combustion of the sludge in the existing plant boilers is not feasible due to the high ash content of the sludge.

- The pond can be "dewatered" by pumping the oily water to the WEMCO separator.
- The existing discharge lines to the pond can be rerouted for discharge to the Platty Kill or Kill Van Kull.
- Mechanical dewatering of the sludge is not feasible due to the high solids content of the sludge.
- Chemical dewatering of the sludge is not feasible due to limited availability of proper chemicals, sludge mixing problems, and high costs.
- Dewatering of the sludge using flyash is viable if flyash is available nearby at minimal costs.
- Backfill with soil and inert building debris can be used to encapsulate the pond sludge in-situ.
- Sloppy sludge that is encountered during backfilling can be handled by pumping or by natural air drying or mixing with flyash to facilitate spreading in layers.

Based on these findings, it is recommended that the pond closure strategy detailed in Section 6 of this report be implemented. Closure of the pond will encapsulate the sludge which is a primary cause of the oil problems. The primary steps in the closure program are as follows:

- Reroute present discharge lines.
- Plug existing separator pond effluent lines
- Pump oily water to the WEMCO separator
- Backfill with construction/demolition rubble and soil and compact.
- Stabilize any sloppy sludge with flyash or air drying. Integrate dry sludge with soil backfill operations.
- Install a clay layer over the completed pond.
- Install a monitoring well at the dike.

SECTION 1

INTRODUCTION

1.1 General Background

The Bayonne Industries, Inc., in Bayonne, New Jersey encompasses some 180 acres on what was the original site of the Tide Water Refinery and is responsible for the storage and transshipment of Nos. 2, 4 and 6 fuel oil. In addition, tenants on the property handle and store various chemicals and some tallow. Commodities enter and leave this terminal by ship, barge, tank truck and tank car. The products are generally stored in large tanks, most of which are located in groups and the areas are surrounded by earthen dikes or concrete walls. A general location map of Bayonne Industries, Inc. properties is shown in Figure 1-1.

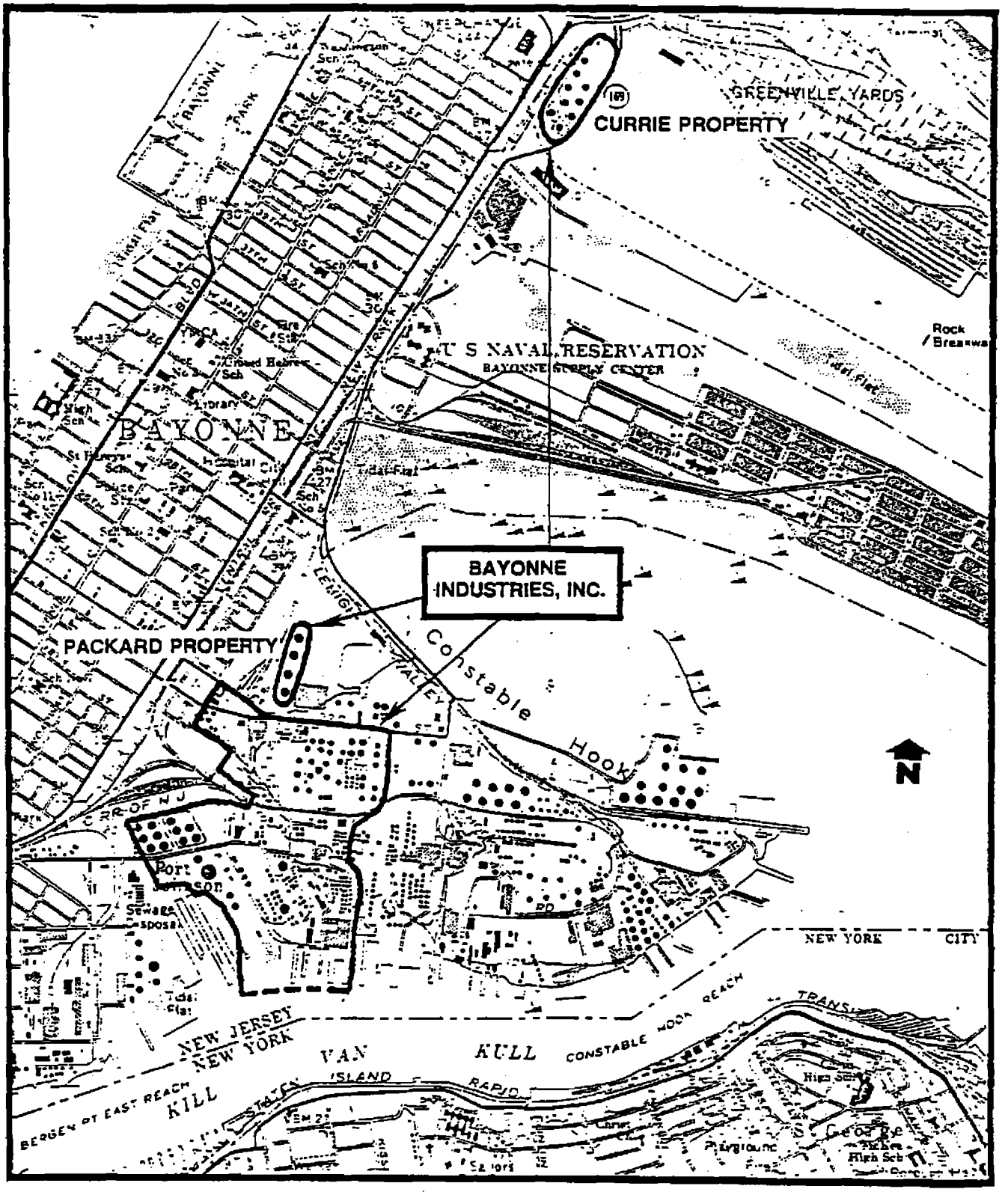
The terminal is serviced by a combined storm and process sewer system. The collected wastewater was being discharged to the separator pond at the head of the Platty Kill. Figure 1-2 is a plot plan showing the locations of the separator pond and the dike in the Platty Kill. In addition to the dike across the Platty Kill, a floating boom in the separator pond is also used to contain and collect oil that is being discharged to the pond through the sewer system. Oil and other floating substances in the pond are being skimmed off continuously. The drain pipes, through the dike located at a lower elevation than the mean low water, discharges water from the pond to the Platty Kill. The process of discharging all waste water to the pond resulted in a buildup of sludge and oily waste in the separator pond at the Bayonne Industries.

A treatment plant has been installed to treat the stormwater and wastewater from Bayonne Industries own operations. This plant started operation on 1 May 1978 and now all wastewater from Bayonne Industries passes through the oil separator before being discharged to the separator pond and eventually into the Platty Kill. However, there are four tenants in the yard discharging their effluents to the separator pond through three separate discharge lines.

1.2 Purpose and Scope

In light of the current contamination problems attributable to the oily sludge in the separator pond, and future stringent pollution regulations, Bayonne Industries, Inc. retained the firm of Roy F. Weston, Inc. (Weston) to provide hydrogeologic engineering and laboratory services required for an assessment of the best method to address the handling

BAYONNE, NEW JERSEY
LOCATION MAP
FIGURE 1.1



SCALE 1 24000

0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

WESTON

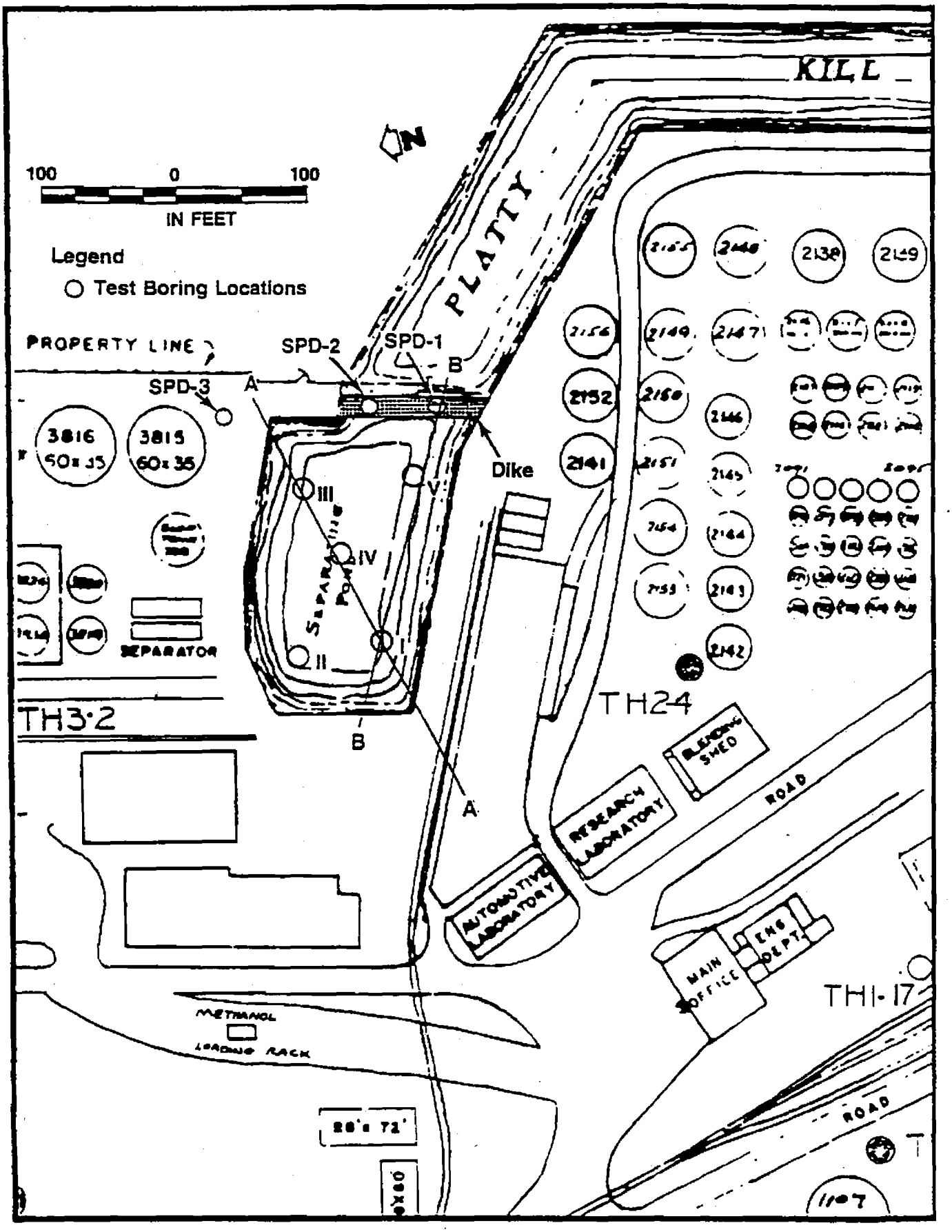


Figure 1-2 Plot Plan

of sludge and oily waste buildup in the separator pond at the Bayonne Industries. The principal objectives of the investigation conducted by Weston were as follows:

- Define the characteristics of the sludge and oily wastes in the pond.
- Determine the thickness of the sludge and oily wastes in the pond.
- Define the nature and distribution of the natural subsurface deposits.
- Assess the feasibility of control alternatives such as:
  a. In-place burial
  b. Excavation and off-site disposal
  c. Excavation and on-site disposal management
  d. In-place fixation
  e. Combination of two or more of the above methods.
- Recommend technically sound and cost-effective alternative for implementation.

SECTION 2

HYDROGEOLOGIC SETTING AND ANALYSIS

2.1 Subsurface Investigations

As a part of the investigation of the control alternatives of the separator pond, a test boring program was undertaken in the pond and in the dike separating the pond from the Platty Kill. The main objectives of this test boring program were:

1. Collect data on the following:
   - Depth of oily water
   - Thickness and nature of the sludge
   - Nature of the subsurface material underlying the sludge
   - Extent of oil or contaminant migration
2. Collect samples of the sludge from different depths and parts of the pond for waste characterization.

The test borings were done from a floating platform in the pond. Borings in the dike were made with a regular hollow-stem auger. A total of seven (7) borings were made, of which five were in the pond and two were in the dike. The approximate locations of these borings are given in Figure 1-2.

Samples of the sludge were collected from different depths in each of the borings in the pond to study the characteristics of the sludge from different depths and from different parts of the pond. Casings were driven through the sludge to different depths and washed out the sludge to the desired depths. Following this, split-spoon was driven to predetermined depths to collect samples from that depth. This process prevented any mixing of the sludge from different zones. Samples thus collected were kept in an ice chest and transported to the laboratory on the same day for proper storage and analysis. Two borings were made in the dike to determine the nature of material in the dike. PVC casings with screens (1-1/2" I.D.) were installed in the borings made in the dike to monitor water and/or oil levels. Boring logs are given in Appendix A.

2.2 Hydrogeology

It can be seen from the cross-sections of the separator pond (Figures 2-1 and 2-2) that the oily sludge in the pond overlies natural red silty clay. The thickness of this clay bed is over seven feet. This clay layer did not show any evidence of oil contamination and it acts as a natural liner for the pond. The thickness of the sludge varied from 11 to 15 feet. The upper three to four feet of the sludge is very light and the sludge becomes more dense with depth.

The design drawing of the dike, Figure 2-3 (Bayonne Industries' Drawing No. A-14-926) indicates that the dike is made up of sand and quarry stone. The drawing also shows a 1/16" nylon reinforced neoprene membrane, suspended by a cable, installed in the dike as an anti-pollution barrier which extends about five feet below the top of a mud fence. The two test borings, SPD-1 and SPD-2, made in dike showed sand to a depth of 27 feet and 25.50 feet respectively. This sand is underlain by red silty clay. This clay layer did not show any evidence of oil contamination. The sand from boring SPD-1 did not show any trace of oil to a depth of 18 feet. Sand below 18 feet had traces of oil, while sand from SPD-2 was oil stained or saturated from a depth of seven feet. The latest monitoring showed an oil thickness of 0.25 foot in well SPD-2 and no oil in SPD-1. This presence and absence of oil in the monitoring wells may be due to the relative locations of the test wells with reference to the location of the synthetic membrane in the dike. Monitoring well SPD-1 may be in the Platty Kill side of the membrane and SPD-2 in the pond side.

It can be seen from Figure 2-1 that the ground water level on the north and south sides of the pond is about two to three feet above the water surface in the pond. This indicates a relatively tight bulkhead construction. The cross section given in Figure 2-2 shows water surfaces in the pond and Platty Kill during high and low tides and also ground water levels in the dike at different tides. The Platty Kill shows three to four feet of tidal fluctuation, whereas the fluctuation in the pond varies by only less than two feet indicating barrier action of the dike.

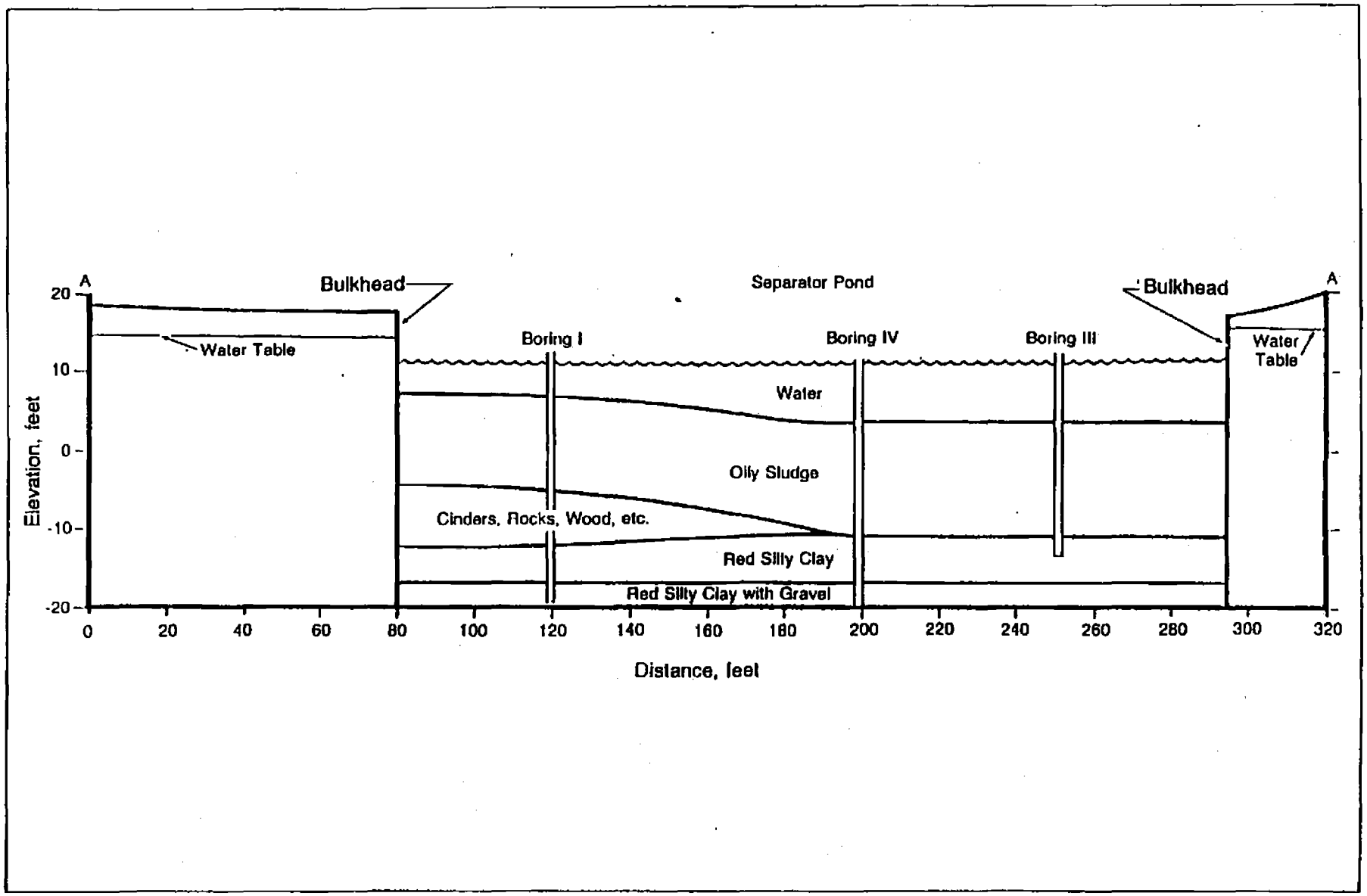


FIGURE 2-1 CROSS SECTION A-A PROFILE OF SEPARATOR POND SHOWING WATER LEVELS, SLUDGE THICKNESS, NATURE OF SUBSURFACE MATERIAL IN THE POND, AND WATER TABLE AROUND THE POND

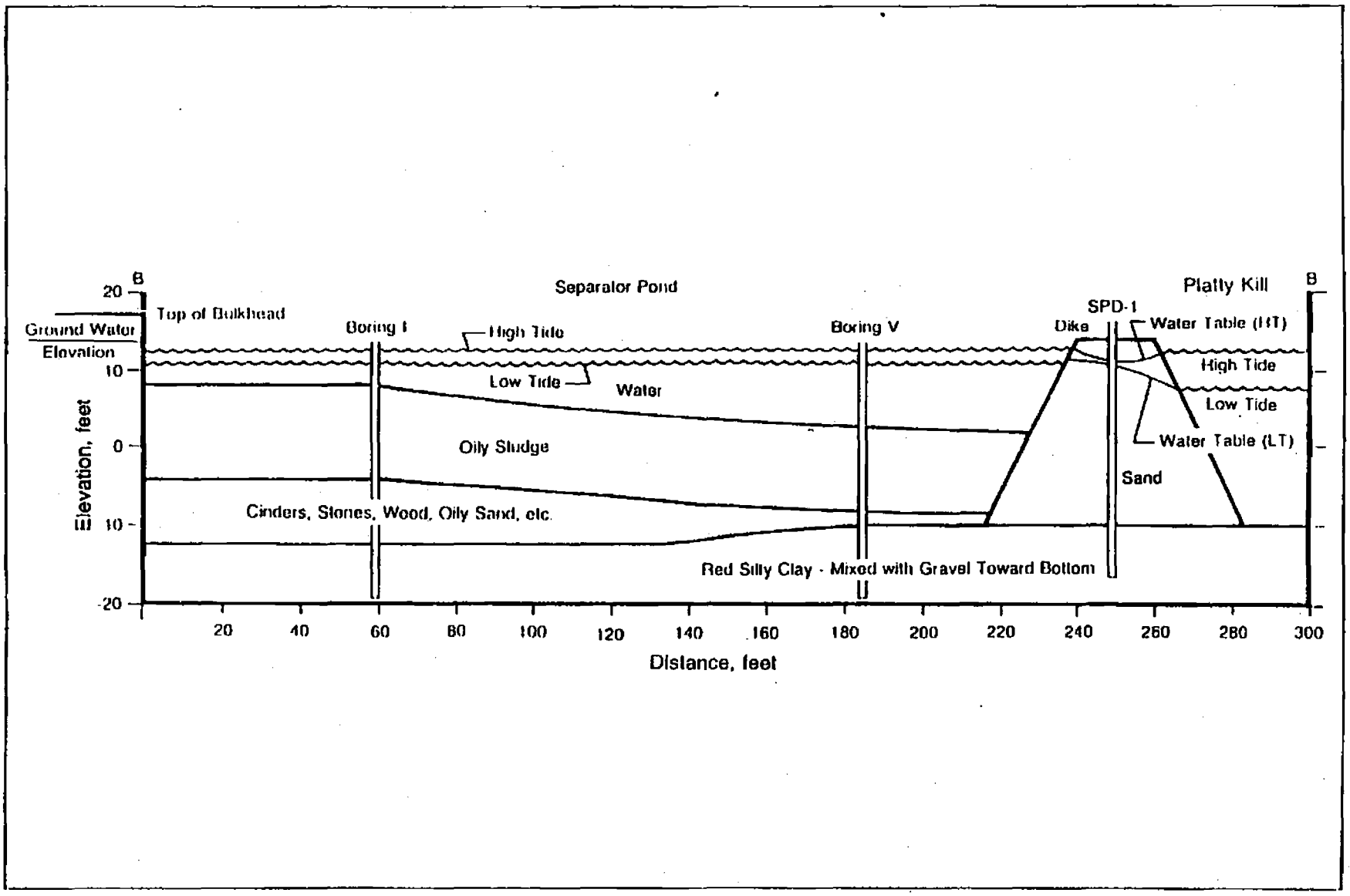
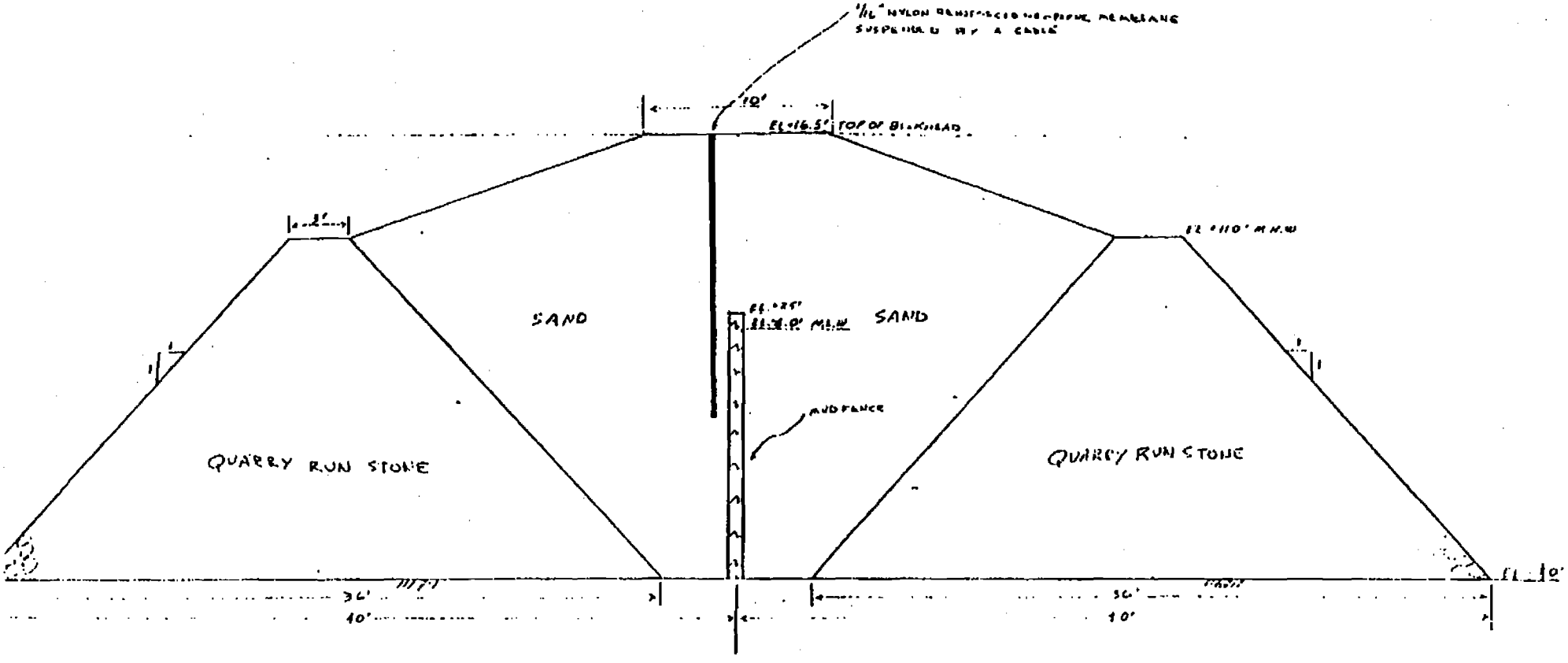


FIGURE 2-2 CROSS SECTION B-B - SHOWING WATER ELEVATIONS IN THE POND AND PLATTY KILL, AND GROUND WATER ELEVATIONS IN THE DIKE AT HIGH AND LOW TIDES



BAYONNE INDUSTRIES INC.
BAYONNE, N. J.

CROSS-SECTIONAL VIEW OF ANTI-POLLUTION BARRIER IN THE PATTY KILL CREEK

DAN BY W.P. 6-19-71 SCALE 1" = 10'

DWG. NO. A-14-726

FIGURE 2-3 EXISTING DIKE CONSTRUCTION

NOTE: THIS IS A REDUCED PRINT

SECTION 3

CHEMICAL ANALYSIS OF SLUDGE

Laboratory analyses of sludge and soil samples taken at various depths at the boring locations in the pond were performed and the results are summarized in Table 3-1. The basic findings from these analyses are as follows:

- Contaminants have not penetrated the clay pond bottom.
- The relatively high iron content, 96.4 mg/kg, found in the clay sample is apparently naturally occurring. This is confirmed from the analysis of a soil sample randomly collected in the plant area which reflected a high iron content.
- The solids content of sludge increases with depth, as expected, due to settling. The value ranges from 44% to 63% solids.
- The levels of lead (Pb) and phenols in the sludge are somewhat elevated, but there is no migration into the clay bottom. Phenol also showed higher concentrations immediately at the WEMCO discharge area and progressively decreases at the far end. Biodegradation of phenol may be transpiring and is, therefore, not anticipated to pose a problem during the pond closure.
- An elevated level of phenol was not found in a sample of the pond water that was analyzed.
- The oil and grease content of the sludge is primarily composed of hydrocarbons.
- Ash content of sludge is extremely high, mostly in the 60% to 80% range.

Table 3-1

Samples Collected 3 July 1979
Bayonne Industries

First Set of Analysis

Sample		COD mg/l	% H_2O	O/G	Hydrc.	Phenol	Fe	Cu	Pb	Cr	Zn	Hg	As	Cd	CN	BTU/lb	Ni
I-1	(5 - 8')	584,800	61	23.7*	24.5	7.3	1.0	2.8	1.9	0.20	0.90	0.83	0.34	<0.00	I	9,396	0.80
I-2	(12 - 16')	560,000	37	18.4*	19.5	12.4	99.7	1.01	2.0	0.06	0.53	0.17	1.6	<0.00	I	4,850	0.17
III-1	(8.5 - 11')	186,700	56	9.6	7.9	1.3	56.6	1.1	2.2	0.16	0.73	0.16	1.5	<0.00	I	4,177	0.16
III-2	(15.5 - 19.5')	73,800	48	9.4	8.8	2.1	64.4	0.97	4.9	0.33	1.5	0.25	1.3	<0.00	I	3,765	0.25
IV-4	(25 - 27' - Clay)	17,200	20	--	--	0.7	96.4	0.02	0.09	0.08	0.07	0.03	0.03	<0.00	<30.0	N/A	0.01

Key
I - Interference
A - Total content can be considered hydrocarbon
All metals and phenol reported on a dry weight basis, units are expressed in mg/kg

Samples Collected 30 August 1979

Second Set of Analyses

Sample		% H_2O	% Ash	Phenol	Hg	Cl	BTU/lb
I-2	(8 - 10')	46.05	61.03	14.7	1.1	11,066	7,622
I-3	(10 - 12')	40.40	65.02	59.6	0.91	10,349	6,865
II-2	(10 - 12')	43.16	60.77	14.9	0.81	8,420	6,268
IV-1	(9.75 - 11')	18.66	19.82	19.5	0.98	11,113	8,129
IV-2	(20 - 22.75')	48.43	79.32	3.8	5.89	11,170	3,505
Pond Water		--	--	0.07	--	--	--

SECTION 4

EVALUATION OF ENGINEERING ALTERNATIVES

Based on the results of the test borings and laboratory analyses of the samples, several technologically viable alternatives for pond closure were identified and engineering analyses were performed to prescreen, identify, and select the methodologies that are expected to be practically and economically viable.

The alternatives of off-site sludge disposal and on-site disposal at a controlled location other than the separator pond were reviewed. Due to the elevated levels of phenol and lead in the sludge, off-site disposal should be in a secure landfill due to potential liability considerations. The two nearest secure landfills are located at Niagara Falls, New York and Cincinnati, Ohio, and the estimated transportation and disposal cost is prohibitive. Problems are also anticipated with the permitting, handling, and interstate transportation of this sludge.

On-site disposal in a suitably prepared area would require the construction of a liner system for leachate control. The shallow water table at the plant is not favorable for the construction of a secure landfill on-site, which would require admixture of the sludge with soil to facilitate filling.

Disposal of the sludge in an alternate facility would require extensive excavation work. This excavation and sludge handling may result in the release of contaminants now bound in the sludge.

Borings in the separator pond indicated a clay layer along the bottom of the pond. Laboratory tests indicated that contaminants have not migrated into the clay and therefore the clay is acting as an effective seal along the pit bottom. Measurements have indicated that the ground water elevation around the outside perimeter of the pond bulkhead is significantly higher than the water elevation in the pond. This indicates that the bulkhead is acting as an effective ground water barrier. Laboratory tests of the sludge also indicated that the phenols are being stabilized, probably due to biodegradation. Based on these findings, the approach of in-situ stabilization was selected as an environmentally controlled and effective means for closure of the pond. These alternatives for in-situ controlled closure are briefly described in the following sections.

4.1 Summary of Engineering Alternatives

Based on the results of field investigations, laboratory analyses and bench scale tests, a series of alternatives for closure of the pond were identified. These alternatives for waste handling are summarized as follows:

Waste Material	Alternative	Findings
1. Oily water	Pump to existing WEMCO separator	Feasible
2. Sludge	Firing in existing boiler	Not feasible due to high ash content
	Mechanical dewatering (centrifuge)	Not feasible due to high solids content
	Dewatering using flyash	Feasible
	Chemical dewatering	Feasible using the proper chemical and process. Ruled out because of limited availability of chemicals and high costs
	Backfill with soil and building debris	Feasible. Any heavy sludge will be encapsulated in-situ with soil backfill
3. Sloppy sludge (bury in pond after drying)	Air drying in sludge drying bed	Feasible but time consuming
	Mix with flyash at pond	Feasible - Preferred alternative, if flyash is available nearby

4.2 Oil Separation

There is an oily water layer approximately 8 to 10 feet deep in the pond, equivalent to about 2,000,000 gallons. The existence of a WEMCO oil separator makes on-site treatment highly feasible by pumping the oily water layer through the WEMCO at a controlled rate. Pump(s) can be set up as shown in Figure 4-1 to transfer the oily water from the pond to the WEMCO. A temporary baffle should be provided around the suction end of the pump to minimize heavy sludge carry over and maximize removal of pumpable liquids which may include some water-sludge interface. Separated oil will be fired as fuel in one of the existing boilers. The pumping rate shall be matched with the separator capacity to maintain compliance with the effluent criteria at all times. This set-up may be used for the entire duration of the closure operation or until the point of practical limitation is reached.

4.3 Sludge Disposal by Combustion in Existing Boilers

An alternative for handling the "pumpable" or "flowable" portion of the sludge is through combustion in the existing Bayonne Industries boilers. The "pumpable" sludge is that sludge with a higher moisture content located at the interface with the oily water. The quantity of this sludge is approximately 1,000,000 gallons.

Bayonne Industries has four 1947 B&W water tube boilers, each rated at 1000 HP and are presently fired with No. 6 fuel oil. The steam generation rate is 100,000 lbs. per hour at 250 psig and 490°F. During the summer months usually one boiler is operating and in winter at least three and occasionally all four boilers are operating.

Each boiler is designed strictly for fuel oil firing. The furnace is not equipped with a grate system nor a hopper for ash removal. Ash is removed manually and intermittently from the flat refractory lined furnace floor whenever the boiler is "cold".

There are four steam atomized oil burners per boiler arranged symetrically with two on the top row and two on the bottom row. The atomizer assembly is removable from the steam-fuel tube (2" Ø standard pipe) where the impeller on the fireside is attached.

There is no thermocouple in the furnace to obtain furnace temperature readings, but it is approximated that the furnace temperature is in the 2000°F range.

Based on Weston's field observation, it seems feasible to employ one of the steam-fuel tubes as a casing for a smaller sludge injection system. However, laboratory results of the sludge characterization analyses showed very high ash content of over 50%. Although the sludge

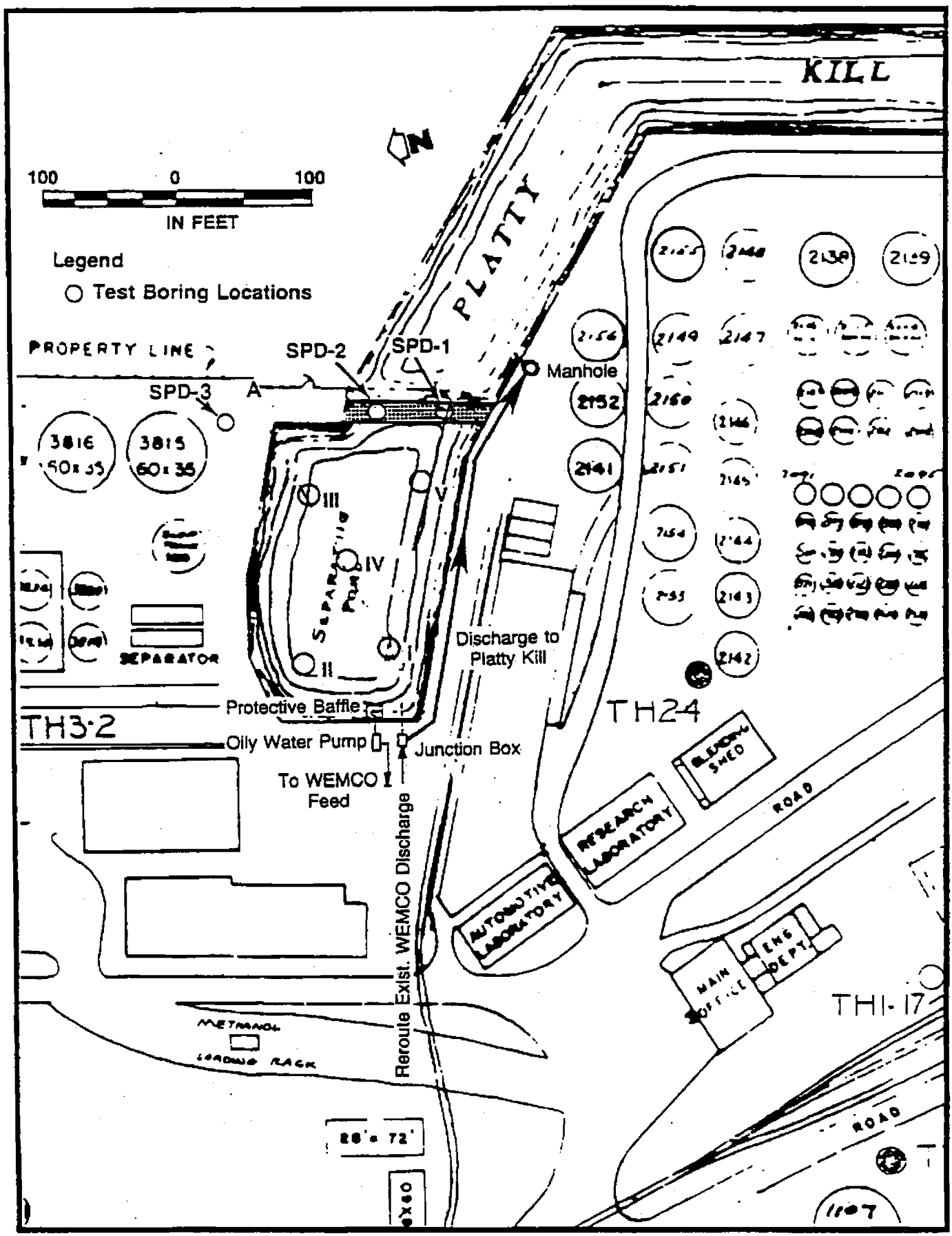


FIGURE 4-1 SCHEMATIC PLAN—REROUTING OF WEMCO DISCHARGE AND OILY WATER PUMPING SYSTEM

heating values of 6000 to 8000 Btu/lb are high and have a positive heat input to the system, the boilers are not designed and properly equipped to burn fuel having such high levels of ash. Non-compliance of the air quality criteria for particulate emissions because of the lack of flue gas cleaning equipment and slagging problems of the tubes due to prolonged burning at elevated temperatures are antitipated; therefore, this alternative is not recommended.

4.4 Sludge Dewatering Prior to Direct Burial On-Site

Alternatives for sludge dewatering were evaluated as a means for improving the sludge handling characteristics during pond closure.

4.4.1 Sludge Dewatering by Mechanical Means

Cursory investigations for dewatering sludge employing centrifuges were made. Sludge would be excavated from the pond, fed through the centrifuge, dewatered and redeposited in the pond. Centrate would be fed to the WEMCO. Based upon the reported solids content in excess of 50%, further efforts of increasing the solids content by mechanical means is not practically feasible and is ruled out.

4.5 Sludge Dewatering Using Dry Flyash

Dry flyash has favorable moisture absorbing characteristics and is a material that may be obtained from the power industry at minimal cost.

4.5.1 Bench Scale Tests

An experiment using flyash as the dewatering agent was performed on a scaled model of the separator pond. Similar tests were performed for the other succeeding dewatering processes. The setup is described in detail in this section.

Using an aquarium tank as the separator pond, the pond profile was simulated. Higher density sludge was set at the bottom of the tank and the sludge with higher moisture content on the top layer for a total sludge depth representing 12 feet. A sludge water interface representing two to three feet was set up next and then oily water was added to simulate a total pond depth of 20 feet. The pond was allowed to settle before proceeding to the next step. At one corner of the "pond" a positive displacement pump was used to pump out all the oily water prior to any backfilling or chemical addition.

The supernatant liquid was carefully pumped to minimize disturbance of the black oily layer(s).

4.5.2 Procedure and Results

Starting from the "dike" end opposite the pump, flyash was dumped across the full width to absorb most of the moisture. The result was a less mashy sludge-ash mix which was more manageable than the original wet sludge. No mixing was performed at this stage to simulate actual operations employing only earth moving equipment. Thorough mixing of the sludge and flyash will entail added costs and may be impractical considering the stiffness of the mix. Spreading of flyash was then followed by backfilling with dirt over the flyash. Compaction of the fill "pushed" and displaced most of the less dense sludge. The compacted fill is sufficiently firm to support a bulldozer or front-end loader so that more fill can be added as the operations progress toward the pumping end. A total of 132 grams of ash (this represents approximately one-half of the final backfilled volume) was added to fully cover the whole pond area without going over the dike elevation. Approximately one-half of the total area remained uncompacted, but covered with flyash. Areas that could be worked with a front-end loader bucket were turned over. In the absence of "rainfall", the pond firmed up in four to seven days.

The results of the tests are interpreted as follows:

- Flyash can definitely be used as a dewatering aid to facilitate drying of the sludge to a firm fill capable of supporting tracked equipment after final cover.
- Using flyash with a calculated density of four lbs. per cu. ft., approximately 500 tons of flyash (equivalent to 2000 cubic yards compacted) will be required in backfilling the pond.
- Approximately 15,000 to 18,000 cu. yds. of dirt will be required in backfilling the pond up to approximately EL 16.00'.
- Only "non-contaminated" dry flyash from power plants should be used to avoid any leachate problems that may ensue.
- Turning over of flyash and sludge hastened the drying operations. Flyash was observed to have good affinity for water. Drying time under actual field conditions may take several weeks due to precipitation instead of one week as observed in the laboratory test.

4.6 Sludge Dewatering by Chemical Addition

Several sludge fixation and stabilization processes were investigated using commercially available proprietary processes and experimentation with inexpensive chemicals commercially available in bulk.

4.6.1 Proprietary Sludge Stabilization Processes

One of the stabilization processes for sludge is the pozzolanic micro-encapsulation of the contaminated materials by means of the IU Conversion Systems, Inc. patented process. The IUCS process would involve excavation of the sludge, mixing of the sludge with the fixing ingredient and return of the mixture to the pond. Based on the laboratory analyses and the nature of the sludge being highly organic, indications are that the success of the process application for chemically stabilizing the contaminants is doubtful. The IUCS process, as well as other fixation processes of this type, have not been successful in chemically binding leachable contaminants in the sludge mixture matrix; however, these processes could be used to physically stabilize and dewater the sludge.

Physical stabilization using this process would require sludge pumping, mixing, and product backfilling which will entail more material handling and cost than the other alternatives. Because of the unlikely success of chemical fixation and prohibitive cost, these processes are ruled out for use at Bayonne Industries.

4.6.2 Sludge Stabilization Experiments

Bench scale tests for sludge stabilization were performed using the following commercially available chemicals having good hardening and water absorption characteristics:

Lime	CaO
Gypsum	$CaSO_4.2H_2O$
Plaster of Paris	$CaSO_4.1/2H_2O$

4.6.2.1 Sludge Stabilization Using Lime

Dry lime (CaO) is readily available in commercial quantities; therefore, its use was explored.

The test "pond" was prepared as described in Section 4.5.1. Starting from the dike, the pond was backfilled with dirt obtained from the Bayonne Industries plant area, firmly compacting the dirt and working towards the opposite end. Soft sludge was displaced. Backfilling was continued until the displaced sludge level was at approximately El. 10.00'. Lime in the dry form was spread over the entire sludge area. Some mixing was simulated. The mixture was allowed to set and dry. The drying time under laboratory conditions took approximately 2 weeks.

The results of the tests are interpreted as follows:

- Lime absorbed some moisture but the sludge-lime mix is relatively soft compared to the area using flyash mixture.
- The reaction is exothermic; however, adding lime directly did not result in any noticeably "violent" reaction.
- An equivalent of approximately 400 tons of lime would be needed.

This alternative is ruled out because of its marginal effectiveness and the extra expenditure for raw material and handling. The use of lime was not as effective as flyash.

4.6.2.2 Sludge Stabilization Using Gypsum

Gypsum ($CaSO4.2H_2O$) or hydrated calcium sulfate has some absorbing values but not as good as the calcined $CaSO_4$. However, gypsum is readily available in commercial quantities.

The test for gypsum was performed using the same procedure described in Section 4.6.2.1 Sludge Stabilization Using Lime.

The results are as follows:

- The resultant mix was soft and setting time was very poor. It will probably take three times as long to dry as the lime mix. On the third week of the experiment, gradual stiffening was observed. This may be attributed more towards natural evaporation process than a chemical action.

This alternative is ruled out because of the very poor bench test results to effectively stabilize the pond. $CaSO_4.2H_2O$ will not work as a stabilizer or a dewatering agent for Bayonne Industries' sludge.

4.6.2.3 Sludge Stabilization Using Plaster of Paris

$CaSO_4.1/2H_2O$, commonly known as plaster of Paris, has excellent moisture absorbing capabilities.

The test was performed using the same procedure described in Section 4.6.2.1 Sludge Stabilization Using Lime.

The results are as follows:

- The resultant mix set up and was firm in 5 days under laboratory conditions.

- An equivalent of approximately 380 tons of $CaSO_4.1/2H_2O$ would be needed. This material is not readily available in commercial quantities.

Although the experiment had good success, this option is ruled out because of the difficulty in obtaining this material in commercial quantities and the extra expenditure for raw material and handling.

4.7 Backfill with Soil

Weston had investigated the cost of obtaining backfill soil. Quotes obtained from local contractors indicate a high price for soil delivered to the site. The possible use and availability of soil on-site was investigated along with non-biodegradable demolition/construction rubble, i.e., concrete, brick and the like. This use of inplant demolition/construction debris as fill material will eliminate associated costs for removal and hauling.

Bench tests were run using soil only in one case, and rubble and soil backfill in the other. The set-up was prepared as described in Section 4.5.1. Dirt used in the tests was obtained from an area at the Bayonne Plant where excess soil could be obtained for backfilling.

The observations are as follows:

- Less dense sludge was displaced as fill dirt volume was increased and compacted. The compacted area was firm and capable of supporting tracked equipment for maneuvering, as the operation progressed towards the other end.

- Approximately 40 to 60% of the total sludge volume was displaced using dirt only.

- When rubble and dirt were used, approximately the same quantity of sludge was displaced. On a small scale the gaps and voids created by bridging of the rubble is relatively small and the interstices occupied by sludge was almost completely replaced by the fill dirt during compacting. However, it is expected that during actual field operations, bulky pieces of rubble will bridge more stably and contain the sludge within the voids. Fill dirt will not significantly replace this sludge.

- A mound of sludge was created as a result of the backfilling operations. The mound area was soft and intermittent turning over of the mound helped speed up the drying of the soft sludge mound.

- Approximately 20,000 cubic yards of soil will be needed.

- Drying time under laboratory conditions took over four weeks.

- Rainfall was simulated over the compacted area and some softening of the encapsulated sludge was observed. However, the fill remained relatively stable to support traffic load.

Based upon the results of all these tests, a pond closure strategy was developed and discussed in detail in the latter section of this report.

SECTION 5

RELOCATION OF DISCHARGE LINES

In conjunction with the pond closure work, all existing discharge lines must be rerouted for direct discharge to the Platty Kill Creek or Kill Van Kull. A preliminary review of grades and elevations indicates that this is possible. This rerouting can be directly from the source or through a junction box/lift station.

All this work must be done prior to the pond closure.

5.1 Tenants

Based upon preliminary field information, the tenants discharge lines may be rerouted as follows: (Additional engineering evaluations will be needed to finalize the rerouting plan.)

5.1.1 White Chemical Company and Southern California Chemical Company

The line from Southern California Chemical Company is reportedly the discharge from a flow batch operation of approximately 50 gpm maximum. This combines with the White's cooling water discharge of approximately 200,000 gal/day. The combined discharge manhole is at invert El. 9.19'±. A lift station may be used to reroute this discharge to the Platty Kill or Kill Van Kull.

5.1.2 Rona

A 30-inch line at invert El. 8'± at the pond handles Rona's discharge of 100 gpm. A lift station may be installed to intercept the discharge and the force main can be routed directly to the Platty Kill.

5.1.3 Metropolitan Rendering

The discharge from this plant may be rerouted by gravity because of its proximity to the pond and a higher starting elevation of approximately El. 19'.

SECTION 6

RECOMMENDED POND CLOSURE STRATEGY

Based upon the results of Weston's investigations, a pond closure strategy was developed and the cross-section of the completed pond is shown in Figure 6-4.

6.1 Sequence of Operations for Closure

The sequence of operations for closure are as follows:

1. Divert all discharge lines from the pond to the Platty Kill or Kill Van Kull. The existing pond effluent lines should be plugged.

2. Pump oily water to the WEMCO separator at a controlled rate. A minimum of 2,000,000 gallons will be pumped. The pump installation must remain until the final covering step. See Figure 6-1 for the existing separator pond profile which shows the depths of the various components of the pond.

3. Starting from dike end, begin backfilling with construction rubble across the full width of the dike to approximately El. 5.00'. Cover with fill dirt obtained from site and compact to approximately El. 6.00'. Fill dirt may be used in place of rubble if rubble is not available. See Figure 6-2, Initial Backfill Stage.

4. Fill and compact as much area as possible until the displaced sludge elevation is approximately level with the compacted dirt. Any pumpable water that may be WEMCO separated must be pumped to the separator as it is collected during the operations.

5. The less dense or sloppy sludge that can be pumped out by a vacuum truck should be pumped and spread in an approximately four-inch layer over the backfilled area. Flyash, if available, must be spread over the soft layer of sludge to firm it up. If this less dense sludge cannot be pumped, it should be stabilized with flyash and scooped out with a loader, backhoe or clam shell and spread in layers over the dirt fill as shown in Figure 6-3, Intermediate Backfill Stage.

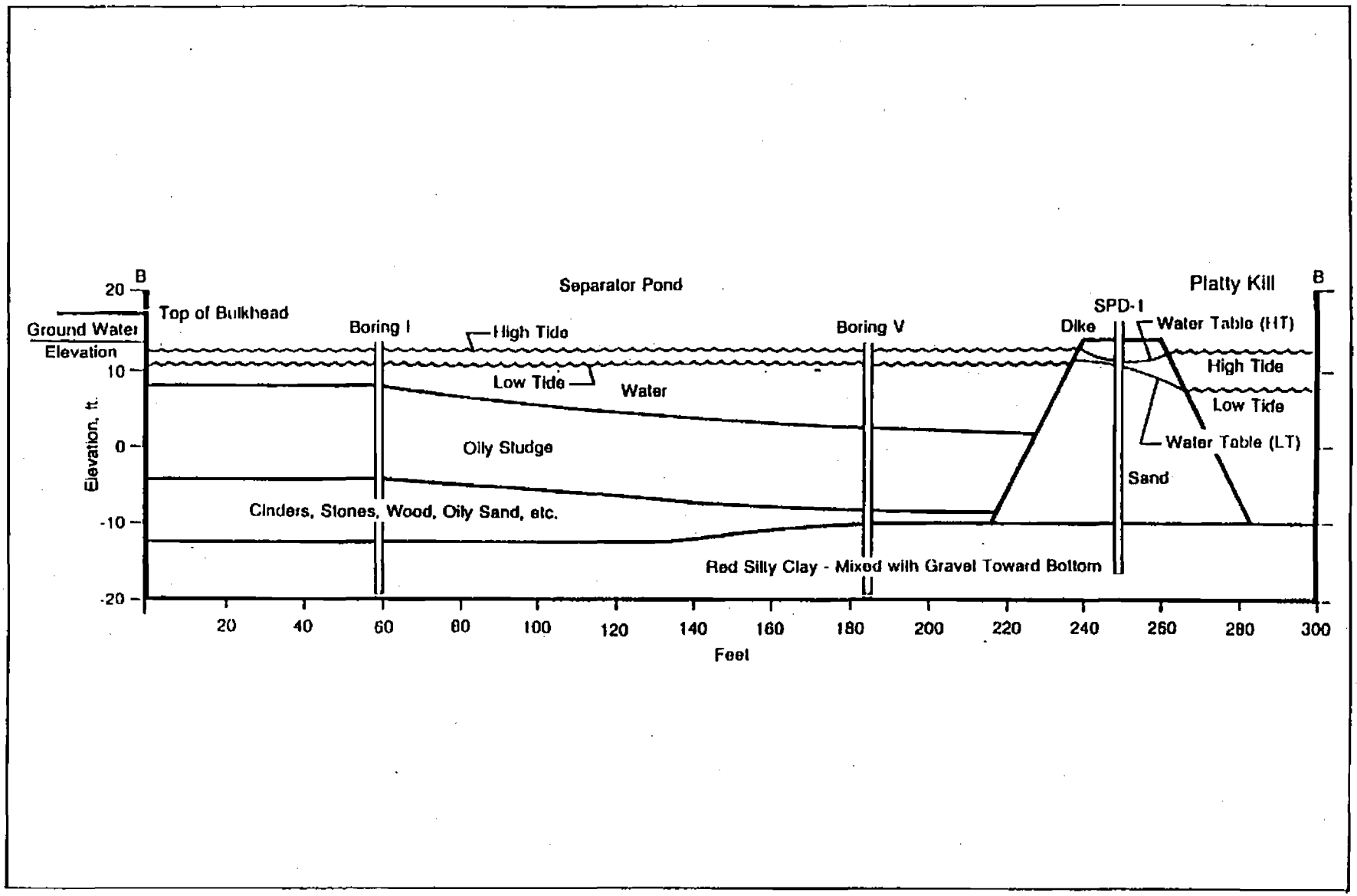


FIGURE 6-1 SECTION B-B —PROFILE OF THE EXISTING POND

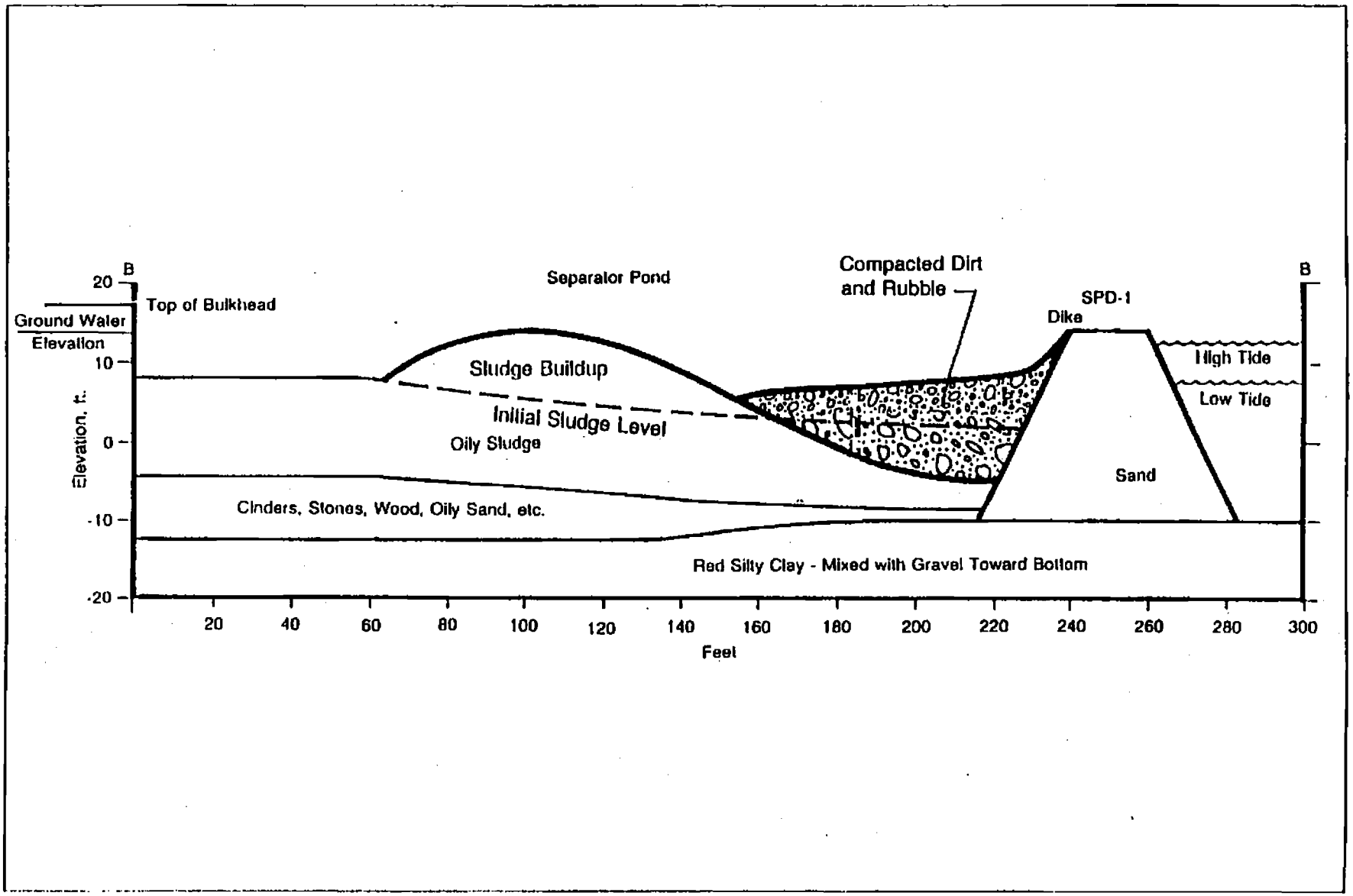


FIGURE 6-2 INITIAL BACKFILL STAGE

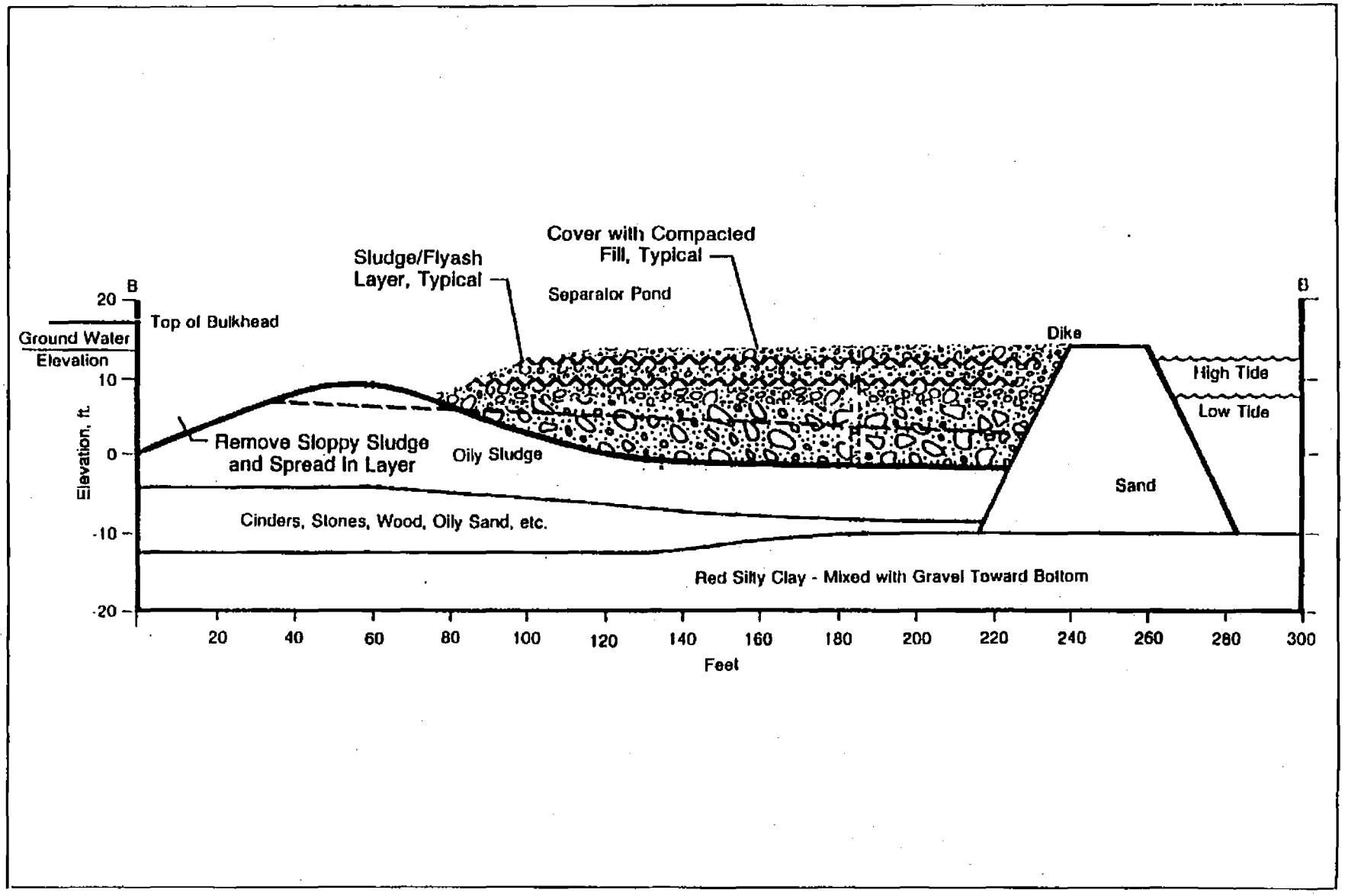


FIGURE 6-3 INTERMEDIATE BACKFILL STAGE

6. Cover the sludge/flyash layer with a one-foot layer of dirt.

7. Repeat the operations as required until the total fill height is at El. 16.00'. This is approximately one foot below the top of the pond bulkhead.

8. Resume backfilling with rubble and/or dirt in other areas of the pond.

9. If flyash is not available, the pumped out sludge should be spread at the slop pond area or over the dirt backfilled area, if field conditions permit, for drying. Once dried, the sludge can be encapsulated in the fill. This operation will entail longer time because of the sludge drying stage, which may take up to four weeks without heavy precipitation.

10. Install a two-foot thick layer minimum of compacted soil with high clay content over the top of the pond to a final grade that will prevent surface water infiltration. See Figure 6-4 for the completed pond section.

11. If necessary, any major leaks in bulkheads and dike should be plugged to prevent ground water and tidal flow into the pond.

12. Upon completion of the pond closure work, two ground water monitoring wells will be installed in the dike at a location outside the existing liner. Sheet piling will be installed if there is any evidence of oil migration through the dike.

13. It is anticipated that methane gas generation is negligible. However, two gas venting pipes will be installed as determined by field conditions.

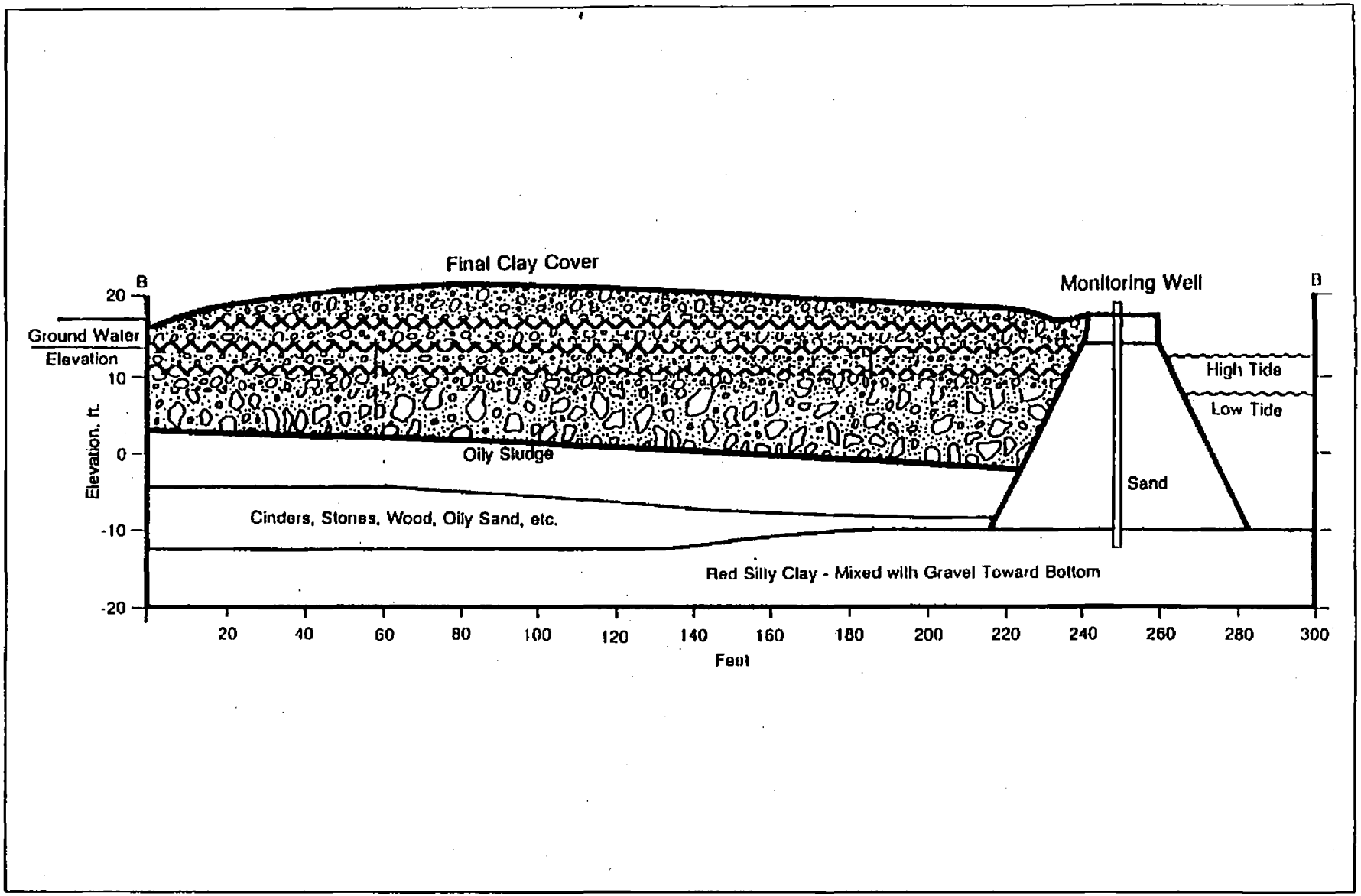


FIGURE 6-4 FINAL BACKFILL STAGE

APPENDIX A

TEST BORING LOGS

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
John J. Trela, Ph.D., Acting Director
CN 028
Trenton, N.J. 08625
609 - 292 - 1250

X Cen

Mr. Steven L. Gordon
Beveridge & Diamond, P.C.
101 Park Avenue
Suite 2506
New York, NY 10178

12 SEP 1986

RE: Bayonne Industries, Inc.
Lot 2, 4, Block 381,A
Bayonne City, Hudson County
#N62712

Dear Mr. Gordon:

This is in response to your letter dated 08/15/86 concerning the applicability of the Environmental Cleanup Responsibility Act (ECRA) to the initiation of a lease for the above referenced premises. On the basis of the sworn statements set forth in the affidavit signed by Thomas B. Coleman and William H. Koeck, the Department finds that this transaction is not presently subject to the provisions of ECRA.

This decision is made in light of the absence of a transaction covered by the Act, specifically initiation of a lease. Any inaccuracies in the affidavit or subsequent changes in the facts as stated therein could alter the Department's determination.

The current inapplicability of the Environmental Cleanup Responsibility Act (ECRA) to this transaction does not relieve the above referenced of any responsibilities under any other environmental statutes, regulations or permits.

Moreover, this determination of ECRA nonapplicability does not constitute any finding by the New Jersey Department of Environmental Protection as to the current site condition or the existence or non-existence of any hazards to the environment at this location.

New Jersey Is An Equal Opportunity Employer

CCH000002

Mr. Steven L. Gordon

Should you have any further questions regarding this matter, please contact Arthur Trenham at (609) 633-7141.

Sincerely,

Barbara Stroilo

Barbara Stroilo, Supervisor
Applicability Section
Bureau of Industrial Site Evaluation

HS70:dr

Art. be Very careful (sounds subject to me)

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NUMBER N62712

DATE RECIEVED 8-18-86

FEE 100.00

NAME Steven L. Gordon

AFFILIATION: BEVERIDGE & DIAMOND, P.C

ADDRESS: 101 PARK AVENUE, SUITE 2506

PO BOS:

CITY: NEW YORK

STATE, ZIP: N.Y. 10178

COMPANY NAME: BAYONNE INDUSTRIES INC

COMPANY Address

COMPANY CITY:

MUNICIPALITY (CITY, TOWNSHIP, BOROUGH): BAYONNE

COUNTY: HUDSON

LOT(S): 2, 4

BLOCK(S): 381, A

DATE OF INCOMING LETTER: AUGUST 15, 1986

AFFIDAVITS: THOMAS B. COLEMAN, WILLIAM H. KOECK

TRANSACTION TYPE: LEASE

SIC# DATE OF SUPP INFO: 9-8-86

DATE TYPED: SUBJECT(EITHER YES OR (NO) NO

CONTACT: ARTHUR TRENHAM DATE MAILED:

LETTER (EITHER 1, 2, (3) or 4 CORRESPONDING TO WHICH NONAPP LETTER USED)

(NOTE)

WHEN CALLING TO GET SUPPLEMENTAL INFORMATION or CHECK to be SUBMITTED REFER TO THE LOG NUMBER ASSIGNED TO ORIGINAL DOCUMENT

****

1-316 will send Suppl. from Symbols

9-11-86 Rec Suppl.

Date Rec'd $20.00

Check or M.O. No. 1069

Amount Paid 100.00

EDRA Fee 100.00

New Jersey Is An Equal Opportunity Employer

LAW OFFICES
BEVERIDGE & DIAMOND, P. C.
SUITE 2506
101 PARK AVENUE
NEW YORK, N.Y. 10178

TELEPHONE
(212) 557-3355
TELECOPIER
(212) 682-7531

STEPHEN L. GORDON
JOHN FRENCH III
ROBERT C. WILLIAMS
GAINES GWATHMEY, III
HENRY L. DIAMOND *
ALBERT J. BEVERIDGE, III *
HAROLD HIMMELMAN *
ALEXANDER W. SIERCK *
JOHN S. GUTTMANN *
ROBERT BRAGER *
R. PAUL BEVERIDGE *

*RESIDENT IN DISTRICT OF COLUMBIA

1333 NEW HAMPSHIRE AVENUE, N. W.
WASHINGTON, D. C. 20036
(202) 828-0200

BEVERIDGE & DIAMOND
ONE BRIDGE PLAZA
FORT LEE, NEW JERSEY 07024
(201) 585-8162

August 15, 1986

Express Mail - Return Receipt Requested

RECEIVED
AUG 18 3 28 PM '86
DIVISION OF
WASTE MANAGEMENT
HSMA-BISE

Ms. Barbara Strollo, Supervisor
Applicability Section
Bureau of Industrial Site Evaluation
N.J. Department of Environmental Protection
CN 028
Trenton, New Jersey 08625

Re: Determination of Nonapplicability, Bayonne Industries, Inc.

Dear Ms. Strollo:

On behalf of our client Bayonne Industries, Inc. we enclose an affidavit requesting a determination of nonapplicability and a certified check in the amount of $100, payable to the order of the New Jersey Department of Environmental Protection.

Please notify us immediately at the address or telephone number above as soon as you have reached a decision. Thank you for your consideration and effort.

Very truly yours,

Stephen L. Gordon

Stephen L. Gordon

Encl.

ECRA 006 9/85

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT
FEE COLLECTION STATUS FORM

Name of Industrial Establishment _____
Notice Number N102712
Municipality _____
County _____

Tr. #	Activity		Fee	Amount Paid	Check #	Date	Balance Due
____	1	Initial Notice	$ 1,600	____	____	____	____
____	1A	Initial Notice (Small Business)	$ 500	____	____	____	____
____	2	Sampling Plan	$ 1,000	____	____	____	____
____	3	Underground Tank(s)	$ 50	____	____	____	____
____	3A	Each Additional Tank	$ 50	____	____	____	____
____	4	Negative Dec. Review	$ 500	____	____	____	____
____	4A	Negative Dec. Review (Small Business)	$ 200	____	____	____	____
____	5	Cleanup Plan Review Cost of Cleanup					
____	5A	a. $1.00-$9,999	$ 500	____	____	____	____
____	5B	b. $10,000-$99,999	$ 1,500	____	____	____	____
____	5C	c. $100,000-$499,999	$ 5,000	____	____	____	____
____	5D	d. $500,000-$999,999	$10,000	____	____	____	____
____	5E	e. Over $1,000,000	$15,000	____	____	____	____
____	6	Oversight of Cleanup Plan Implementation					
____	6A	a. 1-14 days	$ 400	____	____	____	____
____	6B	b. 15-30 days	$ 700	____	____	____	____
____	6C	c. 31-90 days	$ 1,000	____	____	____	____
____	6D	d. 91-120 days	$ 1,500	____	____	____	____
____	6E	e. Over 120 days	$ 2,000	____	____	____	____
____	7	Cleanup Deferral	$ 1,000	____	____	____	____
736-11	8	Applicability/ Nonapplicability Determination	$ 100	100.00	1689	8-20-86	-0-

TOTAL AMOUNT PAID TO DATE 100.00 TOTAL BALANCE DUE -0-

Date of Phone Call to Company _____

Person Contacted _____

TOTAL PAID _____
WHEN CASE CLOSED
SIGNATURE _____

FOR FILE USE ONLY

AFFIDAVIT OF THOMAS B. COLEMAN

The purpose of this Affidavit is to obtain an applicability/nonapplicability determination from the New Jersey Department of Environmental Protection pursuant to the Environmental Cleanup Responsibility Act, N.J.S.A. 13:1K-6 et seq.

STATE OF LOUISIANA)
PARISH OF _____) SS. DATE 9/9/86

I, Thomas B. Coleman, President of Bayonne Industries, Inc., of full age, being duly sworn according to law make the following statements of fact:

A. Current Owner of the Property for which an Applicability/Non-applicability Determination is requested:

Bayonne Industries, Inc.

Street Address East 22nd Street, P.O. Box 67 0
Municipality Bayonne, State New Jersey Zip Code 07002

Date of Planned Acquisition of Closure or Other Relevant Transaction: September 15, 1986

B. Property for which request is being submitted:

Street Address n/a

Tax Block(s) 381,A Tax Lot(s) 2, 4

Municipality City of Bayonne County Hudson

State New Jersey Zip Code 07002

C. Describe the transaction for which applicability/non-applicability determination is requested (Closing, Selling, etc.), including name and address of the purchaser:

A lease of approximately 6 acres of the parcel identified as Tax Block 381,A, Tax Lots 2, 4

DEP USE ONLY

Notice No. _____

Fee Paid _____

D. Operations:

Note: The Property Owner must describe the operations and processes conducted at the site including a list of all the tenants, their operations and processes, occupying any part of the property since December 31, 1983. (Attach additional sheets if necessary.)

Name of Business On February 1, 1986 E. W. Saybolt & Company, Inc. located a portable office building on a portion of the site. This facility is on a month to month lease and is engaged in analyzing petroleum samples for companies in the area on a contract or fee basis. IMTT-Bayonne operates a tank terminal on the contiguous property.

Address n/a

Municipality City of Bayonne County Hudson

State NJ Zip Code 07002 Telephone No. n/a

Standard Industrial Classification (SIC) Number Commercial Testing Lab SIC #7397. SIC # for tank terminal is 51.

Tax Block(s) 381 A Tax Lot(s) 2, 4

Description of Operations and Processes (Attach additional sheets if necessary.)

Same as above.

How is the Building(s) Heated? Electricity

E. Hazardous Substances or Wastes:

List all types and quantities of hazardous substances or wastes including petroleum products that are generated, manufactured, refined, transported, treated, stored, handled or disposed at the property, both above and below ground which are included in the Department's "List of Hazardous Substances" at Appendix A of N.J.A.C. 7:1E and any amount of any waste substances required to be reported to the Department on special waste manifest forms pursuant to N.J.A.C. 7:26-74, designated as a hazardous waste pursuant to N.J.A.C. 7:26-8, or as otherwise provided by law. (Attach additional sheets if necessary.)

The small laboratory analyzes petroleum samples for companies in the area. After analysis, the samples are shipped to the Kenilworth, NJ facility of Saybolt.

F. Previous owners and history of on-site activities since January 1982.

NAME	ADDRESS	OPERATIONS

Southern California Chemical Co. Inc. leased a building on the site in question. The lease expired on December 14, 1982. The building was demolished and the demolition was completed by November 15, 1983. Only a concrete pad remains from the building and a subsurface septic tank which received the sanitary wastes from the office portion of the building.

G. Individual to whom Applicability/Nonapplicability Determination should be addressed:

Name Mr. Stephen L. Gordon

Address Beveridge & Diamond, 101 Park Avenue, Suite 2506 City New York

State New York Zip Code 10178 Telephone No. (212) 557-3355

H. CERTIFICATIONS:

a. I, Thomas B. Coleman, hereby certify that I am the President of Bayonne Industries, Inc., the owner of the above subject property and that the information furnished on this application is true. I am fully aware that any person who knowingly gives or causes to be given any false information or who fails to comply with the provisions of ECRA or N.J.A.C. 7:1-3 and 4 shall be liable to a penalty of not more than $25,000 for each offense. Furthermore, I am fully aware that any authorized officer or management official who knowingly directs or authorizes the violation of any provisions of ECRA or N.J.A.C. 7:1-3 and 4 shall be personally liable for penalties of not more than $25,000 for each offense. Failure to comply with the provisions of ECRA may be cause for the possible voiding of the transaction.

Signature of Affiant _____

Date 8/8/86

Sworn to and Subscribed Before Me
on this 8th
Date of August 1986

_____
Notary

ECRA-004
8/86

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT INVOICE

Distribution:
White - Return with check
Yellow - Applicant copy
Pink - ECRA File

INITIAL NOTICE NO.	INDUSTRIAL ESTABLISHMENT	BILLING DATE	TOTAL AMT. DUE	AMOUNT PAID
N62712	Stephen L. Gordon	09-10-86	$100.00	

9-12-86
Called Cashier and
and money.
CF

SERVICE TYPE	AMOUNT
Non-Applicability Determination	100.00

Beveridge & Diamond, P.C.
101 Park Ave
New York, N.Y. 10178

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Ajt

Supp

NUMBER N62712

DATE RECIEVED 9-8-86

FEE NO

NAME Stephen L. Gordon

(NOTE)

WHEN CALLING TO GET SUPPLEMENTAL INFORMATION or CHECK to be SUBMITTED REFER TO THE LOG NUMBER ASSIGNED TO ORIGINAL DOCUMENT

****
****

AFFILIATION: _____

ADDRESS: _____

PO BOX: _____

CITY: _____

STATE, ZIP: _____

COMPANY NAME: _____

COMPANY NAME: _____

COMPANY CITY: _____

MUNICIPALITY(CITY,TOWNSHIP,BOROUGH): _____

COUNTY: _____

LOT(S): _____

BLOCK(S): _____

DATE OF INCOMING LETTER: _____

AFFIDAVITS: _____

_____

TRANSACTION TYPE: _____

SIC# _____ DATE OF SUPP INFO: _____

DATE TYPED: _____ SUBJECT(EITHER,YES OR NO) _____

CONTACT: _____ DATE MAILED: _____

LETTER (EITHER 1,2,3, or 4 CORRESPONDING TO WHICH NONAPP LETTER USED)

Date Rec'd .....
Check or M.O. No. .....
Amount Paid .....
ECRA Fee .....

New Jersey Is An Equal Opportunity Employer

LAW OFFICES
BEVERIDGE & DIAMOND, P. C.
SUITE 2506
101 PARK AVENUE
NEW YORK, N. Y. 10178

TELEPHONE
(212) 557-3366
TELECOPIER
(212) 682-7531

STEPHEN L. GORDON
JOHN FRENCH III
GAINES GWATHMEY, III
HENRY L. DIAMOND*
ALBERT J. BEVERIDGE, III*
HAROLD HIMMELMAN*
ALEXANDER W. SIERCK*
JOHN S. GUTTMANN*
ROBERT BRAGER*
PETER JOHN SACRIPANTI

* RESIDENT IN DISTRICT OF COLUMBIA

1333 NEW HAMPSHIRE AVENUE, N. W.
WASHINGTON, D. C. 20036
(202) 828-0800

BEVERIDGE & DIAMOND
ONE BRIDGE PLAZA
FORT LEE, NEW JERSEY 07024
(201) 585-8162

September 5, 1986

RECEIVED
SEP 8 9 31 AM
DIVISION OF
WASTE MANAGEMENT
HSMA-BISE

FEDERAL EXPRESS

Mr. Arthur Trenham
Bureau of Industrial Site Evaluation
N.J. Dept. of Environmental Protection
CN 028
Trenton, New Jersey 08625

Re: Affidavit of William N. Koeck-Supplement to N62712

Dear Mr. Trenham:

Pursuant to your request, enclosed please find the affidavit of William N. Koeck-Supplement to N62712 of E.W. Saybolt Company, Inc. This affidavit was requested by you in the determination of nonapplicability with regard to the proposed lease of land at the Bayonne Industries facility.

If you have any questions regarding this matter, please contact me at the above address.

Very truly yours,

Stephen L. Gordon

Encl.

AFFIDAVIT OF WILLIAM N. KOECK - SUPPLEMENT TO N 62712

STATE OF NEW JERSEY)
) ss:
COUNTY OF Union)

DATE September 4, 1986

I, William N. Koeck, Metropolitan Area Manager, E.W. Saybolt & Company, Inc., of full age, being duly sworn according to law make the following statements of fact:

1. E.W. Saybolt & Company, Inc., 400 Swenson Drive, Kenilworth, New Jersey 07033 maintains a portable office building on property which it leases from IMTT-Bayonne. Samples of petrochemicals are accepted at this facility and a API gravity analysis is conducted. No testing is done at the IMTT-Bayonne facility. The samples are removed from the IMTT-Bayonne facility within 48 hours of arrival and are sent to the E.W. Saybolt facility located in Kenilworth, New Jersey for testing and disposal.

2. The only chemical at this E.W. Saybolt facility other than as mentioned above, is a non-petroleum based cleaner which is provided by Safety-Kleen. The cleaner is used to clean sampling equipment and, after use, the cleaner is put back in the drum. The drum contents are reused and Safety Kleen Corp. replaces the drum and its contents weekly. Safety Kleen Corp. is located at 777 Big Timber Road, Elgin, Illinois.

3. One of Saybolt's standard industrial classification (SIC) numbers is 7397. Commercial Testing Lab.

4. The portable office at the IMTT-Bayonne facility is heated by electricity.

5. The EPA generator number for this facility is NJ 0000768093.

6. Certifications:

I, William N. Koeck, hereby certify that I am the Metropolitan Area Manager of E.W. Saybolt & Company, Inc., and that the information furnished on this application is true. I am fully aware that any person who knowingly gives or causes to be given any false information or who fails to comply with the provisions of ECRA or N.J.A.C. 7:1-3 and 4 shall be liable to a penalty of nor more than $ 25,000 for each offense. Furthermore, I am fully aware that any authorized officer or management official who knowingly directs or authorizes the violation of any provisions of ECRA of N.J.A.C. 7:1-3 and 4 shall be personally liable for penalties

of not more than $ 25,000 for each offense. Failure to comply with the provisions of ECRA may be cause for the possible voiding of the transaction.

Signature of Affiant William R. Hoock

Date 9-4-86

Sworn and subscribed before me
on this 4th day of Sept. 1986

Mary E. Adams
Notary

MARY E. ADAMS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires June 23, 1991

Remedial Action Selection Report
for the
Closure of the Platty Kill Pond

Submitted to NJDEP by Bayonne Industries, Inc.

December 1999

CCH000003

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1 Introduction

Bayonne Industries, Inc. (BI) is proposing to close the Platty Kill Pond by stabilization/solidification of the sediments in the pond. The material is a combination of hydrocarbon contaminated soils and residual biomass from the bioremediation program that was conducted from 1991-1995. This material overlies a sand layer with a thickness ranging from 2-10 feet. The sand layer rests atop a relatively flat, glacial clay that has been measured to be no less than 6 feet thick. BI proposes to mix stabilization reagents with the material (including the sand layer) in order to permanently fix the contaminants of concern into a monolith of extremely low permeability. The elevated concentrations of arsenic and lead, along with any other metals present, will be chemically stabilized in the cementious structure and rendered non-leachable.

The pond is located in the midst of a 200 acre industrial complex with no potential for public access to the immediate area. The brackish groundwater in the area has no practical utility as a source of drinking water (forbidingly high TDS) and the pond closure could not adversely impact any wetlands in the vicinity of the facility. The main concern after the bioremediation effort was that the metals concentrations in the residual material contributed to a leachate that is unacceptably high (by TCLP standards) in arsenic and lead concentrations. The hydrocarbons that remain are largely non-volatile tars that do not pose as great a threat to the groundwater and subsequent ecological receptors.

The groundwater discharges to surface water and may be impacting ecological receptors in the Kill van Kull. The contribution of the pond to the overall contamination of the groundwater that drains to the Kill Van Kull has not been determined, but is expected to be negligible. BI is currently operating under an MOA to address the site-wide contamination. The groundwater is one of the impacted areas to be addressed. Free product plumes exist around the facility and are the immediate priority of the remediation effort at IMTT-Bayonne.

The selected remedy for the residual material at the bottom of the Platty Kill Pond has been chosen for its ability to protect the groundwater from the contaminants contained in the material and to prevent the material from becoming re-contaminated by the surrounding product plumes and groundwater.

1.1 Facility Background

The Bayonne Industries, Inc. site is located on the east side of the city of Bayonne, in Hudson County, New Jersey, in an area often referred to as the Constable Hook. Figure A-1 presents a site location plus 1-mile vicinity map of the area, prepared from U.S. Geological Survey 7.5-Minute Quadrangles. This map shows the current site boundaries, local topography, general surface water drainage, and general land use patterns. A detailed site plan is included with Figure A-1 in Appendix A. Since 1956, the site has been used by Bayonne Industries and its lessees as a bulk liquid terminal providing storage and trans-shipment services for fuel products, fuel-related products, plasticizers, paraffins, and other chemicals. Liquid materials are received and shipped by marine vessels, tank trucks, railcars and pipeline. The products are stored in large aboveground tanks surrounded by dikes providing spill containment. Bayonne Industries does not own the product stored, but simply provides warehousing and transfer services. Accordingly, inventory is always strictly monitored by third parties. Prior to 1956, the site was part of a larger configuration of a Tidewater Oil Company

refinery operation which began in the 1870s.

1.2 Pond History

1.2.1 Remedial Alternatives Analysis Summary

In November 1979 Bayonne Industries (under previous ownership) submitted a report to NJDEP, Division of Water Resources entitled Evaluation of Control Alternatives for the Separator Pond, prepared by Roy F. Weston consultants. This report recommended in-situ fixation and encapsulation as a remedial alternative for the Platty Killl Pond. A copy of this report is provided as Appendix B. In February 1981, the NJDEP, Division of Coastal Resources approved the closure plan and issued a permit to perform the work. The Army Corps of Engineers also processed a permit application and were willing to issue a permit pending prior approval of the closure plan by NJDEP, Bureau of Hazardous Waste Engineering. Discussions between the NJDEP, Bayonne Industries and Weston continued into 1983.

In late 1983 the present ownership acquired Bayonne Industries, Inc., at which time an evaluation of alternatives to the Weston recommended pond closure was conducted. These alternatives included the following:

- Excavation and incineration
- Construction of a slurry wall between the pond and canal
- Excavation, dewatering and off-site disposal
- Mechanical dewatering and off-site disposal
- Excavation and landfarming onsite

In a letter dated December 4, 1987, Bayonne Industries provided the NJDEP, Division of Water Resources with a revised alternative for closure of the separator pond. This revised alternative proposed to sever the hydraulic connection between the pond and the canal and remove the sludge. The sludge was to be land-farmed with bio-augmentation on a 2-acre plot within the facility boundaries. The resulting study to confirm the integrity of the dam determined that a slurry wall was not necessary because the pond level is not significantly affected by changes in the canal level.

On August 18, 1988 the NJDEP, Division of Coastal Resources approved a Waterfront Development permit for Bayonne Industries to undertake remedial actions to move the discharge of the effluent from the stormwater treatment plant from the pond directly into the Platty Kill Canal and to effectuate the reclamation of the sludge lagoon. The work was to be conducted under the supervision of the NJDEP, Division of Hazardous Waste Management's Metro Bureau of Field Operations and the NJDEP, Division of Water Resources Metro Bureau of Regional Enforcement. One of the conditions of the permit was that the sludge contained in the pond would be treated in an area and manner to be subsequently approved by the NJDEP, Division of Hazardous Waste Management.

Following receipt of the Waterfront Development permit, BI submitted a letter, dated September 15, 1988, to NJDEP, Division of Hazardous Waste Management, Bureau of Hazardous Waste Engineering, outlining in-situ bioremediation of the sludge in the pond. The letter also explained the proposed approach to investigating the integrity of the existing earthen dike between the pond and the canal. Upon completion of the bioremediation, a decision would then be made

as to the ultimate disposal of the treated material. It was anticipated that BI would be allowed to leave the treated material in place, and the pond filled with clean fill.

In a letter dated January 17, 1990, the NJDEP, Division of Water Resources conditionally approved Bayonne Industries' proposed plan for the Platty Kill Pond. This approval was based on treatability study performed by contractor ENSR following a successful EPA demonstration project at French Creek, Texas. BI began active bioremediation of the sludge in the pond in the late summer of 1990.

1.2.2 Current Status of Pond Remediation

Upon termination of the bioremediation program for the pond, BI evaluated the possibility of stabilizing the residual sludge. This stabilization was targeted at binding the residual metals concentrations and reducing permeability such that groundwater intrusion and subsequent extraction of residual organic contamination was minimized. This approach best builds on the successes and shortcomings of the bioremediation. The metals present in the sludge were never intended to be removed through bioremediation. Given the original levels of organic contamination, specifically volatile organics, it would have proven very difficult or infeasible to effectively reduce leaching to acceptable levels through stabilization. The most recent analysis of the pond sediments (sampled according to the NJDEP Field Sampling Procedures Manual effective at the time) was performed following the 1995 operating season and were presented to NJDEP in the 1995 Operating Season Report.

2 REMEDIAL GOALS FOR STABILIZATION

The remedial objective of the stabilization phase of the pond remediation is to bind metals present and reduce permeability of the residual material to prevent migration/leaching into surrounding groundwater. The particular setting of the pond is such that the reduced permability will also prevent re-contamination of the material by surrounding free-product and impacted groundwater. The surrounding contamination will be the target of future remedial activities at the site.

The media of concern is only the residual material that comprises former sludge. The scope of material to be stabilized has been expanded to include the geologic sand layer that exists underneath the former sludge layer. The expanded scope is intended to be prudent and allow for a stabilized matrix down to impermeable (red) clay layer found underneath the site. The impacted sand has never been incorporated in chemical analyses and such incorporation would serve to reduce the levels measured to date. It is BI's opinion that inclusion of the sand layer would maintain consistency with the remedial objectives. The reagent mixture will be adjusted accordingly as this layer is reached to ensure the permeability requirements are continually met.

2.1 Applicable Remediation Standards

Applicable remediation standards for this material (in its current setting) would typically be Impact to Groundwater Soil Clean-up Criteria and/or Non-Residential Direct Contact Criteria. The stabilized matrix will be buried under a clean cap and facility site control would make the NRDCC less relevant than the impact to groundwater criteria. The reduced permeability of the stabilized monolith will serve to make consideration of the IGWCC an inaccurate assessment of remedial performance. BI proposes that the appropriate measure of proper performance would be to compare the analysis from a suitable leachate test to established TCLP values. The condition of the surrounding groundwater serves to negate groundwater monitoring as a meaningful measure of performance. The essentially impermeable matrix qualifies this treatment as a containment action in the sense that it prevents contaminated groundwater from contacting the pond contaminants and likewise prevents the release of water from the formation.

The stabilized material will retain the TPH content of the residual sediments, with minor adjustment for reagent addition. The impermeable nature of the material makes consideration of contaminant concentrations alone particularly irrelevant to the acceptability of this approach. BI will be seeking a determination of "limited restricted use" for the pond area based on the engineering properties of the finished site. It is intended for use as a parking/ turnaround area to support nearby terminal operations.

The remedial action selected will serve as a permanent exposure control that will effectively eliminate release of the contaminants present in the residual material.

2.2 Implementability of Chosen Action

Stabilization is a mature technology providing multiple resources for implementation. The work can be performed in situ, which minimizes community exposure to any materials that remain above remediation standards. The field work will not take more than 6 months to complete and under no circumstance would the project life exceed the RAS

requirement of 5 years. The engineering and scientific feasibility of the chosen technology has been demonstrated in a feasibility study that was performed by ARCADIS for BI in the fall of 1998. The results of this feasibility study have been included as Appendix C of this report. The contractors currently being considered for the work in Bayonne are each conducting treatability studies of their own to formulate the most economical reagent ratios that meet the performance goals set by BI. These performance goals include stabilization of all metals such that the leachate passes established TCLP levels and a hydraulic permeability of no more than 1 X 10^{-6} cm/sec. The permeability requirement has been set to 'slurry wall' standards to address any residual hydrocarbon contamination.

2.3 Consistency with Applicable Laws and Regualtions

The chosen remedial action is consistent with current State and Federal regulations. The New Jersey Pinelands Protection Act and The National Parks and Recreation Act are specifically not applicable to this site. Stabilization is utilized all around the country for various types of contamination, including elevated hydrocarbon concentrations. The NJDEP has also approved stabilization as a remedial measure for hydrocarbon sludges that have not been pre-treated with bioremediation. The nature of each sludge is unique and this must be considered in every case.

2.4 Impacts to Local Community

There will be no adverse impacts to the local community as a result of this remedial action. The site is sufficiently internal to the Industrial Complex that no odors or airborne concentrations above detection limits will be experienced by residents of Bayonne, NJ. The volatile components of the sludge have already been reduced by the bioremediation. In the first season of the bioremediation, NJDEP expressed concerns that aeration of the pond would result in hazardous airborne concentrations of sludge contaminants being experienced by on-site workers. A requirement for an air permit resulted in a study in which the ambient air concentrations were monitored during operation of the aeration equipment. The study confirmed that no impacts (the monitors failed to detect contaminants) to the ambient air quality were experienced. The work proposed will be performed on the residual material (concentration of volatiles greatly reduced) and there will be no aeration equipment employed. It is therefore unlikely that any hazardous airborne concentrations will exist at any stage in the proposed remedy.

The pond will be dewatered as appropriate for the proper mixing of the stabilization reagents. The water removed will be treated through an existing water treatment plant on site which is permitted to accept remediation derived water. The treated water will be discharged through our NJDEP permitted outfall from this facility.

2.5 Potential for Natural Resource Injury

The only natural resource that will be affected by this remedial action would be very small quantity of groundwater held in the monolithic structure. The area is less than 2 acres, which falls into the deminimus criteria now considered by the NJDEP Office of Natural Resource Damages. The groundwater flow in the area ultimately discharges to the Kill van Kull. The groundwater is classified - by regulatory default - as a II-A aquifer, although the groundwater on the hook is not used as a drinking water supply and shy of a massive desalination effort will most likely never be used in that capacity.

The stabilization and subsequent clean fill and capping is a passive remedial measure. The path of groundwater flow through the pond area will be diverted by the non-permeable monolith that will be continuous to the glacial (red) clay. Without flow into this structure there will be no contribution from the residual material to the contamination of the groundwater. The contribution of surface water run-off to groundwater from the former area of the pond will also be controlled by the asphalt cap over the clean fill. The groundwater that manages to reach the Kill van Kull will not be contaminated as a result of the residual, fixed concentrations of metals and hydrocarbons that remain in the monolithic structure.

3 Limited Restricted Use

BI will be seeking a limited restricted use for the area of the pond following the stabilization effort. Site access is controlled and land use is determined by BI management. Human exposure to the buried monolith will not occur without adequate notification and appropriate precautionary measures being taken. The intended use of the asphalt area as a parking and turnaround area for trucks is consistent with this limited restricted use determination.

4 Stabilization / Solidification

4.1.1 Technology

Stabilization refers to the formation of complexes with cementious materials become part of an insoluble, concrete-like matrix. Such stabilization is virtually unique as the process that reduces the leachable metal concentrations in a residue and some degree of stabilization of organics can be achieved by sorption activities. Solidifcation is the process by which the sorbed organics are held in a solid matrix with a permeability not greater than 1 x 10^{-6} cm/sec so that the contaminants will not be leachable into surrounding groundwater.

4.1.2 Formulation of best reagent mixture

The success of stabilization and solidification lies in the selection of a proper reagent mixture. The physical and chemical properties of the material to be stabilized, along with the goals of the stabilization effort, will dictate the recipe of reagents. Bayonne Industries contracted ARCADIS to perform a bench-scale feasibility study on the Platty Kill Pond sediments in order to determine if stabilization and solidification is a potential remedy for pond closure.

The initial screening was performed on a composite sample of sediments. The sample was a composite of six vibracore borings taken in October, 1998 to confirm the depth of the red-clay floor. The objective of the screening phase was to determine the relative value of the potential reagents in regards to the fixation process. Six test mixtures were formulated and allowed to cure for seven days. Strength measurements were taken at days 1,2,4 and 7. A TCLP was performed on one of the samples to verify that the desired effects of fixation were occurring. The TCLP results were non-detect or very low values for all parameters measured. The positive results from the screening phase provided the confidence to proceed to the Testing and Optimization Phase of the study.

The purpose of the Testing and Optimization phase was to isolate a reagent recipe that provided a cost effective remedy while maintaining the fixation goals of the project. This phase called for the creation of ten sludge/reagent mixtures (4 molds each, total 40 molds) which were then subjected to UCS determinations periodically through 28 days of curing. This phase identified five admixture recipes that were then selected for the Confirmation phase of the study.

The Confirmation phase involved permeability analysis, TPH measurement and TCLP testing. The TPH was a "total" analysis and was performed to provide data on the ultimate composition of the stabilized matrix. The permeability analysis was performed to assess whether a given admixture recipe could meet Bayonne Industries' project goal of no more than 1.0 X 10^{-6} cm/sec. The TCLP results were expected to be a major factor in the acceptance of this remedy by the NJDEP.

4.1.3 Results

A summary report and the results of the ARCADIS feasibility study are included in Appendix C. The table that summarizes the results (Table 4) is included in the report.

On the basis of the encouraging ARCADIS feasibility study results, Bayonne Industries proceeded to solicit bids for the stabilization work from various environmental contractors. On the advice of ARCADIS, one of the conditions for the

proposals is a specification that the monolith produced must have a permeability of "no greater than 1.0×10^{-6} cm/sec". This performance criteria will secure the goals of the project and provide a contract release point. Preliminary discussions with potential contractors has indicated that each contractor may want to perform an in-house bench-scale study of their own to ensure that they can meet the criteria. This may affect the final admixture recipe and the changes, if any, will be reported to NJDEP in the RAW.

One of the proposals already received has included an in-situ performance check which involves testing the first batch of material before it cures completely so that any adjustments to the admixture can be made. The sample taken will be subjected to an "accelerated cure" process which will return results in 7 days and allow adjustments to be made to the initial batch before the 28-day curing has occurred. The project will then proceed with the appropriate reagent recipe.

5 Summary and Conclusion

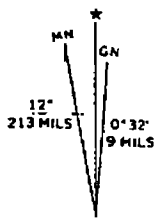
The work proposed here concludes a long-term remediation effort that began in when the present ownership of Bayonne Industries, Inc. ceased discharge to the Platty Kill Canal and began treating the wastewater for the west-side of the facility through a NJPDES permitted treatment plant. The bioremediation that followed greatly reduced the amount and pollutant load of the remaining sludge. As the bioremediation reached the point of diminishing returns, it became apparent that the next appropriate step was to either remove or fixate the remaining sediments in the pond. In an effort to minimize human exposure to the contaminants in the pond and protect groundwater from eventually becoming impacted by the metals and hydrocarbons, BI conducted a treatability study to assess whether appropriate fixation could be achieved.

The treatability study concluded that the metals in the pond sediments are readily amenable to stabilization and the permeability of the material can be reduced sufficiently given the proper reagent recipe. The process of soliciting bids for the stabilization work has begun and a sediment sampling program is being conducted to delineate the boundaries of the material to be stabilized. Confirmatory analysis will also be conducted on some of the sediment cores to assist contractors in calculating final admixture costs.

The results of the most recent analysis and the details of the work to be performed will be included in the Remedial Action Workplan that will be submitted to NJDEP following approval of this RASR and contractor selection. The work will most likely proceed in the spring/summer of 1999, or when required approvals and/or permits are obtained.

APPENDIX

A



UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

BAYONNE INDUSTRIES, INC.

Site Location Plan / 1-Mile Vicinity Map

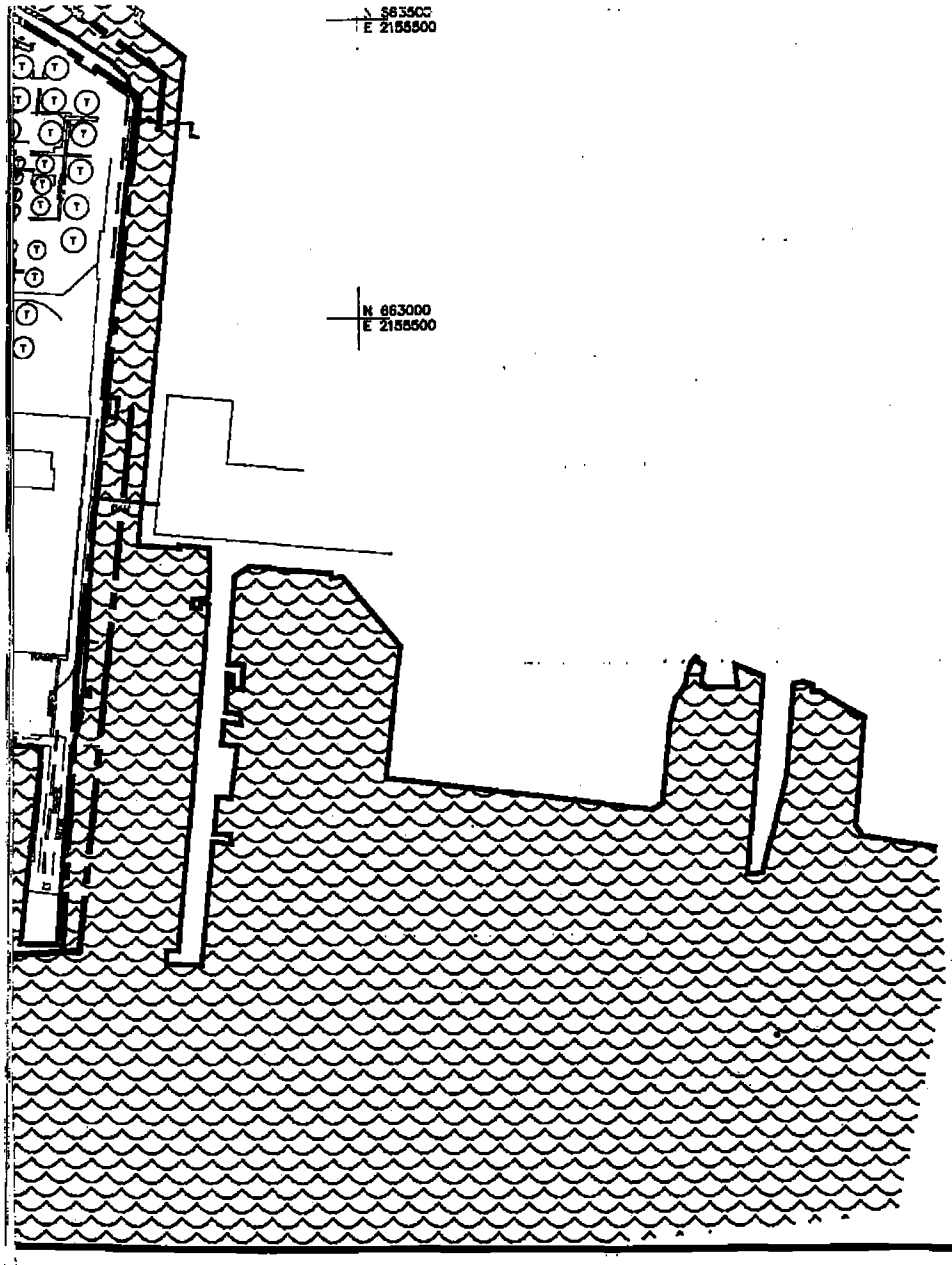
Bayonne, Hudson County, NJ

USGS Jersey City, NJ-NY Quadrangle
7.5 Minute Series (Topographic)

Date: 1967, photorev. 1981

QUADRANGLE LOCATION

Figure: 1
Scale: 1"=2000'



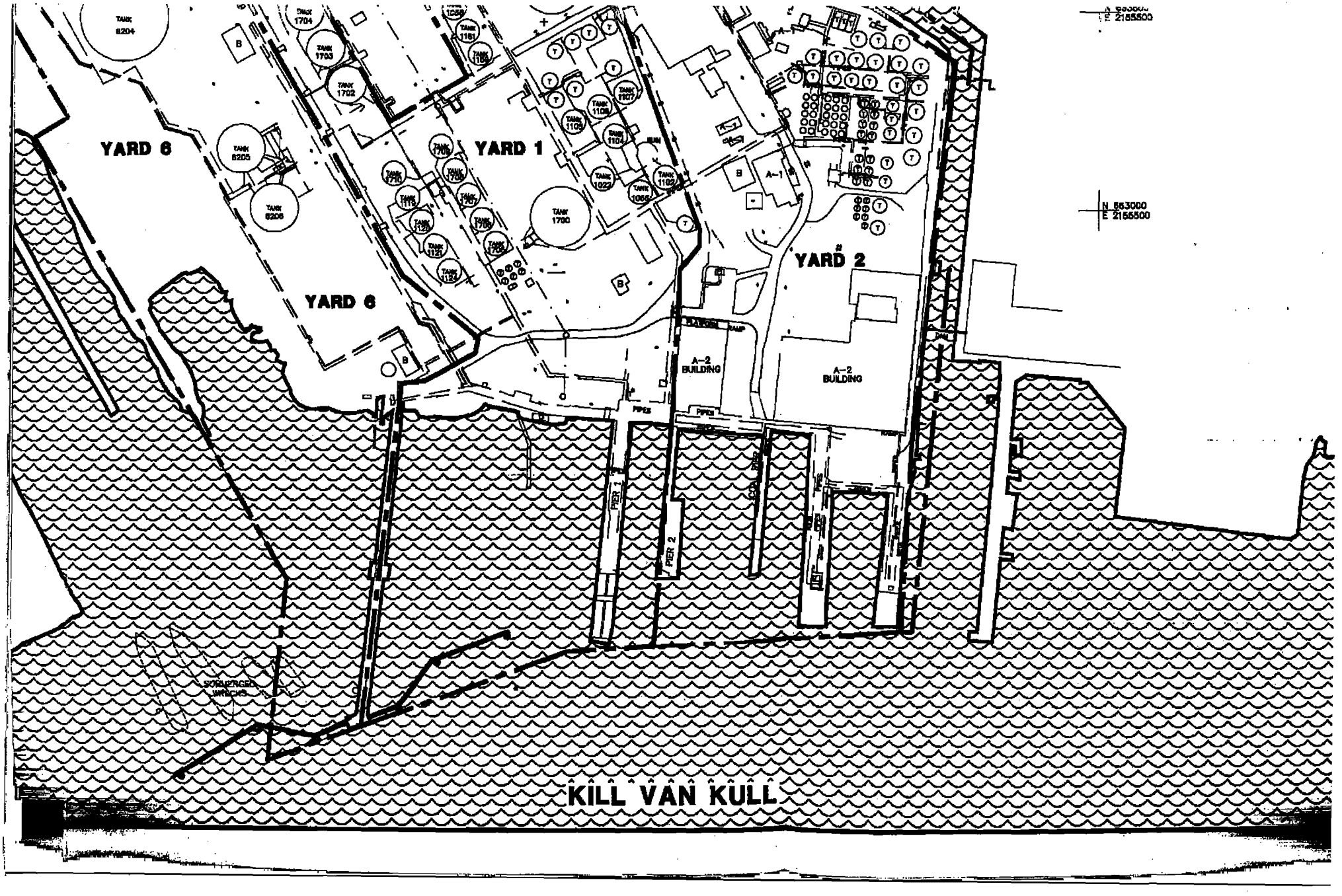
ENSR

ENSR CONSULTING AND ENGINEERING

SITE PLAN

BAYONNE INDUSTRIES INC.
BAYONNE, NEW JERSEY

DESIGN: DG	DATE: JUNE 1994	FIGURE NUMBER D–1	
APPROVED: DG	DRAWN: WLH	DRAWING NUMBER 3782–30D	
CHECKED: DG	SCALE: AS SHOWN	PROJECT NUMBER 3782–006–300	REV. NO. 1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YARD 1
YARD 6
YARD 2
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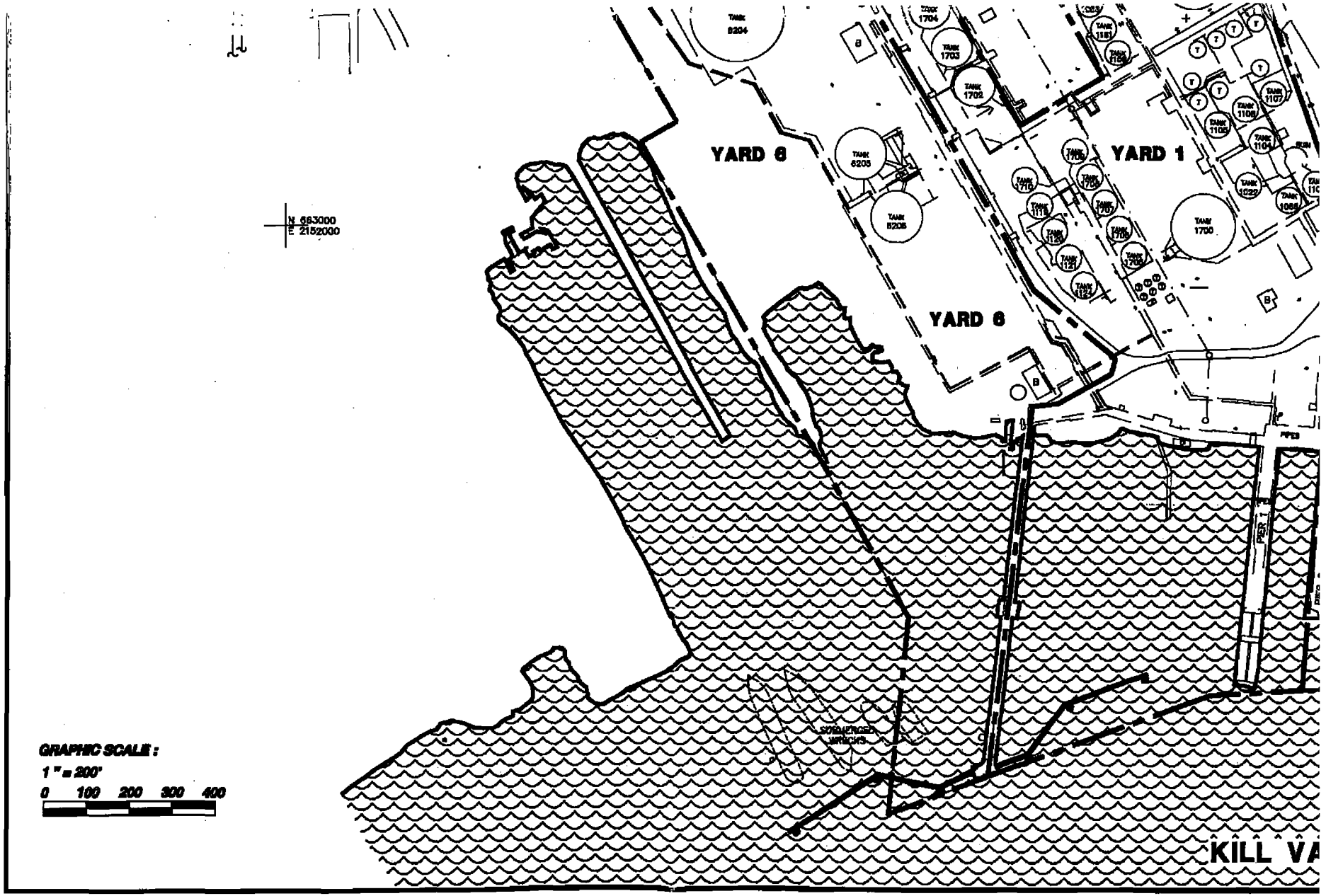
A-2 BUILDING
PIER 1
PIER 2
SUNKEN BARGE
KILL VAN KULL
N 553000
E 2155500


YARD 6
YARD 1
YARD 6
N 663000
E 2152000
GRAPHIC SCALE :
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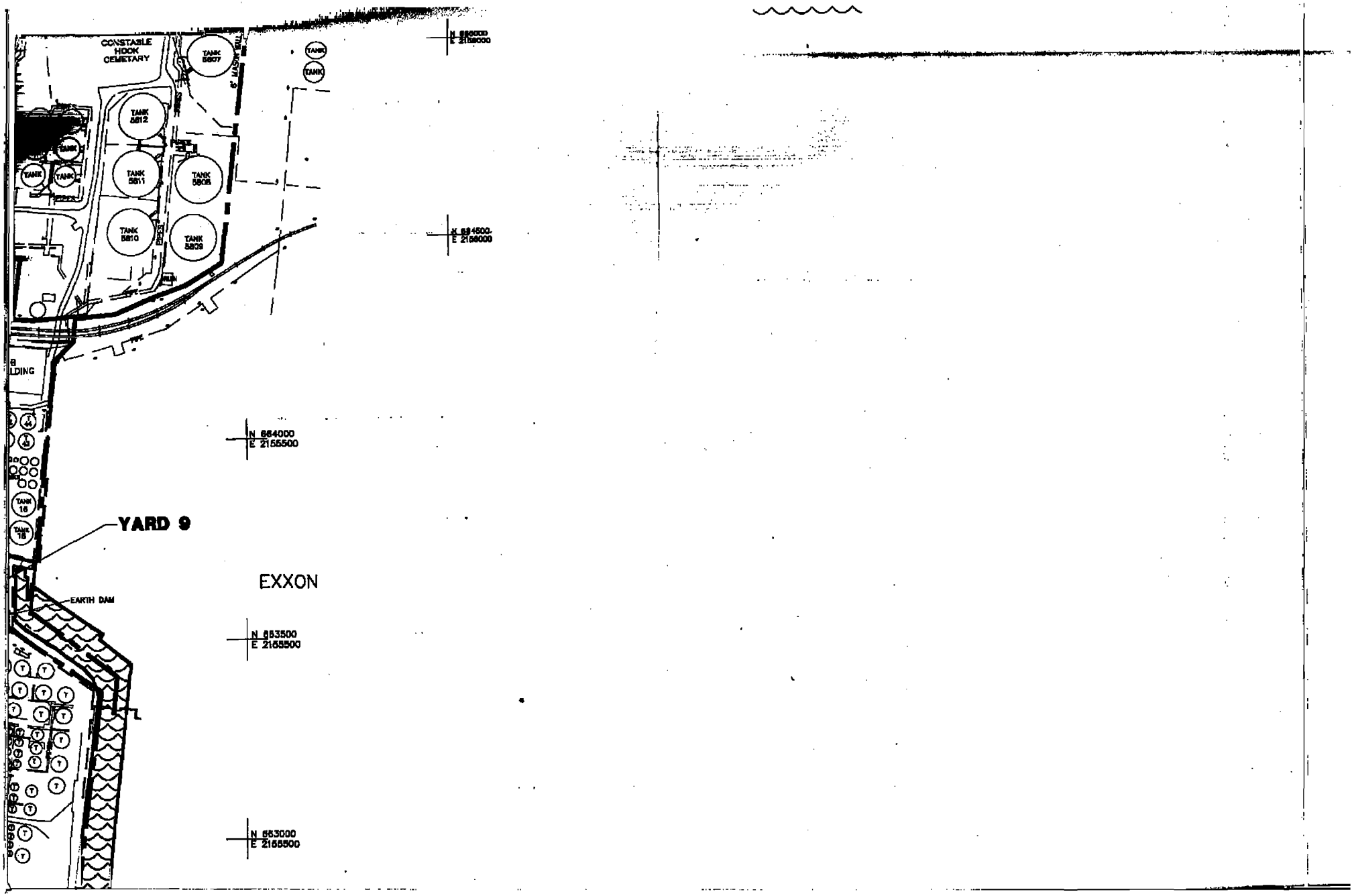
KILL VA


CONSTABLE HOOK CEMETARY
TANK 5807
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TANK 16
TANK 18
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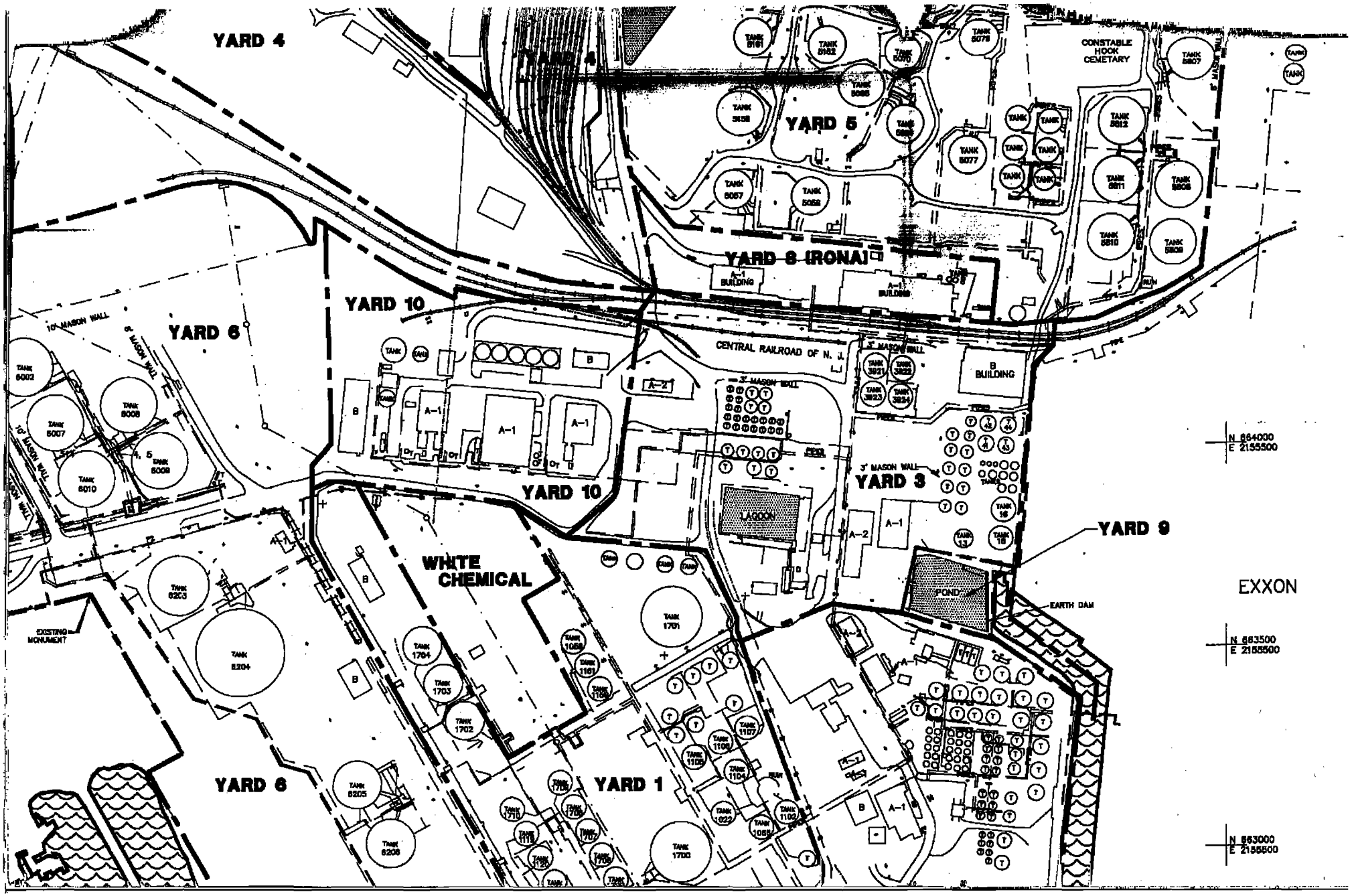
E 2155500
N 663500
E 2155500
N 663000
E 2155500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YARD 6
YARD 10
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YARD 9
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YARD 6
YARD 1
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CONSTABLE HOOK CEMETERY
CENTRAL RAILROAD OF N. J.
B BUILDING
LAGOON
POND
EARTH DAM
EXISTING MONUMENT
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N 663500
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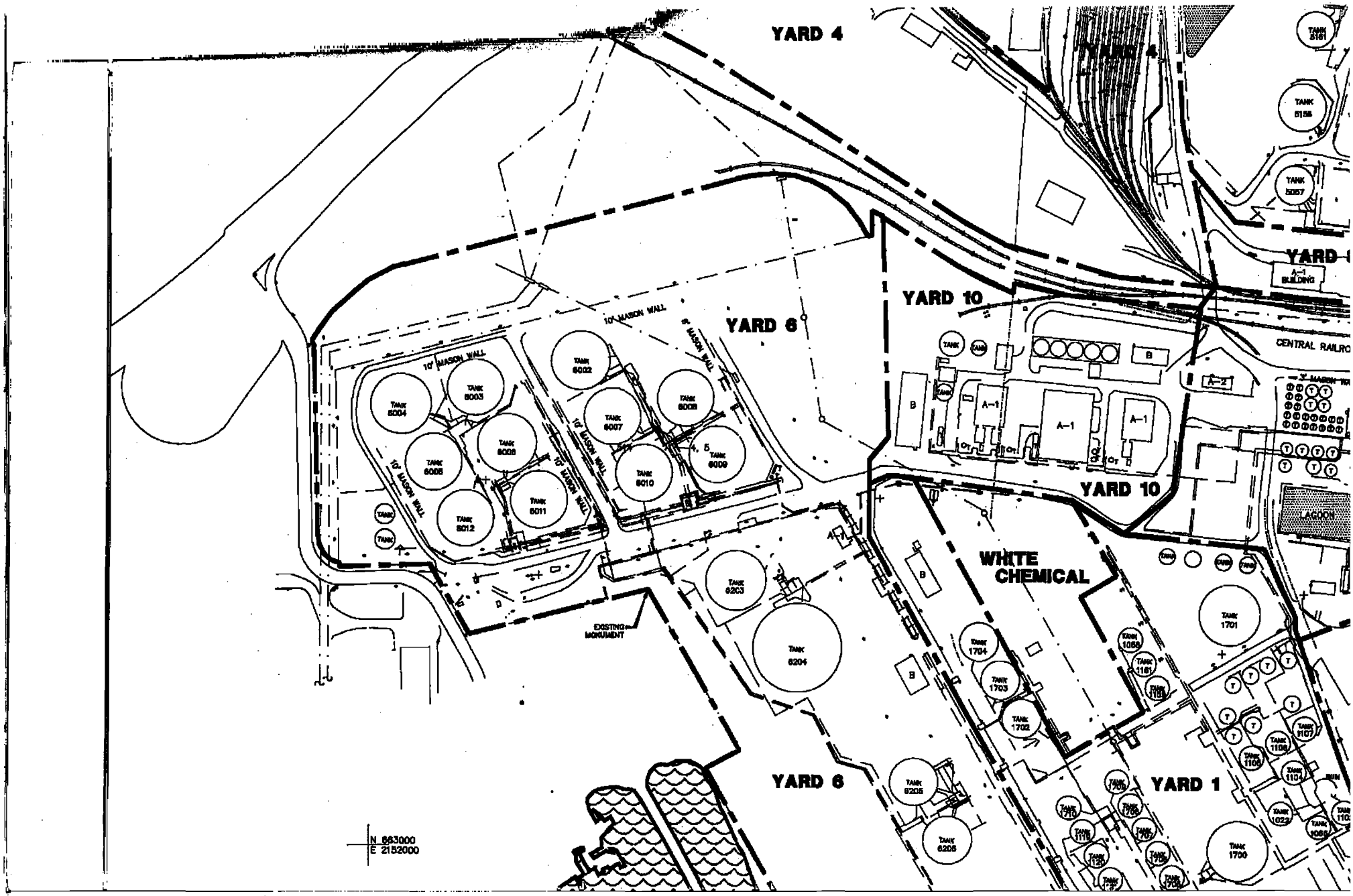
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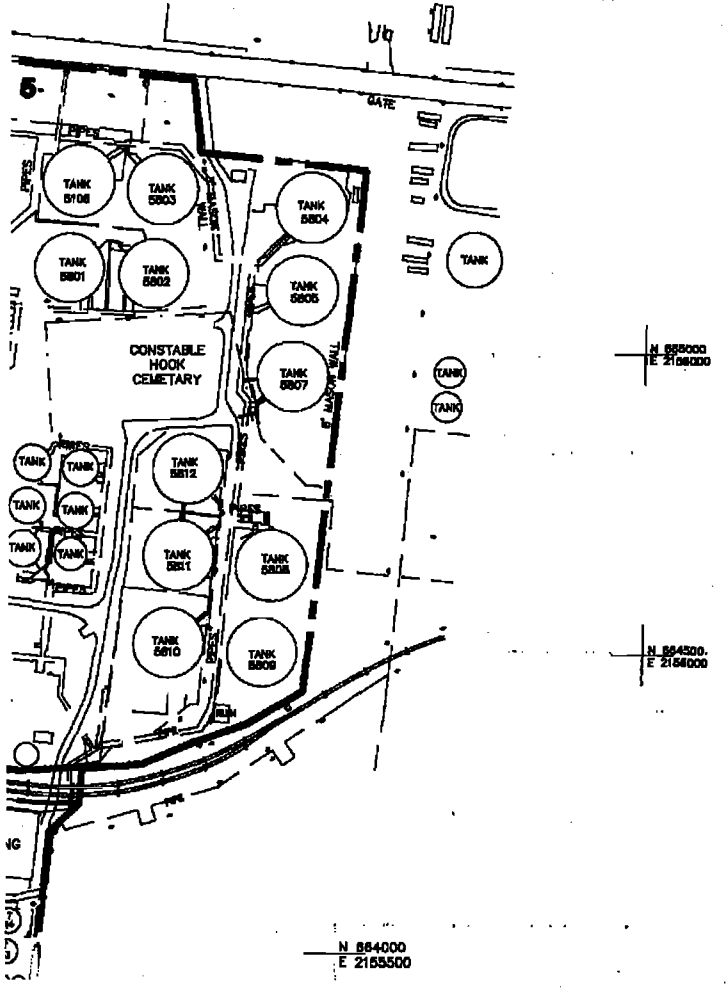
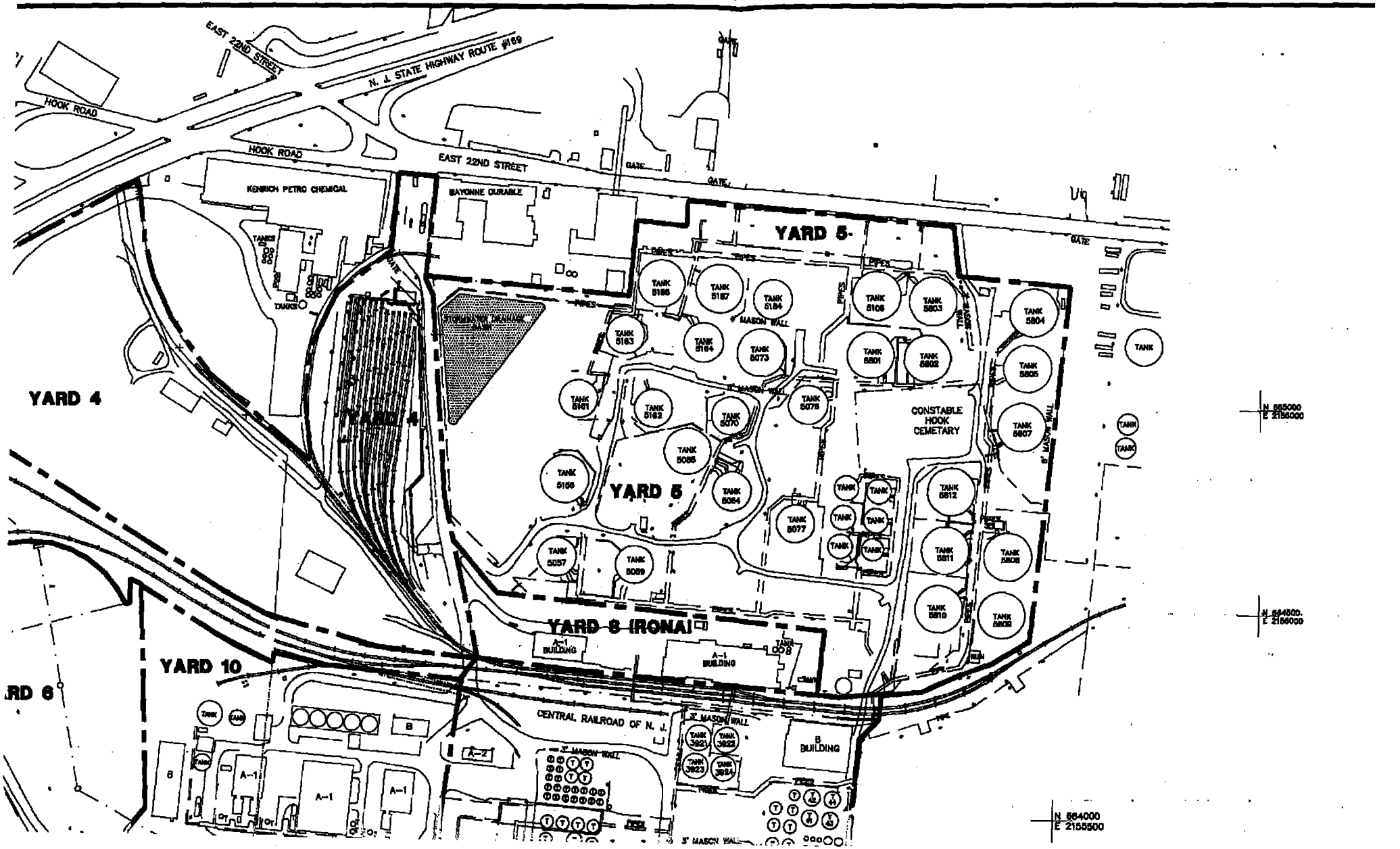
CENTRAL RAILRO
LAGOON
A-1 BUILDING
A-1
A-2
B



LEGEND

- STORM SEWER W/MANHOLE
- OVERHEAD LINE UTILITY POLE
- FENCE LINE
- 6' SWING GATE
- 8' SLIDE GATE
- A-1 LEASED BUILDING TO OTHERS – MAY CONTAIN HAZARDOUS MATERIAL
- A-2 BUILDING NOT CURRENTLY IN USE
- PIPES
- T TANK
- PROPERTY LINE (TYP.)
- YARD LINE (YARD LINE MAY SUPERCEDE PROPERTY LINE(TYP.))
- EXISTING SURFACE IMPOUNDMENT
- APPROXIMATE LOCATION OF OPEN WATER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HOOK ROAD
HOOK ROAD
EAST 22ND STREET
KENRICH PETRO CHEMICAL
BAYONNE DURABLE
YARD 5
YARD 4
YARD 5
CONSTABLE HOOK CEMETARY
YARD 8 IRONAI
YARD 10
CENTRAL RAILROAD OF N. J.
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B BUILDING
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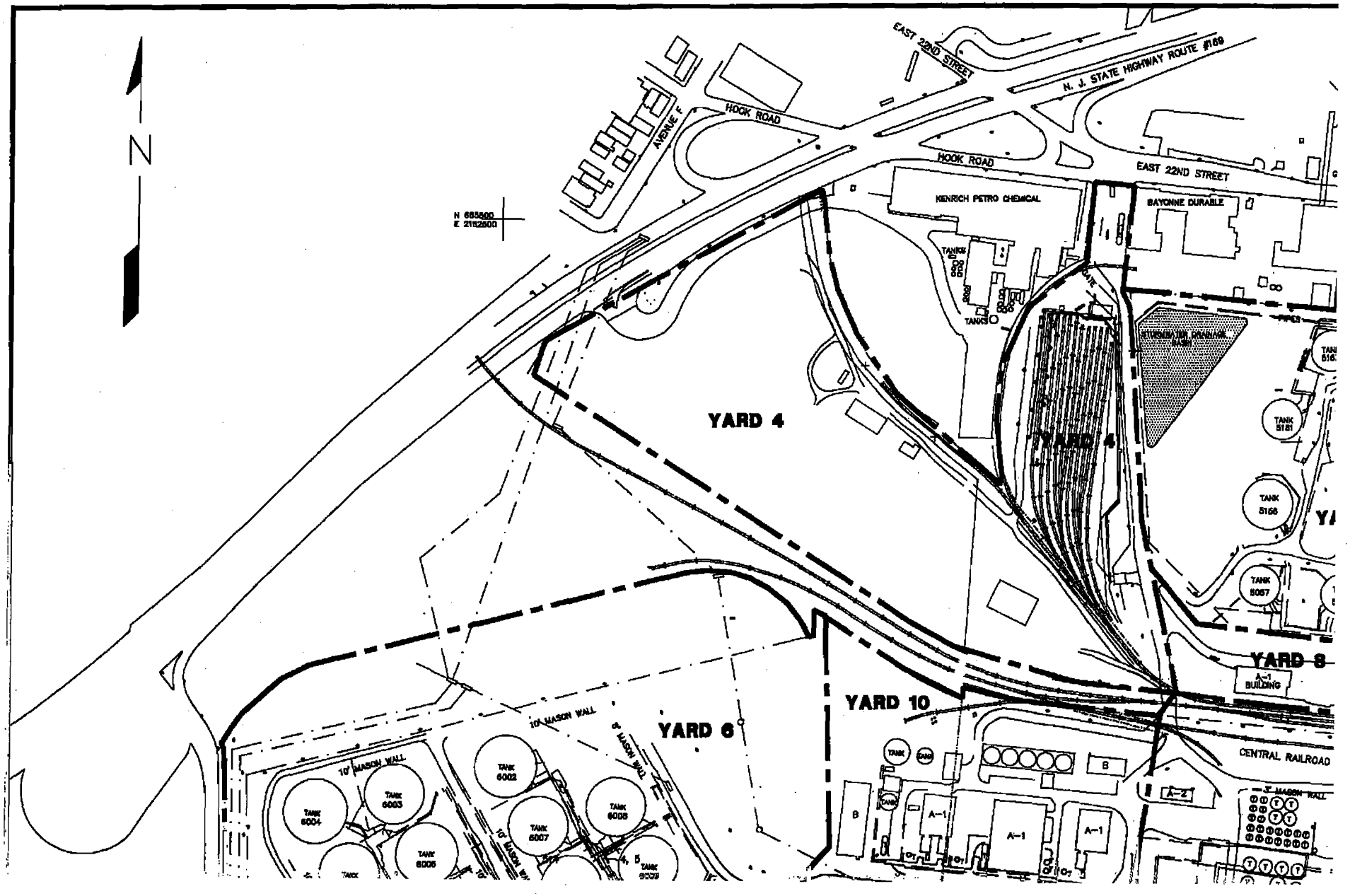
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HOOK ROAD
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EAST 22ND STREET
KENRICH PETRO CHEMICAL
BAYONNE DURABLE
YARD 4
YARD 4
YARD 8
YARD 10
YARD 6
10' MASON WALL
10' MASON WALL
5' MASON WALL
10' MASON WALL
3' MASON WALL
CENTRAL RAILROAD
TANK 6004
TANK 6003
TANK 6002
TANK 6007
TANK 6006
TANK 6005
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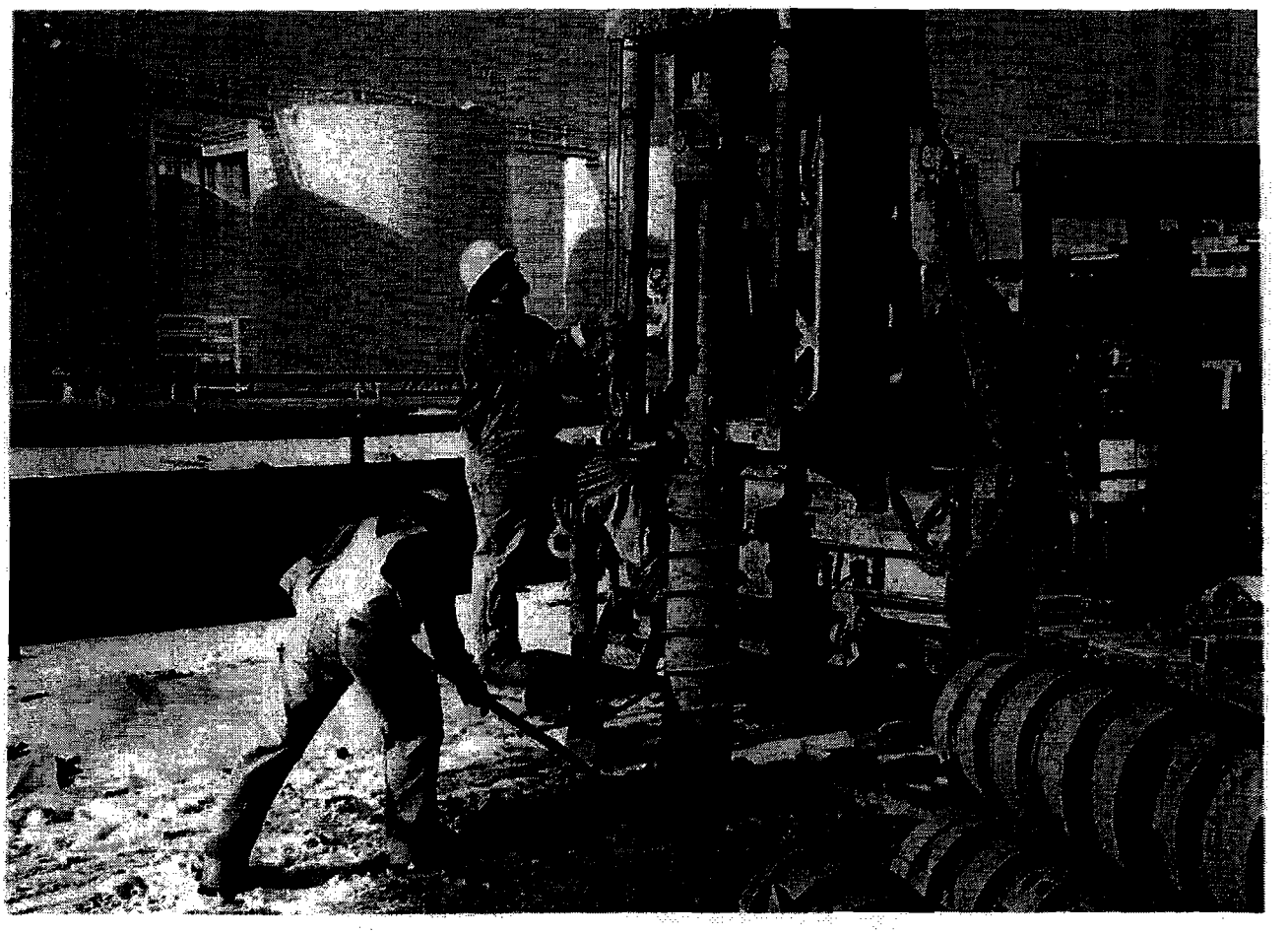
TANK 5168
TANK 5057
A-1 BUILDING
A-1
A-2
B



BLUESTONE ENVIRONMENTAL

ExxonMobil

Remedial Investigation Addendum Report, Sampling Clay-Till Platty Kill Canal, Bayonne, New Jersey

Prepared for:

Bayonne Industries Inc. and ExxonMobil

August 22, 2001

ORIGINAL
(with Certifications)

CCH000005

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1.0 INTRODUCTION

This Remedial Investigation Addendum Report (RIAR) presents the results of the investigative activities conducted in January 2001 in accordance with the Remedial Investigation Work plan Addendum (RIWA) dated August 2000. This work is intended to provide necessary data to progress the engineering plan for the closure of the Platty Kill Canal (PKC). A Remedial Action Work plan (RAWP) will subsequently be prepared with the intent of gaining closure approval and a "no further action" determination from the New Jersey Department of Environmental Protection (Department) for the PKC located on the border between Bayonne Industries, Inc. (BI) and ExxonMobil (EM) sites in Bayonne, New Jersey.

A Remedial Action Selection Report (RASR) on this project had been submitted to the Department in February 2000. The RASR outlined the rationale for the selected remedy and provided recommendations for filling data gaps necessary to develop a RAWP.

The anticipated final design will include containment of the sludge within the canal with selected sediment volumes being either treated in place or removed and treated for placement within the Platty Kill Pond (PKP). The PKC will be backfilled with dredge material and capped with low permeability material. An impermeable sheet pile barrier inside the perimeter of the canal will eliminate migration of any residual contamination from or into the canal site. Post construction monitoring programs will be established as part of the final plan.

1.1 Objectives

The objectives of the work, detailed in the Remedial Investigation Work plan Addendum (RIWA) are as follows:

1. Collect subsurface stratigraphic and permeability data necessary to confirm the feasibility and implementability of the selected remedial action.

2. Identify potential obstructions to sheet pile placement along the length of the canal that would preclude the installation of the vertical barrier.

3. Obtain an enhanced geologic characterization of the subsurface around and below the PKC sediments to confirm the presence of a continuous clay-till layer with sufficient thickness and impermeability to isolate any deposits retained in the canal.

4. Provide a response to the conditions in the Department's July 13, 2000, RASR approval letter to BI and EM.

1.2 Scope of Work

This report focuses primarily on the results of investigative activities conducted in March 2000 and January 2001 but also builds upon results obtained from earlier investigations *(PKC Phase II SI, 1998, and PKC RASR, 2000)* that were conducted pursuant to the objectives outlined above. The more recent investigative activities provide the additional data necessary to proceed with a containment design acceptable to the Department for RASR confirmation and characterization purposes. This investigation was limited to:

1. Continuation of the Vibrocore boring and media sampling program within the PKC to determine the horizontal extent of clay and till layers which are found to start approximately 27 feet below ground surface. This work ultimately included the installation of 76 Vibrocore borings in the PKC.

2. Vibrocore sampling of the lower clay-till in the PKC and analysis for permeability at selected locations.

3. Combined Hollow Stem Auger - Mud Rotary drilling with sealed casings to advance land borings outside and adjacent to the PKC. This work included 11 locations. In each boring, split spoon samples were collected at continuous 2-foot intervals or Shelby tube samples were collected from the clay.

4. Physical sampling was also conducted of the lower clay layer outside of the PKC for laboratory permeability analysis.

Additional "at risk" tasks were developed and performed based on field conditions as the program progressed. These tasks included:

1. Determination of till soil density till and analysis of select reconstituted samples for permeability.

2. Field falling head permeability tests were conducted at selected boring locations.

2.0 BACKGROUND

2.1 Previous Investigations

In the summer of 1993, the U.S. Coast Guard directed that free-phase product seepage control measures be implemented at the mouth of the Platty Kill Canal (at the Kill Van Kull) when sheens were observed in the Kill. Bayonne Industries, unsure of the specific circumstances, undertook some interim remedial actions (IRA) as outlined in an April 1994 IRA Work Plan approved by the NJDEP. The interim actions included the reconstruction of a portion of the bulkhead, a Phase I investigation to characterize sediments in the Platty Kill Canal, the installation of a subsurface free-product retainage curtain along the Kill Van Kull, and the installation of an Air-Guard™ containment system to prevent migration of free-product sheen into the Kill Van Kull main stream from BI waters.

In the fall of 1994, ENSR Consulting and Engineering (ENSR) conducted a sediment investigation of the canal as part of the Platty Kill Creek Interim Remedial Action. That investigation included the collection and analysis of sediment samples from 16 locations. The locations included eight outside of the sheet pile dam toward the Kill Van Kull; four inside of the sheet pile dam between the dam and the pipe bridge; and four locations north of the pipe bridge toward the Platty Kill Pond. Those results were reported to the Department in November 1995, in the report entitled Platty Kill Pond Interim Remedial Action Report Vols. 1 and 2.

In 1996, BI submitted a Phase 2 Sediment Investigation Work plan for the canal to the Department, Bureau of State Case Management (BSCM) for review and approval. The plan was developed based on discussions between the Department and Dr. Robert Weaver, Corporate Technical Director, BI, and was responsive to NJDEP's March 27, 1996, comments to the aforementioned Platty Kill Creek Interim Remedial Action Report, dated November 1995. Fieldwork included the collection and analysis of twenty-nine sediment core samples from eleven locations within the canal. These include seven locations in the canal between the sheet pile dam and the bridge at the northern section of the canal; and, four locations north of the bridge toward the Platty Kill Pond.

In March 1998 BI submitted a PKC Phase II Sediment Investigation Report to the NJDEP. The report provided a delineation of the impacted sediments in the canal inside of the sheet pile dam. The Department in a letter dated June 16, 1998 approved the report. In December of 1999, the Department requested that a joint RASR be developed by BI and ExxonMobil to develop the PKC impacts. The RASR was completed and submitted to the Department on February 18, 2000. The Department conditionally approved the RASR on July 13, 2000.

Additional engineering requirements and data gaps leading to the RIWA were first addressed in a letter from BI to the Department on August 31, 2000. This report documents the findings of one necessary component of the confirmatory work.

On April 11, 2000 a "hot spot" definition of the most impacted sediments in the PKC was finalized and submitted. This definition will be incorporated into the RAWP. Additional tasks identified in the August 31, 2000 letter and the recommendation section will be implemented upon the department's concurrence with the necessary tasks.

2.2 Historical Overview

The Bayonne Industries, Inc. (BI) site is a bulk liquid petroleum storage facility located in the Constable Hook area of Bayonne, Hudson County, New Jersey. Prior to 1956, the site was part of the larger configuration of a Tidewater Oil Company refinery operation, which began in the 1870's. From the 1870's to approximately 1956, the site operated as a major petroleum refinery. Refinery operations ceased in approximately 1956; from that time forward, the site operated as a bulk storage terminal.

The land adjoining the eastern and northerly runs of the PKC is currently owned by ExxonMobil and was acquired in several stages by their predecessor (Standard Oil of New Jersey) between the late 1890s and late 1930s. Between the early 1900s and 1950s, various wax manufacturing facilities had been operated and then dismantled in this section of the facility. As late as 1967, limited equipment associated with lube oil manufacturing remained in use (Dan Raviv, 1994). East of the canal, ASTs are currently used to store various lube and petroleum products.

The Platty Kill Canal is an inactive barge slip surrounded by an artificially filled industrial land site. It is approximately 1000 feet in length and is separated from the Kill van Kull by a steel sheet pile dam that was installed in 1991 under permit by the U.S. Corps of Engineers. The sheet pile dam provides a physical barrier spanning the width of the canal and acts as a restraint for sediment migration.

2.3 Physical Setting

The BI and EM sites are located within a heavily industrialized area on the east side of the city of Bayonne, in Hudson County, New Jersey, in an area often referred to as the Constable Hook. The two facilities are bordered to the north by East 22nd Street and the city of Bayonne; to the west by the Coastal Oil Co. petroleum terminal, to the south by the Kill van Kull and to the east by the upper New York Bay.

A detailed site plan for the canal area developed from a land survey for the work reported herein is included as Figure 1. Figure 1 also includes a site location map with a 1-mile radius of

the area, prepared from the U.S. Geological Survey 7.5-Minute Jersey City Quadrangle. This map shows the current site boundaries, local topography, general surface water drainage, and general land use patterns.

2.4 Site Physiography, Geology and Hydrogeology

The Bayonne Industries site is geologically located near the boundary between the Triassic Lowland and Manhattan Prong structural regions of the Piedmont Physiographic Province of New Jersey. The site is underlain by a stratigraphic sequence including unconsolidated sands, silts, and clays of Recent and Pleistocene age, and consolidated and weathered bedrock of Triassic and Precambrian age (Eckenfelder, Inc., 1992). Within the general vicinity of the site, two distinct bedrock groups have been recognized: the Newark Supergroup of Triassic/Jurassic age, and the Manhattan Schist of Precambrian to Cambrian age (Lyttle and Epstein, 1987). The Manhattan Schist is a dark gray, micaceous schist or layered gneiss with subordinate metaquartzite, metagraywacke, and amphibolite (Lyttle and Epstein, 1987; Soren, 1988).

The contact between the Stockton and Lockatong Formations of the Newark Supergroup (Lyttle and Epstein, 1987) within the Newark Basin exists in the area of the Bayonne Industries site. The Stockton Formation generally consists of sandstone, mudstone, and siltstone. Overlying the Stockton Formation is the Lockatong Formation, which consists of finer-grained, more argillaceous mudstone and siltstone.

Unconsolidated glacial and post-glacial sediments of late Wisconsinian age overlay the bedrock in this area. Glacial sediments consist of glacial till made up of varying materials and glacial outwash sediments. Proglacial lakes were formed in the area by the damming of melt waters by the Woodfordian Terminal Moraine. This glacial event provided for the deposition of lacustrine clays on lake bottoms that have been identified during this investigation. The clays near the mouth of the canal show erosional features and are mixed with gravel till. The placement of these erosional clays and till is supported by observations made in the literature. In 1902, Rollin D. Salisburg the state geologist wrote the "Kill Van Kull is not so wide or so deep as to make it unreasonable to suppose that it is of post-glacial development, and perhaps the same may be said for the Narrows and East River".

Above the glacial materials are post-glacial sediments that include recent sand, silt, and clay; some of this clay is commonly termed "meadow mat.' The most recent silt and gray clay are reportedly of marine origin deposited during the later recessional period of the Wisconsin glaciation (Lueder, Obear, Holman, Rogers, 1952). Fill materials used to reclaim the area for industrial use now overlie the meadow mat gray clay. An upper, often brackish water-bearing zone exists within the fill materials.

Vibrocore and land borings performed during this investigation confirm the geology as

reported in the literature. The general profile found within the canal consists of a layer of sludge and sediment; followed by a sand, gravel, cobble layer overlying a reddish-brown clay or gravel-clay-till deposit that has been confirmed to line the bottom of the canal. Soil Boring Logs are included as Appendix A.

The layer of sludge and sediment in the canal generally ranges from 10 to 15 feet thick followed by a 1 to 5 foot thick layer composed of sand, gravel or cobbles. Beneath this layer is red silty clay, which could not be fully penetrated by the vibrocore barrel. Since the vibrocore borings did not penetrate the red silty clay, the total clay thickness within the PKC is undetermined. However, based on the adjacent land delineation soil borings, the clay thickness has been measured up to 8.5 feet thick. Along the sides of the PKC, a glacial till underlies the clay. The unconsolidated overburden deposits adjacent to the canal generally consist of fill material followed by gray clay over a layer of silty sand with some gravel and a glacial clay-till formation. Vibrocore Sediment Core Logs are included as Appendix B.

The clay penetration recorded in the vibrocore borings ranged from a trace material in the tip to a maximum 7.5 feet in Vibrocore boring (VIB) 43-2. The top of the red silty clay ranged from minus 17.7 ft. below mean sea level (bmsl) to minus 24.5 ft. bmsl. The fill material ranged from 10 to 15 feet thick on the BI side to a maximum of 25 feet thick on the EM side. The gray clay ranged from 1 to 10 feet thick over a silty sand layer ranging from 2 to 10 feet thick; followed by red silty clay. The top of the red silty clay ranged from minus 14.9 ft. below mean sea level (bmsl) to minus 24.0 ft. bmsl and ranged in thickness from 0.5 ft. thick in delineation soil boring (DSB) 01 to 8.5 ft. thick in DSB-09. There was no red silty clay found in land Delineation Soil Boring DSB-11. This is depicted on Figures 2 and 4.

On land, the underlying glacial till ranged from minus 15.4 ft. bmsl to minus 29.3 ft. bmsl and ranged in thickness from 0.5 ft. thick in DSB-04 to 6.0 ft. thick in DSB-02. However, the borings were not designed to penetrate a third confining layer (till), so the actual thickness of underlying till is undetermined.

In summary, this geology is likely the result of glacial outwash deposits and the erosional and depositional environment associated with drainage and stream flow after the retreat of the glacier. An overlay of the historic shoreline is presented in Figure 4.

Groundwater flow direction beneath the site has previously been determined to be easterly toward the canal and the Kill van Kull, the primary area of groundwater discharge in the region. This direction of the groundwater flow was confirmed on contour maps developed from groundwater elevation measurements collected by BI and Parsons for ExxonMobil. The site, located adjacent to the Kill van Kull, is tidally influenced as observed during various water level measurements collected at both sites.

3.0 TECHNICAL OVERVIEW

In preparing the RASR, the feasibility and implementability of various remedial alternatives to bring the Platty Kill Canal to closure were evaluated. Based on the evaluation and considering the data collected to date, containment and fill has been selected as the most appropriate remedy.

Investigations have been performed at both the EM and BI sites to evaluate the presence, type, extent and concentration of neighboring soil and groundwater contamination as well as the local geologic conditions. The investigation and specific work tasks addressed in this report were conducted to fill data gaps and to provide a more complete basis for consideration of containment as the most reasonable remedial alternative. The confirmed presence of the natural clay and/or till layers, with inherent low permeability, confirmed throughout approximately 78% of the canal floor length supports the containment alternative. It is only for a relatively limited area (15%) located mid-canal that a clay layer has not at yet been identified, due in part to the inability of the sampling technique (vibrocore) to penetrate a silty-sand layer present in the same area. Complete delineation of the clay, using tripod mounted conventional drilling techniques on a small barge, is proposed in the following sections of this report.

This investigation also confirmed the existence of obstructions in distinct areas of the canal (likely due to the existing deteriorating bulkhead and previous structures that may have fallen into the waterway). These obstructions are significant but are not considered limiting to the implementation of the remedy, as there is every indication that they can be removed prior to beginning construction of the containment structures.

3.1 Feasibility and Implementability Considerations

The over water vibrocore boring programs conducted in March 2000 and January 2001 did for the most part confirm the presence of clay and clay-gravel glacial till layers throughout the site and identified specific depths and aerial extent of these layers. Permeability test results on the confirmed clay samples were found to be in the 10^{-7} cm/sec range. The area lacking this specific information (mid-canal) warrants further investigation to obtain data that are more complete for both pile driving and permeability considerations.

The results of the soil boring investigations provided the data necessary to support the proposed remedy of installing a sheet pile containment barrier along the interior perimeter of the canal. A more detailed understanding of the central portion of the PKC and confirmation that this area can be addressed with a modified approach is necessary. The presence of various man-made obstructions that could impact the installation of the sheet pile does need to be evaluated in more detail.

4.0 SUMMARY OF FIELD ACTIVITIES

Bluestone performed additional investigation activities regarding the physical setting, canal construction, soils and hydrogeologic characteristics relevant to the canal closure. Detailed descriptions and results of these investigations are presented in the following sections. A site plan with the vibrocore boring, land boring and cross-section locations is presented as Figure 1. Generalized cross-sections are presented in Figure 2. An obstruction area map is presented as Figure 3 and a clay thickness and delineation map with the historic shoreline overlay is presented as Figure 4. A top of clay-till contour map is presented as Figure 5.

4.1 March 2000 Vibrocore Boring Program

Vibrocore sampling provides an efficient means to investigate vertical profiles of underwater sediments and soils. Field trials implemented in the PKC had proven that approximately three feet of the local clay-till material could be penetrated with this method. Vibrocore samples are intact columns of sediment four inches in diameter and up to 20 feet long. Collecting them requires a suitable platform for extracting and lifting the heavy cores. For that reason, this equipment has been deployed from a crane, thereby alleviating the need to work over the PKC on a platform. The crane method reduced health and safety concerns, land decontamination, and many other limitations associated with floating platform activities.

In March 2000, representative samples of the clay-till were collected using vibrocore technology. The technique was previously approved by the Department for use in sampling the PKC in 1996 and again in September 1999. The findings were submitted in the BI April 27, 2000 Quarterly Report and detailed lab data was provided to the Department at their request on August 2, 2000.

Eight clay samples were collected during the sampling activity and four were submitted to the laboratory for permeability analysis, particle size distribution and Atterberg limits. Vibrocore samples were collected near the mouth of the PKC, upstream of the existing sheet pile dam. Vibrocore sampling confirmed the location of a red-brown clay-gravel till at a depth of approximately 26-feet below the top of the western bulkhead at its southern end or approximately 18 ft. below mean sea level (bmsl). Generally, this till material at the end of the Canal was found to have higher gravel content than the clay till under the Platty Kill Pond and northern portion of the PKC.

The very dense nature of the samples and the coarse gravel (3/4 to 3 inches) in the clay matrix did not allow for the gathering of "undisturbed" samples needed for a flexible wall permeability test (ASTM D: 5084). Other routine classification tests were conducted on the soils in an attempt to make a generalized assessment of the range of permeability that this material would exhibit. A grain-size analysis (ASTM D: 422) and Atterberg limits (ASTM D: 4318) were performed on each sample. Gravel content ranged from 44.4% to 8.4% and the fines content

ranged from 62.6% to 21.1% in the samples. The testing also indicated that the soil was cohesive and exhibited plasticity. Based on these results and visual assessment, the soil was classified as a very dense, clayey glacial till.

The geotechnical laboratory concluded that based on the information referenced above and their experience with similar materials, the soil could possess a permeability ranging from 1.0×10^{-06} cm/sec to 1.0×10^{-08} cm/sec. This information confirmed the expectation that a reasonable barrier is located below the PKC and that limited additional investigation should provide a suitably complete assessment of the adequacy of the existing materials.

4.2 January 2001 Vibrocore Boring Program

In January 2001, representative samples of the clay-till were collected using vibrocore technology as discussed in the previous section. 76 Vibrocore borings were advanced in 38 locations in order to delineate potential obstructions and identify the sediment stratigraphy, especially the presence or absence of a confining clay layer of low permeability at the bottom of the PKC.

The vibrocore boring programs confirmed the presence of an impermeable clay - glacial till layer throughout the site except in an approximate 300-foot section (280 feet long) along the EM side between VIB-16 and VIB-11 and in an approximate 100-foot side (70 feet) along the BI side between VIB-37 and VIB-39 where the vibrocore could not penetrate the upper sediments. A discussion of the findings is included in the following sections.

Samples from VIB-10-1, VIB-17-2 and VIB-49-2 locations were submitted to the geotechnical laboratory (Paulus, Sokolowski and Sartor in Warren, NJ) for permeability analysis. The permeability test results ranged from 2.46×10^{-7} to 5.64×10^{-7} cm/sec and the results are summarized on Table 1. The Permeability Test Result Sheets are provided in Appendix C. A discussion of the findings is included in the following sections.

4.3 January 2001 Delineation Soil Boring Program

In the November 15, 2000, and December 28, 2000, NJDEP Comment letters regarding the Remedial Investigation for Clay-Till Sampling (dated 30 August 2000), the Department outlined the approved drilling and sampling procedure to be followed during the clay-till delineation and associated Shelby tube sampling. This was followed up by a comment letter from BI dated January 3, 2001. The drilling program required setting casings into the confining units prior to advancing the drilling into the underlying formations.

As noted earlier, the delineation soil-boring program confirmed the presence of an impermeable clay-glacial till layer throughout the site except in an approximate 300-foot section (330 feet long) along the EM side between DSB-6 and DSB-4. The only boring that did not

contain the relatively impermeable clay-glacial till layer was DSB-11. This boring defined a silty sand overlying the till.

The program thus determined that a distinct layer of red-brown clay extends along the northern portion of the PKC. This clay was first thought to be a clay-till (i.e., moved by glacial ice) with less gravel north and more gravel to the south near the mouth of the PKC. However, a formation contact was found in the northern portion of the PKC where a clay layer rests on the underlying clay-till.

Under the southern portion of the PKC, the clay is mixed with gravel and maintains a relatively low permeability. Here it is thought to be a clay-till or an erosional lacustrine clay and till mixed where the PKC drained into the Kill Van Kull.

Landside soil borings performed during the investigation also confirmed the glacial geology as reported in the literature. The unconsolidated overburden deposits adjacent to the canal generally consist of fill material overlying gray clay that was deposited over a layer of silty sand with some gravel and finally red-brown glacial clay and clay-till formations. This profile is likely the result of glacial outwash deposits and the erosional and depositional environment associated with drainage and stream flow after the retreat of the glacier.

The fill material ranged from 10 to 15 feet thick on the BI side to a maximum of 25 feet thick on the EM side. The gray clay ranged from 1 to 10 feet thick over a silty sand layer ranging from 2 to 10 feet thick; followed by red silty clay. The top of the red silty clay ranged from 14.9 ft. bmsl to 24.0 ft. bmsl and ranged in thickness from 0.5 ft. thick in DSB-01 to 8.5 ft. thick in DSB-09. There was no red silty clay noted in DSB-11. The underlying glacial till ranged from 15.4 ft. bmsl to 29.3 ft. bmsl and ranged in thickness from 0.5 ft. thick in DSB-04 to 6.0 ft. thick in DSB-02. However, the borings were not designed to penetrate a third confining layer (the till), so actual glacial till thickness below the clay remains undetermined. Detailed cross sections have been prepared and are presented on Figure 2.

4.4 Laboratory Permeability Testing

Laboratory permeability testing was performed on four successful Shelby Tube samples collected from eleven borings and three selected vibrocore samples. Two additional samples of the clay-till were analyzed after they were reconstituted. Shelby Tube sample collection was attempted at each boring location but was not always successful. Samples were difficult and impossible to collect where the clay was less than three feet thick. The procedure of sealing the casing 1-foot into the clay and pushing the Shelby Tube the additional two feet required a minimum of 3-feet of clay.

Shelby Tube and vibrocore boring soil samples of the clay-till materials were collected and submitted to Paulus, Sokolowski and Sartor of Warren, NJ, to perform permeability tests

according to ASTM standards. Laboratory constant head permeability testing was performed on a total of seven (7) samples collected during the vibrocore and delineation soil boring programs. The laboratory Permeability Test Result Sheets are provided in Appendix C, laboratory Undisturbed Sample Logs of the Shelby tubes are included in Appendix D. Vibrocore Logs completed by the laboratory are included in Appendix E.

To investigate the permeability differences between the clay and clay-till, a sample was collected below the clay in the till with a split-spoon sampler at DSB-07 from 37 to 38 feet below ground surface. This sample was sent to the laboratory and its density was measured to be used in reconstituting it for a falling head permeability test. A second, disturbed sample from DSB-03 (36 to 38 ft. bgs) was reconstituted to the same density and a second falling head test was conducted in the laboratory. The results of the reconstituted samples from DSB-07 and DSB-03 were 5.05×10^{-6} to 2.17×10^{-6} cm/sec respectively. Logs of these materials are included in Appendix D.

In summary, permeability test results from successful Shelby Tubes clay samples ranged from 1.47×10^{-7} to 8.80×10^{-7} cm/sec and 2.17×10^{-6} to 5.05×10^{-6} cm/sec for the reconstituted clay-till samples. The results are summarized on Table 1.

4.5 Field Falling Head Permeability Testing

At the end of the boring program field falling head permeability tests were performed in three (3) borings where soil samples could not be collected. The time period between obtaining the final Shelby Tube samples and the grouting of the last borings provided an ideal opportunity to perform these field tests and to attempt to correlate the field observations with the laboratory generated data. The Field Falling Head Permeability Test was performed in the field for DSB-04, DSB-10 and DSB-11. The tests were performed according to the methodology and calculations contained in Time Lag and Soil Permeability in Ground-Water Observations, Bulletin No. 36, Corps of Engineers, US Army, April, 1951.

Permeability test results ranged from 2.8×10^{-3} to 1.5×10^{-6} cm/sec and the results are summarized on Table 1. The boring DSB-11 that did not contain the impermeable clay-glacial till layer also had the highest permeability result calculated at 2.8×10^{-3} cm/sec.

The results of the field permeability tests for DSB-04 (6.3×10^{-5} cm/sec at 36.0 feet depth) and DSB-10 (1.5×10^{-6} cm/sec at 34.0 feet depth) did not correlate well with the more controlled laboratory results. The laboratory permeability result for DSB-10 analyzed from a Shelby Tube sample collected from 29.5 ft. to 30.0 ft. depth below surface is calculated at 6.87×10^{-7} cm/sec; as compared with the field result of 6.3×10^{-5} cm/sec. obtained at 34.0 feet.

There was no red silty clay noted in DSB-11 and the material could not be sampled with a

Shelby Tube for laboratory permeability testing. Field permeability was calculated from the DSB-11 sample collected at 38.0 feet depth as 2.8 x 10^{-3} cm/sec. However, considering the possibility for casing leakage during the test and a comparison to the better-controlled laboratory results, the field findings may be considered biased high. Observations of the material do indicate that it is more permeable than the clay-till formation. This variation in permeability between DSB's - 04 and -10 versus DSB-11 is likely attributed to a facies change in the area of boring DSB-11. This apparent change merits future investigation and is discussed further in Section 6, Recommendations.

4.6 Surveying

All sampling locations were surveyed by a certified Professional Land Surveyor, J. Peter Borbas, PLS, Boonton, New Jersey. Horizontal locations were determined from USGS control points set on site. Vertical elevations were determined using the North American Vertical Datum 1929 (NAVD 29). The latitude and longitude of each boring location is provided on the boring log.

All vibrocore boring locations were marked on the bulkhead with nails and orange flagging. An offset distance from the face of the bulkhead perpendicular to the boring location in the canal was measured with a Leica laser or estimated using a measuring tape when severe weather conditions were encountered.

5.0 FINDINGS AND RESULTS

5.1 Geological Conditions

There is a close connection between the environment of deposition of natural sediments underlying the PKC site and the hydrogeologic characteristics of the sediments. Based on the environment of depositions identified by Carswell and others for the area, and the anticipated flow regime, the underlying lacustrine clays and glacial till provide two levels of physical confinement for the containment remedy developed in the RASR.

This program confirmed the glacial geology as generally reported in the literature. The general soil profile within the canal area consists of a layer of sludge and sediment; followed by a sand, gravel, cobble layer overlying a reddish-brown clay and/or gravel-clay till. These deposits have been confirmed to line the bottom of most of the canal. The exception to this is an area at the mid point where the vibrocore could not penetrate and where on the eastern landside clay was not found. The unconsolidated overburden deposits adjacent to the canal generally consist of fill material over a layer of silty sand with some gravel and a glacial clay-till formation.

This profile is likely the result of glacial outwash deposits and glacial lake development followed by the erosional and depositional environment associated with drainage and stream flow after the retreat of the glacier. This is supported by the outline of the historic (pre- land filling) creek and river shoreline and drainage depicted on Figure 4. The only boring that did not confirm the presence of the clay-glacial till layer was DSB-11. This area may have undergone erosion by the Kill van Kull during an early glacial retreat and formation of the Kill. A clay-till thickness is also presented on Figure 4. The top elevation of the clay and clay-till is contoured and presented as Figure 5.

The layer of sludge and sediment in the canal ranged generally from 10 to 15 feet thick followed by a 1 to 5 feet thick layer of sand and gravel or cobbles. Beneath this layer, red-brown silty clay was encountered which could not be fully penetrated by the vibrocore barrel. The clay penetration recorded in the vibrocore borings ranged from a minimal trace material in the tip of (VIB 20-1, 24-1, and 35-1) to a maximum 7.5 feet in VIB-43-2. The top of the red silty clay ranged from 17.7 ft. bmsl to 24.5 ft. bmsl.

5.2 Known Canal Obstructions

Obstructions noted on the Obstruction Area Map (Figure 3) were located based on the visual condition of the bulkhead as well as the ability of the vibrocore barrel to penetrate the sediments. As noted on the map, there are two sections of dilapidated and collapsed bulkhead, both located in the upper reaches of the canal near the pond. In these areas, it is likely that the bulkhead and collapsed remnants will have either to be removed or restored prior to sheet pile installation. There is another fairly large obstructed area in the vicinity of VIB-36 and VIB-51

that appears to extend into the center of the canal. In the early 1980's, the bulkhead on the EM side collapsed and was subsequently restored. It is possible that these obstructions are a remnant from that time period.

5.3 Permeability Results

The laboratory permeability test results range from 2.17×10^{-6} to 8.80×10^{-7} cm/sec indicating that the clay and clay-till serves as a relatively impermeable barrier to the vertical migration of contaminants. Where both are present the barrier is clearly a viable one compatible with a long-term containment-based remedy. In locations where only the clay-till is present, the barrier is acceptable with an artificial reduction in the peziometric head inside the barrier. Where sandy silt has been found, further investigation is warranted to quantify the permeability and to develop a responsive action plan.

5.4 Field Falling Head Permeability Tests Results

The results of the field permeability tests for DSB-04 (6.3×10^{-5} cm/sec at 36.0 feet depth) and DSB-10 (1.5×10^{-6} cm/sec at 34.0 feet depth) indicate that the canal floor serves as a relatively impermeable barrier to the vertical migration of contaminants. The laboratory permeability result for DSB-10 analyzed from a Shelby Tube sample collected from 29.5 ft. to 30.0 ft. depth below surface is calculated at 6.87×10^{-7} cm/sec; which loosely correlates with the field result of 6.3×10^{-5} cm/sec. obtained at 34.0 feet.

The variation in permeability between DSB's -04 and -10 versus DSB-11 merits future investigation and is discussed further in Section 6, Recommendations.

5.5 Summary Of Findings

Based on the results of the sediment investigations conducted on the Platty Kill Canal, the following can be generally concluded:

1. The vibrocore boring programs conducted over water in March 2000 and January 2001 confirmed the presence of clay and glacial till layers throughout the PKC except in an area where the vibrocore could not penetrate the upper sediments to the depth where the clay was otherwise found (approximately -15 ft below top of sediments or -29 ft below top of bulkhead). An area approximately 300-foot long on the EM side between VIB-16 and VIB-11 and approximately 100-foot long along the BI side between VIB-37 and VIB-39 remains where the clay needs to be confirmed.

2. The land soil boring delineation program conducted in January 2001 confirmed the presence of a clay and underlying clay-till layer throughout the site except in one boring, DSB-11.

Based on distance between DSB-11 and DSB-6 and between DSB-11 and DSB-4, a length of approximately 300-feet along the EM side remains where the clay has not yet been defined.

3. Permeability test results on the four (4) clay and till samples collected from the delineation soil borings ranged from 1.47×10^{-7} to 8.80×10^{-7} cm/sec.

4. Permeability test results on the three (3) clay and till samples collected from the vibrocore borings ranged from 2.46×10^{-7} to 5.64×10^{-7} cm/sec.

5. The results of the field observations and the laboratory permeability analyses have demonstrated that the clay and clay-till "canal floor" serves as an impermeable barrier that is effective in retarding the vertical migration of contaminants.

6. Obstructions were identified in selected areas of the PKC and some are large enough to warrant further investigation. The obstructions are not expected to be so large as to require modification of the selected remedy.

6.0 RECOMMENDATIONS

This section proposes additional forward engineering and investigation activities to supplement the existing information in support of a Remedial Action Work Plan to bring the Platty Kill Canal remediation effort to an acceptable closure.

1. Utilize a drilling tripod mounted on a floating platform to complete the delineation borings within the area shown on Figure 4 where the clay needs to be confirmed. Drive and wash drilling method will be used along with continuous 2-foot interval split spoon sampling. This is necessary to delineate more precisely the area where the clay layer might not be under the silt. This area is not expected to be as large as currently defined based on the spacing of the borings.

   The borings locations will be VIB-11 through VIB-16, VIB-38, 39, and 50 as shown on the figures. The "Remedial Investigation Addendum for Sampling Clay-Till", August 2000, will be followed using the "Conventional Drilling Soil Sampling Procedure" included in the Quality Assurance Project Plan, March, 1999" developed for the BI site.

2. Perform additional land borings if necessary to determine the thickness of the confining clay-glacial till unit, as might be required for engineering and/or hydrogeologic reasons.

3. Delineation and identify obstructions in the field in both the canal and the adjacent bulkhead and land areas for budgetary and engineering purposes.

The delineation work listed above is weather dependant and cannot be safely conducted in the winter season. A proposed schedule for the work is included for Department approval.

7.0 SCHEDULE

The following is a proposed schedule of implementation of the work plan addendum tasks. These tasks will be initiated after the review and approval by the NJDEP.

PLATTY KILL CANAL
IMPLEMENTATION SCHEDULE

7.0 PLATTY KILL CANAL IMPLEMENTATION SCHEDULE

The Following is a proposed schedule of implementation of the work plan addendum tasks. These tasks will be initiated after the review and approval by the NJDEP.

YEAR	2001												2002											
MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TASKS																								
Clay-Till and Obstruction Investigation																								
Prepare RI Addendum Report																								
Submit RI Addendum Report to NJDEP																								
NJDEP Review and Approval																								
Phase 2 Clay Investigatin and Delineation (Field)																								
RASR Feasibility Confirmation																								
Prepare RI Findings Addendum Report																								
Submit Phase 2 RI Addendum Report to NJDEP																								
NJDEP Review																								
Pre-application Permit meeting(s)																								
Permit identification																								
Remedial Action Workplan Preparation																								
NJDEP REVIEW																								

NOTE: Schedule contingent upon 60 day NJDEP reviews

8.0 CERTIFICATIONS

Following are the certifications as required by the Department in order to constitute a complete submittal.

8.0 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true.

6/25/01

R.R. Fisette

Vice President
Bayonne Industries Inc.

Certifications

Submission: Platty Kill Canal Remedial Investigation Addendum Report

Date: August 21, 2001

General Objection

ExxonMobil objects to the certification requirement in that the requirement of certifications herein is beyond the scope of authority granted to the Department by applicable statutes and is in conflict with the pre-existing contractual provisions of the ACO executed between ExxonMobil and the Department. The certification requirement is, thus, unconstitutional. However, in light of the fact that submissions made to the Department without the certifications are deemed by the Department to be incomplete, ExxonMobil signs below subject to the proviso that ExxonMobil and the signatories hereunder reserve all rights to challenge the certification requirement in any civil or criminal enforcement proceeding.

N.J.A.C. 7:26E-1.5(a)

This submission is certified pursuant to N.J.A.C. 7:26B-1.6 and the certification is made subject to the statutory provisions of N.J.S.A. 2C:28-3(a). Because of the limitations imposed by the manner in which information is collected and summarized, there is no one person who has direct knowledge of all the information used to prepare the submission and who also has overall responsibility for all of the information contained in the submission; however, based on the above and the General Objection and my review of the information transmitted in this submission:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, To the best of my knowledge the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of N.J.S.A. 13:1K-6 et seq., I am personally liable for the penalties set forth at N.J.S.A. 13:1K-13."

N.J.A.C. 7:26E-1.5(a)

This submission is certified pursuant to N.J.A.C. 7:26C-1.2 and the certification is made subject to the statutory provisions of N.J.S.A. 2C:28-3(a). Based on the above and the General Objection and my review of the information transmitted in this submission:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Notarized: Date: 8/22/01

RITA E. BECKETT
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Feb. 6, 2003

L. M. Racioppi
Area Manager - Refining/Chemical

9.0 BIBLIOGRAPHY

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TABLE 1:

Laboratory Constant Head Permeability Test Results			
Sample Designation	**Sample Interval (depth in feet)**	**Soil Description**	**Permeability (cm/sec)**
DSB-06	30.0 to 32.0	Reddish-brown clay	2.54×10^{-7}
DSB-08	33.0 to 34.0	Reddish-brown clay	1.47×10^{-7}
DSB-09	33.0 to 35.0	Reddish-brown clay	8.80×10^{-7}
DSB-10	29.5 to 30.0	Reddish-brown silt w/clay	6.87×10^{-7}
VIB-10-1	33.0	Red plastic silty clay	2.46×10^{-7}
VIB-17-2	33.5 to 35.0	Red plastic silty clay	5.20×10^{-7}
VIB-49-2	30.0	Red plastic silty clay	5.64×10^{-7}

Laboratory Falling Head Permeability Test Results			
Sample Designation	**Sample Interval (depth in feet)**	**Soil Description**	**Permeability (cm/sec)**
DSB-03	36.0 to 38.0	Reddish-brown till	2.17×10^{-6}
DSB-07	37.0 to 38.0	Reddish-brown clay till	5.05×10^{-6}

Field Falling Head Permeability Test Results			
Sample Designation	**Sample Interval (depth in feet)**	**Soil Description**	**Permeability (cm/sec)**
DSB-04	36.0	Reddish-brown till	6.3×10^{-5}
DSB-10	34.0	Reddish-brown till	1.5×10^{-6}
DSB-11	38.0	Reddish-brown till	2.8×10^{-3}

Tables

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DSB-11	38.0	Reddish-brown till	2.8×10^{-3}

Figures

CERTIFICATE OF INCORPORATION

OF

BAYONNE INDUSTRIES, INC.

THIS IS TO CERTIFY that we, the undersigned, do hereby associate ourselves into a corporation under and by virtue of Title 14, Corporations, General, Revised Statutes of New Jersey, and the several supplements thereto and acts amendatory thereof, and do severally agree to take the number of shares of capital stock set opposite our respective names.

FIRST: The name of the corporation is BAYONNE INDUSTRIES, INC.

SECOND: The location of its principal office in the State of New Jersey is 514 Kinderkamack Road, Oradell, New Jersey, and Joseph Schatz, Jr. is designated as the agent therein, in charge thereof, and upon whom process against this corporation may be served.

THIRD: The objects for which this corporation is formed are:

A. To conduct, carry on and engage in any manufacturing, mercantile, trading, industrial or commercial business, and to render, perform and sell services of any and all kinds in respect of any business; to manufacture, produce, purchase or otherwise acquire, own, use, import, export, lease, mortgage, pledge, exchange, sell or otherwise dispose of and generally deal and trade in and with, either as principal or agent, and

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upon commission or otherwise, goods, wares, merchandise, commodities, devices, apparatus, appliances, equipment, tangible and intangible property of all kinds, and articles of trade and commerce of every kind and description and for any and all purposes.

B. To purchase or otherwise acquire, lease, hold, own, use, sell, convey, exchange, mortgage, improve, develop and otherwise deal in and with and dispose of real property and any interest or right therein; to purchase or otherwise acquire, construct, maintain, equip, improve, mortgage, alter, manage and control, and sell or otherwise dispose of, directly or through ownership of stock in another corporation, any and all kinds of buildings, houses, stores, offices, shops, warehouses, factories, wharves, docks, piers, machinery, and equipment, plants and any and all structures and works, whether on lands of the corporation or on other lands.

C. To carry on the business of storage and warehousing, and a general warehousing business in all of its branches and in respect of any and all goods, wares and merchandise; to construct, purchase, acquire, lease, mortgage, own, hold, operate, maintain, sell or otherwise dispose of storage warehouses and tanks, and facilities and properties of all kinds appurtenant thereto or necessary or useful in connection with any such business; to issue certificates and warrants, negotiable or otherwise, to persons warehousing goods with the corporation, and to make advances or loans upon the security of such goods or otherwise; and to carry on and engage in any business, undertaking, transaction or operation commonly carried on by warehousemen.

D. To acquire the good will, business, property and assets, and to assume or undertake the whole or any part of the liabilities, of any person, firm, association or corporation engaged in the same or a similar business, and to pay for the same in cash, stock, bonds, debentures, or other securities of the corporation, or otherwise.

E. To purchase or otherwise acquire and to hold, sell, assign, transfer, mortgage, pledge or otherwise dispose of shares of the capital stock and bonds, debentures or other evidences of indebtedness, created by any other corporation or corporations, domestic or foreign, and, while the holder thereof, to exercise all the rights and privileges of ownership, including the right to vote thereon.

F. To borrow money, to make and issue promissory notes, bills of exchange, bonds, debentures and obligations and

evidences of indebtedness of all kinds, whether secured by mortgage, pledge or otherwise, without limit as to amount, and to secure the same by mortgage, pledge or otherwise.

G. To use its surplus earnings or accumulated profits in the purchase or acquisition of its own capital stock from time to time as its board of directors shall determine, and such capital stock so purchased may, if the directors so determine, be held in the treasury of the corporation as treasury stock, to be thereafter disposed of in such manner as the directors shall deem proper.

H. To enter into, make, perform and carry out contracts of every sort and kind with any person, firm, association, corporation, private, public or municipal or body politic, and with the government of the United States, or any state, territory or colony thereof, or any foreign government.

I. To guarantee the payment of dividends or interest on any shares, stocks, debentures or other securities issued by, or any other contract or obligation of, any corporation whenever proper or necessary for the business of the corporation in the judgment of its directors.

J. To aid in any manner any corporation or association, domestic or foreign, or any firm or individual, any shares of stock in which, or any bonds, debentures, notes, securities, evidences of indebtedness, contracts or obligations of which, are held by or for the corporation, directly or indirectly, or in which, or in the welfare of which, the corporation shall have any interest, and to aid or participate in the reorganization, consolidation or merger of any partnership, association or corporation in which, or in the welfare of which, the corporation shall have any interest.

K. To acquire, hold, use, sell, assign, lease, grant licenses in respect of, mortgage or otherwise dispose of letters patent of the United States or any foreign country, patent rights, licenses and privileges, inventions, improvements and processes, copyrights, trade-marks and trade names, relating to or useful in connection with any business of the corporation.

L. To conduct business in any of the states, territories, possessions or dependencies of the United States, in the District of Columbia, and in any and all foreign countries, and to have one or more offices therein and to hold, purchase, mortgage and convey real and personal property therein without

limit as to amount, but always subject to the laws of such state, territory, possession, dependency or country.

M. In general, to carry on any other business in connection with the foregoing, and to haveand exercise all the powers conferred by Title 14, Corporations, General Revised Statutes of New Jersey, and to do any or all of the things hereinbefore set forth to the same extent as natural persons might or could do, and in any part of the world.

The foregoing clauses shall be construed both as objects and powers and except where otherwise expressed, such objects and powers shall be in nowise limited or restricted by reference to, or inference from the terms of any other clause in this certificate of incorporation, but the objects and powers so specified shall be regarded as independent objects and powers, and it is hereby expressly provided that the foregoing enumeration of specific powers shall not be held to limit or restrict in any manner the powers of the corporation.

FOURTH: The total authorized capital stock of the corporation shall be One Million Five Hundred Thousand Dollars ($1,500,000), of which stock Ten Thousand (10,000) shares of the par value of One Hundred Dollars ($100) each amounting in the aggregate to One Million Dollars ($1,000,000) shall be Preferred Stock, and Five Thousand (5,000) shares of the par value of One Hundred Dollars ($100) each amounting in the aggregate to Five Hundred Thousand Dollars ($500,000) shall be Common Stock.

The amount of capital stock with which the corporation will commence business is One Thousand Dollars ($1,000),

being Ten (10) shares of Common Stock.

The designations, powers, preferences and rights of the capital stock of the corporation, and the qualifications, limitations or restrictions thereof, are as follows:

A. The holders of the Preferred Stock shall be entitled to receive, when and as declared by the Board of Directors, out of the surplus or net profits of the corporation, cash dividends at the rate of Five Dollars ($5.00) per share for each annual calendar period, payable January 1 and July 1, before any dividends for such annual period shall be paid or declared and set apart for payment on the Common Stock. Such dividends on the Preferred Stock shall be cumulative so that if dividends for any past dividend period shall not have been paid or declared and a sum sufficient for the payment thereof set apart, the deficiency shall be fully paid or set apart, but without interest, before any dividend shall be paid upon or set apart for the Common Stock. Whenever the full dividends upon the Preferred Stock for all past dividend periods shall have been paid and the full dividend thereon for the then current dividend period shall have been paid or declared and a sum sufficient for the payment thereof set apart, the Board of Directors of the corporation may in its discretion declare and pay dividends on the Common Stock, and no holder of the Preferred Stock shall be entitled to share therein,

B. The corporation may, at the option of its Board of Directors, redeem the whole or any part of the outstanding Preferred Stock at any time or from time to time, at a price per share equal to the par value thereof together with all cumulative and unpaid dividends thereon to the date fixed for redemption. Notice of election to redeem shall be mailed to each holder of shares of stock so to be redeemed, at his address as it appears on the books of the corporation, not less than thirty days prior to the date upon which the stock is to be redeemed. In case less than all of the outstanding Preferred Stock is to be redeemed, the amount to be redeemed and the method of effecting such redemption, whether by lot or otherwise, may be determined by the Board of Directors. If on or before the redemption date named in such notice the funds necessary for such redemption shall have been set aside by the corporation and made available for payment on demand to the holders of the Preferred Stock so called for redemption, then, notwithstanding that any certificate for the Preferred Stock so called for redemption shall not have been surrendered for cancellation, the dividends thereon shall cease to accrue from and after the date of redemption so designated, and all rights with respect to such Preferred Stock so called for redemption, including any right to vote or otherwise participate in the determination

of any proposed corporate action, shall forthwith after such redemption date cease and determine, except only the right of the holder to receive the redemption price therefor, but without interest. Shares of Preferred Stock redeemed pursuant to the provisions hereof shall be retired by resolution of the Board of Directors and shall not be reissued and the authorized amount of the Preferred Stock redeemed shall be deemed to be reduced to the extent of the shares so redeemed and retired.

C. In the event of the liquidation, dissolution or winding up of the corporation, whether voluntary or involuntary, the holders of the Preferred Stock shall be entitled to be paid out of the assets of the corporation the sum of One Hundred ($100) Dollars per share plus any cumulative dividends thenunpaid, before any amount shall be paid out of such assets to the holders of the Common Stock. After such payments shall have been made to the holders of such Preferred Stock, the remaining assets of the corporation shall be distributed and divided among the holders of the Common Stock alone, according to the number of shares held by each. If, upon such liquidation, dissolution or winding up, the assets of the corporation distributable as aforesaid among the holders of the Preferred Stock shall be insufficient to permit of the payment to them of said

amount, the entire assets shall be distributed ratably among the holders of the Preferred Stock.

D. Except as otherwise required by law, the holders of the shares of Preferred Stock and Common Stock shall be entitled to vote share and share alike on all questions and matters at all meetings of stockholders of the corporation.

At all elections of directors, each stockholder having a right to vote shall be entitled to as many votes as shall equal the number of his shares of stock multiplied by the number of directors to be elected, and he may cast all of such votes for a single director or may distribute them among the number to be voted for, or any two or more of them, as he may see fit.

E. No stockholder of the corporation shall by reason of his holding shares of any class have any preemptive or preferential right to purchase or subscribe to any shares of any class of the corporation, now or hereafter to be authorized, or any notes, debentures, bonds, or other securities conventible into or carrying options or warrants to purchase shares of any class, now or hereafter to be authorized, whether or not the issuance of any such shares, or such notes, debentures, bonds or other securities, would adversely affect the dividend or voting rights of such stockholder, other

than such rights, if any, as the Board of Directors in its discretion from time to time may grant, and at such price as the Board of Directors in its discretion may fix; and the Board of Directors may issue shares of any class of the corporation, or any notes, debentures, bonds, or other securities convertible into or carrying options or warrants to purchase shares of any class, without offering any such shares of any class, either in whole or in part, to the existing stockholders of any class.

FIFTH: The names and post office addresses of the incorporators and the number of shares subscribed for by each are as follows:

Name	Post Office Address	No. of Shares of Common Stock
A. Baisley Sheridan	2 Wall Street, New York 5, N.Y.	4
Stuart B. Peerce	2 Wall Street, New York 5, N.Y.	3
Edward F. McCabe	2 Wall Street, New York 5, N.Y.	3

SIXTH: The duration of the corporation is to be perpetual.

SEVENTH: In furtherance, and not in limitation of the powers conferred by statute, the Board of Directors is

expressly authorized:

To make, alter and amend the By-Laws of the corporation.

To authorize and cause to be executed mortgages and liens upon the real and personal property of the corporation.

To set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose or to abolish any such reserve in the manner in which it was created.

To determine from time to time whether, and if allowed, under what conditions and regulations the accounts and books of the corporation (other than the stock and transfer books), or any of them, shall be open to the inspection of the stockholders, and the stockholders' rights in this respect are and shall be restricted and limited accordingly.

When and as authorized by the affirmative vote of two-thirds in interest of the holders of stock having voting power on such proposal given at a stockholders' meeting duly called for that purpose, or when authorized by the written consent of two-thirds in interest of the holders of stock having voting power on such proposal, the Board of Directors shall have power and authority, by action taken at any meeting, to sell or exchange all or substantially all of the corporation's property and

assets, including its good will, upon such terms and conditions and for such considerations, which may be in whole or in part shares of stock in, and/or other securities of, any other corporation or corporations as the Board of Directors shall deem expedient and for the best interest of the corporation.

EIGHTH: The corporation may have one or more offices within or without the State of New Jersey at which the directors may hold their meetings and keep the books of the corporation, but the corporation shall always keep at its principal office in New Jersey a transfer book in which the transfers of stock can be made, entered and registered and also a book containing the names and addresses of the stockholders and the number of shares held by them respectively, which shall at all times during business hours be open to the inspection of the stockholders.

NINTH: Any meeting or meetings of the stockholders of the corporation, including the first meeting of the incorporators, may be held outside of the State of New Jersey, in the City of New York, State of New York.

TENTH: The elections for directors need not be by ballot.

ELEVENTH: The corporation reserves the right to

amend, alter or repeal any provision contained in this certificate of incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

IN WITNESS WHEREOF, we have accordingly set our hands hereto this 10th day of January, 1956.

A. Baisley Sheridan
A. Baisley Sheridan

Stuart B. Peerce
Stuart B. Peerce

Edward F. McCabe
Edward F. McCabe

Witness:
Vera Ottmann

STATE OF NEW YORK)
: SS.:
COUNTY OF NEW YORK)

BE IT REMEMBERED That on this 10th day of January, A.D. Nineteen Hundred and Fifty-six before the undersigned personally appeared A. BAISLEY SHERIDAN, STUART B. PEERCE and EDWARD F. McCABE, who I am satisfied are the persons named in and who executed the foregoing certificate, and I having first made known to them, and each of them, the contents thereof, they did each acknowledge that they signed and delivered the same as their voluntary act and deed.

Mary Ellen Magennis
Notary Public

MARY ELLEN MAGENNIS
Notary Public, State of New York
No. 41-7662350
Qualified in Queens County
Certificate filed in New York County
Commission Expires March 30, 1956

CERTIFICATE OF INCORPORATION

OF

BAYONNE INDUSTRIES, INC.

Dated: January 10, 1956

FILED AND RECORDED
JAN 11 1956
Edward J. Hart
SECRETARY OF STATE

Recorded in book ____
Page ____ of Corporations

Donovan Leisure Newton & Irvine
Two Wall Street
New York 5, N.Y.

CORPORATION TRUST COMPANY
120 Broadway, New York City, N.Y.

F1

CERTIFICATE OF AMENDMENT

TO

CERTIFICATE OF INCORPORATION

OF

BAYONNE INDUSTRIES, INC.

BY

UNANIMOUS CONSENT OF STOCKHOLDERS

WE, THE UNDERSIGNED, being all the stockholders of BAYONNE INDUSTRIES, INC., a stock corporation organized and existing under the Laws of the State of New Jersey, do hereby agree and consent that Article "FOURTH" of the Certificate of Incorporation be amended as follows:

> FOURTH: The total authorized capital stock of the corporation shall be One Million Five Hundred Thousand Dollars ($1,500,000), of which stock Ten Thousand (10,000) shares of the par value of One Hundred Dollars ($100) each amounting in the aggregate to One Million Dollars ($1,000,000) shall be Preferred Stock, of which Five Thousand (5,000) shares shall be Series A Preferred Stock and Five Thousand (5,000) shares shall be Series B Preferred Stock, and Five Thousand (5,000) shares of the par value of One Hundred Dollars ($100) each amounting in the aggregate to Five Hundred Thousand Dollars ($500,000) shall be Common Stock, of which Two Thousand Four Hundred and Ninety (2,490) shares shall be Series A Common Stock and Two Thousand Five Hundred and Ten (2,510) shares shall be Series B Common Stock.

CCJ000002

The amount of capital stock with which the corporation will commence business is One Thousand Dollars ($1,000), being Ten (10) shares of Series B Common Stock.

The designations, powers, preferences and rights of the capital stock of the corporation, and the qualifications, limitations or restrictions thereof, are as follows:

A. The holders of the Preferred Stock shall be entitled to receive, when and as declared by the Board of Directors, out of the surplus or net profits of the corporation, cash dividends at the rate of Five Dollars ($5) per share for each annual calendar period, payable January 1 and July 1, before any dividends for such annual period shall be paid or declared and set apart for payment on the Common Stock. Such dividends on the Preferred Stock shall be cumulative so that if dividends for any past dividend period shall not have been paid or declared and a sum sufficient for the payment thereof set apart, the deficiency shall be fully paid or set apart, but without interest, before any dividend shall be paid upon or set apart for the Common Stock. Whenever the full dividends on the Preferred Stock for all past dividend periods shall have been paid and the full dividend thereon for the then current dividend period shall have been paid or declared and a sum sufficient for the payment thereof set apart, the Board of Directors of the corporation may in its discretion declare and pay dividends on the Common Stock, and no holder of the Preferred Stock shall be entitled to share therein.

B. The corporation may, at the option of its Board of Directors, redeem the whole or any part of the outstanding Preferred Stock at any time or from time to time, at a price per share equal to the par value thereof together with all cumulative and unpaid dividends thereon to the date fixed for redemption. Notice of election to redeem shall be mailed to each holder of shares of stock so to be redeemed, at his address as it appears on the books of the corporation, not less than thirty days prior to the date upon which the stock is to be redeemed. In case less than all of the outstanding Preferred

Stock is to be redeemed, the amount to be redeemed and the method of effecting such redemption, whether by lot or otherwise, may be determined by the Board of Directors; provided that, in any such case the same number of shares of the outstanding Series A Preferred Stock and Series B Preferred Stock shall be redeemed. If on or before the redemption date named in such notice the funds necessary for such redemption shall have been set aside by the corporation and made available for payment on demand to the holders of the Preferred Stock so called for redemption, then, notwithstanding that any certificate for the Preferred Stock so called for redemption shall not have been surrendered for cancellation, the dividends thereon shall cease to accrue from and after the date of redemption so designated, and all rights with respect to such Preferred Stock so called for redemption, including any right to vote or otherwise participate in the determination of any proposed corporate action, shall forthwith after such redemption date cease and determine, except only the right of the holder to receive the redemption price therefor, but without interest. Shares of Preferred Stock redeemed pursuant to the provisions hereof shall be retired by resolution of the Board of Directors and shall not be reissued and the authorized amount of the Preferred Stock redeemed shall be deemed to be reduced to the extent of the shares so redeemed and retired.

The Corporation shall not at any time purchase any shares of its Preferred Stock of either Series unless it at the same time purchases the same number of shares of its Preferred Stock of the other Series.

C. In the event of the liquidation, dissolution or winding up of the corporation, whether voluntary or involuntary, the holders of the Preferred Stock shall be entitled to be paid out of the assets of the corporation the sum of One Hundred ($100) Dollars per share plus any cumulative dividends then unpaid, before any amount shall be paid out of such assets to the holders of the Common Stock. After such payments shall have been made to the holders of such Preferred Stock, the

remaining assets of the corporation shall be distributed and divided among the holders of the Common Stock alone, according to the number of shares held by each. If, upon such liquidation, dissolution, or winding up, the assets of the corporation distributable as aforesaid among the holders of the Preferred Stock shall be insufficient to permit of the payment to them of said amount, the entire assets shall be distributed ratably among the holders of the Preferred Stock.

D. Except as otherwise required by law, and except as to the election of directors, the holders of the shares of Preferred Stock and Common Stock shall be entitled to vote share and share alike on all questions and matters at all meetings of stockholders of the corporation. On all questions as to which a vote by classes is required by law, the Preferred Stock of both Series shall vote together share and share alike as a single class of Preferred Stock and the Common Stock of both Series shall vote together share and share alike as a single class of Common Stock.

At all times when any Series A Preferred Stock is outstanding the holders thereof, voting separately, shall be entitled to elect one director. At all times when any Series A Preferred Stock is outstanding, the holders of the Series A Common Stock, voting separately, shall be entitled to elect one director, and at all times when no Series A Preferred Stock is outstanding, the holders of the Series A Common Stock, voting separately, shall be entitled to elect two directors. At all times when any Series B Preferred Stock is outstanding the holders thereof, voting separately, shall be entitled to elect one director. At all times when any Series B Preferred Stock is outstanding, the holders of the Series B Common Stock, voting separately, shall be entitled to elect two directors, and at all times when no Series B Preferred Stock is outstanding, the holders of the Series B Common Stock, voting separately, shall be entitled to elect three directors.

E. No stockholders of the corporation shall by reason of his holding shares of any class have any preemptive or preferential right to purchase or subscribe to any shares of any class of the corporation, now or hereafter to be authorized, or any notes, debentures, bonds, or other securities convertible into or carrying options or warrants to purchase shares of any class, now or hereafter to be authorized, whether or not the issuance of any such shares, or such notes, debentures, bonds, or other securities, would adversely affect the dividend or voting rights of such stockholders, other than such rights, if any, as the Board of Directors in its discretion from time to time may grant, and at such price as the Board of Directors in its discretion may fix; and the Board of Directors may issue shares of any class of the corporation, or any notes, debentures, bonds, or other securities convertible into or carrying options or warrants to purchase shares of any class, without offering any such shares of any class, either in whole or in part, to the existing stockholders of any class.

F. Any and all of the stockholders of this Corporation may from time to time enter into such agreements with each other and with the Corporation as may seem expedient to them relating to the shares of stock held by them and granting to each other and to the Corporation options to purchase such shares on terms and upon conditions to be specified in such agreements and limiting the transfer of such shares until such options have been satisfied and thereafter any transfer of said shares shall be made in accordance with the provisions of said agreements, provided that before the actual transfer of said shares on the books of the Corporation written notice of such agreement shall be given to this Corporation by filing a copy thereof with the Secretary of the Corporation and a reference to such agreement shall be stamped, written or printed upon the certificate representing such shares.

And we do hereby, under Section 14:10-3, Revised Statutes of New Jersey (Revision of 1937), waive all notice of a Special Meeting of Stockholders to act upon said amendment

and do hereby waive all other requirements of Section 14:11-2, Revised Statutes of New Jersey (Revision of 1937).

And we do further certify:

That the location of the principal office in New Jersey is at the foot of Twenty-Second Street, Bayonne, New Jersey; and that the name of the agent therein and in charge thereof, upon whom process against this corporation may be served is Worth H. Franklin.

IN WITNESS WHEREOF, we have signed this instrument this 11th day of May, 1956.

THE PITTSTON COMPANY

By _____
Executive Vice President

CERTIFIED TERMINALS CORPORATION

By _____
Vice President

_____
David Teitelbaum

_____
M. Warren Berk

_____
George Moser

STATE OF NEW YORK)
: SS.:
COUNTY OF NEW YORK)

STUART B. PEERCE, the secretary of BAYONNE INDUSTRIES, INC., being duly sworn, on his oath says that the foregoing consent to the amendment of the certificate of incorporation of said corporation has been signed by every stockholder of said company.

Stuart B. Peerce

Subscribed and sworn to before me, a Notary Public of the State of New York, this 11th day of May, 1956.

Jane Smith
Notary Public

JANE SMITH
Notary Public, State of New York
No. 31-3732600
Certified in N.Y.Co.Clk's & Reg.Off.
Commission Expires March 30, 1957

CERTIFICATE OF AMENDMENT

TO

CERTIFICATE OF INCORPORATION

OF

BAYONNE INDUSTRIES, INC.

BY

UNANIMOUS CONSENT OF STOCKHOLDERS

FILED AND RECORDED

MAY 14 1956

Edward J. Hatter

SECRETARY OF STATE

Donovan Leisure Newton & Irvine

Two Wall Street

New York 5, N.Y.

H.1

Dec Capt Stk.

CERTIFICATE OF AMENDMENT

TO

CERTIFICATE OF INCORPORATION

OF

BAYONNE INDUSTRIES, INC.

Donovan Leisure Newton & Irvine
Two Wall Street
New York 5, N.Y.

CCJ000003

The amount of capital stock with which the corporation will CERTIFICATE OF AMENDMENT Thousand Dollars ($1,000), being One Thousand (1,000) shares of Series B Common Stock. TO

The designations and powers, preferences and rights of the capital stock of the corporation, and the qualifications, limitations or restrictions thereof, are as follows: CERTIFICATE OF INCORPORATION

BAYONNE INDUSTRIES, INC.

B. The corporation may, upon action of its Board of Directors, redeem the whole or any part of the outstanding Preferred Stock at any time or from time to BY UNANIMOUS CONSENT OF STOCKHOLDERS to One Hundred Dollars ($100) together with all cumulative and unpaid dividends thereon to the date fixed for redemption. Notice of election to redeem shall be mailed to each holder of shares of stock so to be redeemed, addressed to them as appears on the books of the corporation, not less than thirty days prior to the date upon which the same is to be redeemed. In case less than all of the outstanding shares of stock is to be redeemed, the amount to be redeemed and the method of allocating such redemption, whether by lot or otherwise, may be determined by the Board of Directors, provided that, in any such case, the number of shares of the outstanding Series A Preferred Stock and Series B Preferred Stock to be redeemed shall be in the same proportion, as near as may be, to the number of shares of each of such series outstanding on the record date named in such notice that the funds necessary for such redemption shall have been set aside by the corporation and made available for payment on account to the holders of the Preferred Stock so called for redemption, then, notwithstanding that any certificate for the Preferred Stock so called for redemption shall not have been surrendered, the shares represented thereby shall be deemed to be redeemed and the dividends thereon shall cease to accrue after the date fixed for redemption, and all rights of the holders thereof as stockholders of the corporation, except the right to receive the redemption price thereof, shall cease and terminate. Preferred Stock redeemed shall be canceled and reduced to the extent of the shares so redeemed and retired.

WE, THE UNDERSIGNED, being the holders of all outstanding shares of the common and preferred stock of BAYONNE INDUSTRIES, INC., a stock corporation organized and existing under the laws of the State of New Jersey, do hereby agree and consent that the first three paragraphs and sub-paragraph B of Article "FOURTH" of the Certificate of Incorporation be amended to read as follows:

FOURTH: The total authorized capital stock of the corporation shall be Fifteen Thousand Dollars ($15,000), of which stock Ten Thousand (10,000) shares of the par value of One Dollar ($1.00) each amounting in the aggregate to Ten Thousand Dollars ($10,000) shall be Preferred Stock, of which Five Thousand (5,000) shares shall be Series A Preferred Stock and Five Thousand (5,000) shares shall be Series B Preferred Stock, and Five Thousand (5,000) shares of the par value of One Dollar ($1.00) each amounting in the aggregate to Five Thousand Dollars ($5,000) shall be Common Stock, of which Two Thousand Four Hundred and Ninety (2,490) shares shall be Series A Common Stock and Two Thousand Five Hundred and Ten (2,510) shares shall be Series B Common Stock.

The amount of capital stock with which the corporation will commence business is One Thousand Dollars ($1,000), being One Thousand (1,000) shares of Series B Common Stock.

The designations, powers, preferences and rights of the capital stock of the corporation, and the qualifications, limitations or restrictions thereof, are as follows:

B. The corporation may, at the option of its Board of Directors, redeem the whole or any part of the outstanding Preferred Stock at any time or from time to time, at a price per share equal to One Hundred Dollars ($100) together with all cumulative and unpaid dividends thereon to the date fixed for redemption. Notice of election to redeem shall be mailed to each holder of shares of stock so to be redeemed, at his address as it appears on the books of the corporation, not less than thirty days prior to the date upon which the stock is to be redeemed. In case less than all of the outstanding Preferred Stock is to be redeemed, the amount to be redeemed and the method of effecting such redemption, whether by lot or otherwise, may be determined by the Board of Directors; provided that, in any such case the same number of shares of the outstanding Series A Preferred Stock and Series B Preferred Stock shall be redeemed. If on or before the redemption date named in such notice the funds necessary for such redemption shall have been set aside by the corporation and made available for payment on demand to the holders of the Preferred Stock so called for redemption, then, notwithstanding that any certificate for the Preferred Stock so called for redemption shall not have been surrendered for cancellation, the dividends thereon shall cease to accrue from and after the date of redemption so designated, and all rights with respect to such Preferred Stock so called for redemption, including any right to vote or otherwise participate in the determination of any proposed corporate action, shall forthwith after such redemption date cease and determine, except only the right of the holder to receive the redemption price therefor, but without interest. Shares of Preferred Stock redeemed pursuant to the provisions hereof shall be retired by resolution of the Board of Directors and shall not be reissued and the authorized amount of the Preferred Stock redeemed shall be deemed to be reduced to the extent of the shares so redeemed and retired.

The Corporation shall not at any time purchase any shares of its Preferred Stock of either Series unless it at the same time purchases the same number of shares of its Preferred Stock of the other Series.

Subparagraphs A, C, D, E and F of said Article FOURTH shall not be changed.

And we do hereby, under Section 14:10-3, Revised Statutes of New Jersey (Revision of 1937), waive all notice of a Special Meeting of Stockholders to act upon said amendment and do hereby waive all other requirements of Section 14:11-2 Revised Statutes of New Jersey (Revision of 1937).

And we do further certify:

That the location of the principal office in New Jersey is at the foot of Twenty-Second Street, Bayonne, New Jersey; and that the name of the agent therein and in charge thereof, upon whom process against this corporation may be served is Worth H. Franklin.

IN WITNESS WHEREOF, we have signed this instrument this 30 day of July, 1956.

THE PITTSTON COMPANY

By _____
President

CERTIFIED TERMINALS CORPORATION

By _____
Vice President

_____
David Teitelbaum

_____
M. Warren Berk

_____
George Moser

STATE OF NEW YORK)
: SS.:
COUNTY OF NEW YORK)

STUART B. PEERCE, the Secretary of BAYONNE INDUSTRIES, INC., being duly sworn, on his oath says that the foregoing consent to the amendment of the certificate of incorporation of said corporation has been signed by every stockholder of said company.

Stuart B. Peerce

Subscribed and sworn to before me, a Notary Public of the State of New York, this 30 day of July, 1956.

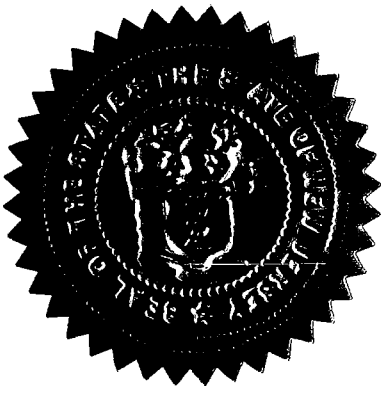
Jane Smith
Notary Public

JANE SMITH
Notary Public, State of New York
No. 31-3731600
Certified in N.Y. Co. Clk's & Reg. Off.
Commission Expires March 30, 195_

STATE OF NEW JERSEY
DEPARTMENT OF TREASURY
CERTIFICATE RELATIVE TO CORPORATE FILING

BAYONNE INDUSTRIES, INC.

I, the Treasurer of the State of New Jersey, do hereby certify that the above named business did on August 10, 1956, file and record in this department a certificate of Amendment as by the statutes of this state required.



IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal at Trenton, this 12th day of January, 2007

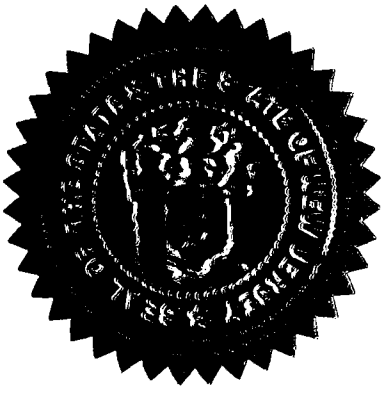
Bradley Abelow

Bradley Abelow
Treasurer

STATE OF NEW JERSEY
DEPARTMENT OF TREASURY
CERTIFICATE RELATIVE TO CORPORATE FILING

BAYONNE INDUSTRIES, INC.

I, the Treasurer of the State of New Jersey, do hereby certify that the above named business did on July 24, 1984, file and record in this department a certificate of Merger w/Bayonne Terminal Warehouse Corporation as by the statutes of this state required.



IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal at Trenton, this 12th day of January, 2007

Bradley Abelow

Bradley Abelow
Treasurer

Jay Dardenne
Secretary of State

FOREIGN CORPORATION ANNUAL REPORT

For Period Ending
May 09, 2007
Ck# 449

Mailing Address Only (INDICATE CHANGES TO THIS ADDRESS IN THIS BOX)

36180618 F 126
IMTT HOLDINGS INC.
C/O DARRYL DAIGS
1145 FOURTH ST.
HARVEY, LA 70058

(INDICATE CHANGES TO THIS ADDRESS IN THIS BOX)
Domicile Street Address in State Where Incorporated
(Do Not Use P.O. Box)
201 N. MARKET ST.
WILMINGTON, DE 19801

Federal Tax ID Number

Our records indicate the following registered agents for the corporation. Indicate any changes or deletions below.
All agents must have a Louisiana address. Do not use a P. O. Box.
A NEW REGISTERED AGENT REQUIRES A NOTARIZED SIGNATURE.

DARRYL DAIGS
1145 FOURTH ST./HARVEY, LA 70058

I hereby accept the appointment of registered agent(s).

Darryl Daigs
New Registered Agent Signature

Sworn to and subscribed before me on
NOTARY NAME MUST BE TYPED OR PRINTED WITH NOTARY #

Charles B Johnson
Notary Signature Notarial # 27345 Date 4/12/07
CHARLES B JOHNSON

Our records indicate the following officers or directors for the corporation. Indicate any changes or deletions below. If space is needed for additional officers/directors, attach an addendum. Include addresses. Do not use a P.O. Box. Indicate all offices held by each individual listed.

THOMAS B. COLEMAN PRES/DIR
321 ST. CHARLES AVE./NEW ORLEANS, LA 70130

BERTRAND F. ARTIGUES SECT/TREAS
321 ST. CHARLES AVE./NEW ORLEANS, LA 70130

JAMES J. COLEMAN, JR. OFFICER/DIR
321 ST. CHARLES AVE./NEW ORLEANS, LA 70130

2007 APR 16 A 9:39
SECRETARY OF STATE

Our records indicate the following addresses for the corporation. Indicate any changes below.

Principal business office wherever located:
1145 FOURTH ST./HARVEY, LA 70058

Registered office in Louisiana (Must be the same as agent's address.):
1145 FOURTH ST./HARVEY, LA 70058

Principal business establishment in Louisiana (Do not use a P. O. Box.):
321 ST. CHARLES AVE./NEW ORLEANS, LA 70130

	To be signed by authorized individual	Title	Phone	Date
SIGN--->	Charles B Johnson	Secretary		04/12/07

Enclose filing fee of $ 25.00
Make remittance payable to Secretary of State
Do Not Send Cash
Do Not Staple
web site: www.sos.louisiana.gov

DO NOT STAPLE

Return by: May 09, 2007
to: Commercial Division
P.O. Box 94125
Baton Rouge, LA 70804-9125
Phone (225) 925-4704

CHECK IF NO CHANGE ( )

DX2807

UNSIGNED REPORTS WILL BE RETURNED

BUREAU OF STORMWATER PERMITTING
DIVISION OF WATER QUALITY

MEMORANDUM

DATE: June 21, 1995

TO: Richard De Wan, Chief
Bureau of Standard Permitting (BSP)

Through Brian McLendon, Supervisor

FROM: Steve Johnson

SUBJECT: IMTT-Bayonne-Transfer of Permit No. NJ0001341 to BSP

Recommedation: The Bureau of Stormwater Permitting recommends IMTT-Bayonne (NJ0001341), currently assigned to Steve Johnson, for transfer to Bureau of Standard Permitting based on the facts which follow.

The permit was transferred to Bureau of Stormwater Permtting (BSWP) in 1993, based on BSP's belief that the only discharges to surface water were stormwater. This permit includes discharge categories 05, B, and W.

I inspected the IMTT-Bayonne Facility on Tuesday, June 20, 1995. The facility's comingled discharges regulated by this permit include besides stormwater: heavily contaminated ground water (floating product and volatile organics), tank and line test and washout waters, and tank bottom waters. IMTT-Bayonne may not have indicated all these discharges, especially tank and line washout discharges, in its permit renewal application of 1990, however, the existing permit (expired 1990) did have a "B" discharge category. The existing permit regulates this discharges with effluent limits. To meet the limits, the comingled discharges are treated via a treatment train consisting of API oil/water separation, lagoon for settling, equalization and treatment, induced air floatation, and granular activated carbon treatment. Please be advised that sludge derived from API separator may have been at times classified as hazardous waste (listed D016 Benzene).

Furthermore, the strongly contaminated ground water discharges to stormwater drains (and is treated by the treatment train) and seeps into Platykill Creek. The banks of the Playkill are black stained, and saturated with oil, and appear to me to be devoid of all vegetation and other life forms. IMTT has a MOA with NJDEP

addressing the ground water problems. Oil containment booms have been placed in the Platykill to prevent oil movement into the harbor and Kill Van Kull.

Additionally, it is my understanding that the facility would like the Department to consolidate IMTT-Bayonne's discharges via its one discharge serial number with IMTT-BX permit No. NJ0002089 currently assigned to Mr. Ben Manhas of your Bureau of Standard Permitting. These IMTT facilities are adjoining properties.

Please feel free to contact me at 3-7021, if you have any questions on this transfer.

Attachment: File NJ0001341

cc: Barry Chalofsky, Manager BSWP

New Jersey Department of Environmental Protection and Energy
Bureau of Stormwater Permitting
CN 423
Trenton, New Jersey 08625

Nonapplicability Form

NAP
8758 RR

Please fill out this form if you have determined that your facility does not require a Stormwater Discharge Permit, and return the completed form to the attention of the **Administrative Support Unit**, at the above address.

1. Facility Information: International Tank Bayonne (Facility Name) | 6719 (SIC Code)

321 St. Charles Ave. (Street Address) | -- (Suite/Building #)

New Orleans (City) | LA (State) | 70130 (Zip Code) | Orleans (County)

Robert C. Weaver (Contact Person) | (504) 586-8300 (Phone Number)

2. Please check the appropriate box(es) which provide(s) your exclusion from the requirement to obtain a Stormwater Discharge Permit.

☐ All the stormwater from the site is discharged to a combined sewer (one that carries sanitary wastewater and stormwater to a municipal treatment plant). **If so, the certification on the back of this form must be completed.**

☐ All the stormwater on or leaving the site soaks into the ground: (This determination may be subject to verification by Department site inspection.).

☒ The facility has an existing NJPDES permit for all of its discharges of stormwater to surface waters.
NJPDES Permit # NJ0001341 *See "other" below
This Permit is for operating company IMTT-Bayonne

☐ The building housing all of the regulated industrial activity extends all the way to the property line on all sides, there is no loading dock, and there is no industrial activity occurring on the roof.

☐ All industrial activity has ceased and no "Significant Material" remains exposed to stormwater.

☒ Other **(attach a printed or typed explanation).** International Tank Bayonne is part-owner of Bayonne Industries which leases Hudson County land to IMTT-Bayonne

3. This form can only be signed by the following persons: vice president level or higher in a corporation; general partner or proprietor in a partnership or sole proprietorship; principal executive officer or ranking elected official in a government or public agency, or by someone authorized by such a person to sign this form (attach written authorization).

Robert C. Weaver (signature) | June 7, 1993 (date)

Dr. Robert C. Weaver (print name) | Vice President (title)

DDA000002

Certification of Discharge to a Combined Sewer

For facilities which discharge all their stormwater to a combined sewer, the following certification must be completed by a representative from a municipal sewer or public works department, sewerage agency, or municipal engineer.

Facility Name: _____

Address: _____

_____

_____

Lot & Block #: _____

Municipality: _____

_____ _____

signature *date*

_____ _____

print name *title*

_____

name of the certifying agency

Let's protect our earth

4/19

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
METRO BUREAU OF REGIONAL ENFORCEMENT
2 BABCOCK PLACE
WEST ORANGE, NEW JERSEY 07052

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

January 18, 1989

Mr. Walter Pytlik, Plant Manager
IMTT Bayonne, Incorporated
Foot of 22nd Street
Bayonne, NJ 07002

Re: Compliance Evaluation Inspection
IMTT Bayonne, Incorporated
NJPDES No: NJ 0001341
Bayonne/Hudson County

Dear Mr. Pytlik:

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on December 7, 1988. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

1. The facility has not been monitoring DSN 001 for Toxic Organic Pollutants as required by NJPDES Permit No: NJ 0001341

2. The Platty Kill Pond is grossly contaminated with oil.

3. Seepage from the Platty Kill Pond into Platty Kill Creek has resulted in an unpermitted discharge of oil contaminated wastewater to the surface waters of the State. A revised implementation timetable for the construction of a slurry wall to provide a hydraulic barrier between the pond and the Creek has not been submitted to this office as required by DWR's September 23, 1988 directive. (A copy of the directive is enclosed for your information).

DDA000003

The deficiencies noted above are significant violations of the terms and conditions of your NJPDES permit and/or the Water Pollution Control Act Regulations (N.J.A.C. 7:14A-1 et seq.). You are therefore DIRECTED to institute corrective measures. A written report concerning specific details of remedial measures to be instituted, as well as an implementation timetable, must be submitted to this Department and USEPA, Permits Administration Branch within thirty (30) calendar days of the date of this correspondence.

You are advised that the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) provides for substantial monetary and criminal penalties in cases of permit violations.

Please direct all correspondence and inquiries to Maureen C. O'Donnell, the Environmental Specialist responsible for this case, who can be reached at (201) 669-3900, or by letter through this Division.

Failure to fully comply with the above will result in the initiation of enforcement action by this Department. This shall in no way be construed, however, to indicate any exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Very truly yours,

Original signed by

Thomas B. Harrington
Supervisor, Surface
Water Unit
Metro Bureau of
Regional Enforcement

E10:G25

c: Dr. Richard A. Baker, USEPA
Mr. Paul Molinari, USEPA
Ms. Maryann Walsh, H.O.
Bureau of Ground Water Discharge Control

Enclosure

bc: Zaheer Hussain, Enforcement
Criminal Justice
Central File

Let's protect our world

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
METRO BUREAU OF REGIONAL ENFORCEMENT
2 BABCOCK PLACE
WEST ORANGE, NEW JERSEY 07052

Jorge H. Berkowitz, Ph.D.
Acting Director

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

June 30, 1989

Mr. Walter Pytlik, Plant Manager
IMTT Bayonne, Incorporated
Foot of 22nd Street
Bayonne, New Jersey 07002

Re: Compliance Evaluation Inspection
IMTT Bayonne, Incorporated
NJPDES No. NJ 0001341
Bayonne/Hudson County

Dear Mr. Pytlik:

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on June 21, 1989. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

1) Discharge Monitoring Reports (DMR's) for the period December 1988 - April 31, 1989 reveal that the facility exceeded effluent limitations at DSN 001 in violation of NJPDES Permit NJ0001341 as described in Appendix I of the enclosed inspection report.

2) The facility has not sampled for Toxic Organic Pollutants during the monitoring period extending from December 1988 - April 1989 as

DDA000004

required by NJPDES Permit No. NJ0001341. This requirement was previously brought to IMTT's attention during a compliance evaluation inspection conducted by this Division in December 1988.

3) The Platty Kill Pond is grossly contaminated with oil.

4) Seepage from the Platty Kill Pond into Platty Kill Creek is resulting in an unpermitted discharge to the surface waters of this State.

The deficiencies noted above are significant violations of the terms and conditions of your NJPDES permit and/or the Water Pollution Control Act Regulations (N.J.A.C. 7:14A-1 et seq.). In regards to Deficiencies No. (3) and No. (4) above, this office acknowledges that IMTT is working towards the closure of the Platty Kill Pond which will eliminate these deficiencies. You are therefore DIRECTED to institute measures to correct Deficiencies No. (1) and No. (2) above. A written report concerning specific details of remedial measures to be taken, as well as an implementation timetable, must be submitted to this Department and USEPA, Permits Administration Branch, within thirty (30) calendar days of the date of this correspondence.

You are advised that the New Jersey Water Pollution Control Act (N.J.S.A. 56:10A-1 et seq.) provides for substantial monetary and criminal penalties in cases of permit violations.

Please direct all correspondence and inquires on this compliance evaluation inspection to James J. Genovese, who can be reached at (201) 669-3900 or by letter through this Division. Any correspondence on the closure of the Platty Kill Pond should continue to be addressed to Steven A. Ciambruschini of this office.

Failure to fully comply with the above will result in the initiation of enforcement action by this Department. This shall in no way be construed; however, to indicate any

exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Very truly yours,

Thomas B. Harrington

Thomas B. Harrington
Supervisor
Surface Water Unit
Metro Bureau of
Regional Enforcement

E9

c: Richard A. Baker, USEPA
Patrick Durack, USEPA
Jeanne Massavelli, H.O.

bc: Zaheer Hussain
Criminal Justice
Central File

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029, Trenton, N.J. 08625

DISCHARGE SURVEILLANCE REPORT

PERMIT # NJ0001341 NO. OF DISCHARGES MONITORING WELLS TOT CLASS MIN-IND

DISCHARGER IMTT - BAYONNE

OWNER BAYONNE INDUSTRIES, INC. NEW ORLEANS LA

MUNICIPALITY BAYONNE COUNTY HUDSON WATERSHED CODE GW

LOCATION FOOT OF

RECEIVING WATERS GROUND WATER OF THE STATE STREAM CLASS N/A

LICENSED OPERATOR & PLANT CLASS

TRAINEE/ASSISTANT OTHER INFO. (201) 437-2200

DEFICIENCIES OR COMMENTS SEE ATTACHED LETTER

NOTE: NJPDES DGW PERMIT NOTIFICATION GUIDELINE SHEET IS ATTACHED FOR YOUR INFORMATION

DISCHARGE TO GROUND WATER RATING

OVERALL RATING ☐ Acceptable ☐ Conditionally Acceptable ☑ Unacceptable

EVALUATOR THEOPHILUS ASHIE TITLE ENVIRONMENTAL SPECIALIST

INFORMATION FURNISHED BY (Name) KEVIN MARLOWE MICHAEL KOSCELNAK, RICHARD FISETTE

(Title) SAFETY MANAGER TERMINAL MANAGER (Organization) IMTT-BAYONNE

DATE OF INSPECTION APRIL 23, 1991

DDA000005

Form DWR-063
1/86

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029, Trenton, N.J. 08625

Permit # NJ0001341

DISCHARGE SURVEILLANCE REPORT

Date 4/22/91

GROUND WATER DISCHARGE EVALUATION

RATING CODES: S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable NI = NOT INSPECTED

		RATING	COMMENTS
GENERAL	TYPE DGW	—	SURFACE IMPOUNDMENTS
	RCRA FACILITY	—	GEN # NJD 991291105
	DISCHARGE NUMBER	—	001
	WASTEWATER SOURCE/FREQ.	—	STORMWATER RUNOFF
	PUMPS AND PIPING	S	
	ALTERNATE POWER/ALARM	NA	
	BYPASS	S	NONE
MONITORING SYSTEM	WATER SUPPLY/MONITORING		
	AQUIFERS MONITORED	—	SHALLOW
	UPGRADIENT WELLS		
	DOWNGRADIENT WELLS		
	SAMPLING PLAN	S	AS PER PERMIT QUARTERLY
	SAMPLING PROCEDURES	NI	PERFORMED BY ENSR & ECC
	LAB CERTIFICATION	S	LAB. RESOURCES: CERT # U2046
	RECORDS	U	NOT MAINTAINED ON SITE: FAILED TO PROVIDE
	REPORTING		COPIES UPON REQUEST OF MONITOR WELL
			REPORTING FORMS WELL # 17 WAS DE-
			MARD, ILLEGIBLE SPECIAL CONDITIONS NOTIFICATION REQUIRED
LYSIMETER/ MONITORED WELLS	DRILLING PERMIT NUMBERS	NI	SEE ELEVATION INFORMATION
	WELLS NUMBERED/IDENTIFIED	S	
	LOCKS/INTEGRITY	U	WELLS NOT PROPERLY LOCKED AND SECURED
	ABANDONMENT PLAN		
	ELEVATION INFORMATION	NI	INFORMATION CONTAINED ON 2 MONITOR WELL
	WATER LEVEL MEASUREMENT	NI	REPORT FORMS SEE RECORDS & REPORTING FORMS
	TURBIDITY FREE	NI	
	SUFFICIENT YIELD	NI	
		—	FREE PRODUCT OBSERVED ON SEVERAL WELLS
UIC	CLASSIFICATION	—	ABANDONED SEPTIC TANK IN FRONT
	PERC./LEACHING PROBLEMS	↑	OF MAINTENANCE BUILDING
	SOLVENTS/REPAIRS MADE	NA	
	MAX. PRESSURE & VOLUME	↓	
	CLOSEST USDW/SUPPLY WELLS	↓	
	MOUND INTEGRITY/COVER	↓	
IMPOUNDMENT	LINING INTEGRITY	—	WEMLO LAGOON: LINED; PLATY KILL POND: UNLINED
	EMBANKMENT INTEGRITY	S	
	LEACHATE COLLECTION SYS.	—	
	SOLIDS BUILDUP/REMOVAL	—	
	HEIGHT TO FREEBOARD	M	2½ FEET OR LESS AT INSPECTION
	APPEARANCE	U	OIL OBSERVED IN PLATY KILL
			SLIGHT SHEEN IN WEMLO LAGOON
LAND APPLICATION/ SPRAY SYSTEM	EVEN DISTRIBUTION	↑	
	PONDING/RUNOFF/EROSION	↑	
	SPRAY HEADS	↑	
	DISCING	NA	
	COVER CROP	↓	
	APPEARANCE	↓	
	BUFFER ZONE	↓	
	SLUDGE STOCKPILED	↓	
		↓	
		↓	
OTHER	SEEPAGE/LEACHING	NI	
	ODOR/AEROSOLS	NI	
	FLOW MONITORING/RECORDING	↓	

DWR-033-A

N.J.D.E.P.
D.W.R.
DISCHARGE SURVEILLANCE REPORT

Permit #: NJ0001341
Date: 4 - - 91

INDUSTRIAL TREATMENT PROCESS EVALUATION

RATING CODES: S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable

		RATING	COMMENTS
GENERAL	DISCHARGE # 001	—	
	WASTEWATER SOURCE(S)	—	TANK FARM - STORM WATER RUNOFF
	CONTINUITY OF OPERATION	—	INTERMITTENT
	BYPASSES/OVERFLOWS	NA	
	S.P.C.C. PLAN	S	REVIEWED 5-5-88
	ALARM SYSTEMS	S	
	ALTERNATE POWER SUPPLY	NA	
TREATMENT PROCESSES	API SEPARATOR	—	EXCESSIVE OIL ON UNITS SURFACE
	CARBON FILTERS	—	
	WEMCO LAGOON - POLYETHYLENE LINER	U	OIL SHEEN VISIBLE
	WEMCO AIR FLOTATION UNIT	M	PUMP NEEDS TO BE TIGHTENED UP
	SETTLING LAGOON - CLAY OIL POND - CLAY LINER	M	CONTAMINATION OF LAGOON (BIOREMEDIATION - BEING UNDERTAKEN
SLUDGE HANDLING	DISPOSAL SITE	S	S & W WASTE - KEARNY NJD 980 911 05
OTHER INFORMATION	FLOW METER & RECORDER	—	
	RECORDS	S	DMR / PERMIT
	SAMPLING PROCEDURES	S	LAB TECHNICIANS
	ANALYSES PERFORMED BY	S	LAB FACILITIES WESTWOOD, NJ (CERT # 02044)
			NJPDES PERMIT NJ0001341 EXPIRED 7-31-91 RENEWAL HIGHLIGHTING SUBMITTED
	FINAL EFFLUENT APPEARENCE	M	SLIGHT YELLOWISH-BROWN COLOR/OIL SHEEN
	REC. WATERS APPEARENCE	U	OIL SHEEN OBSERVED

3/81

CN 029, Trenton, N.J. 08625

DISCHARGE SURVEILLANCE REPORT

Permit # [illegible]

Date 4-17-91

PLANT DIAGRAM AND FLOW SEQUENCE:

See Diagram on Page 646

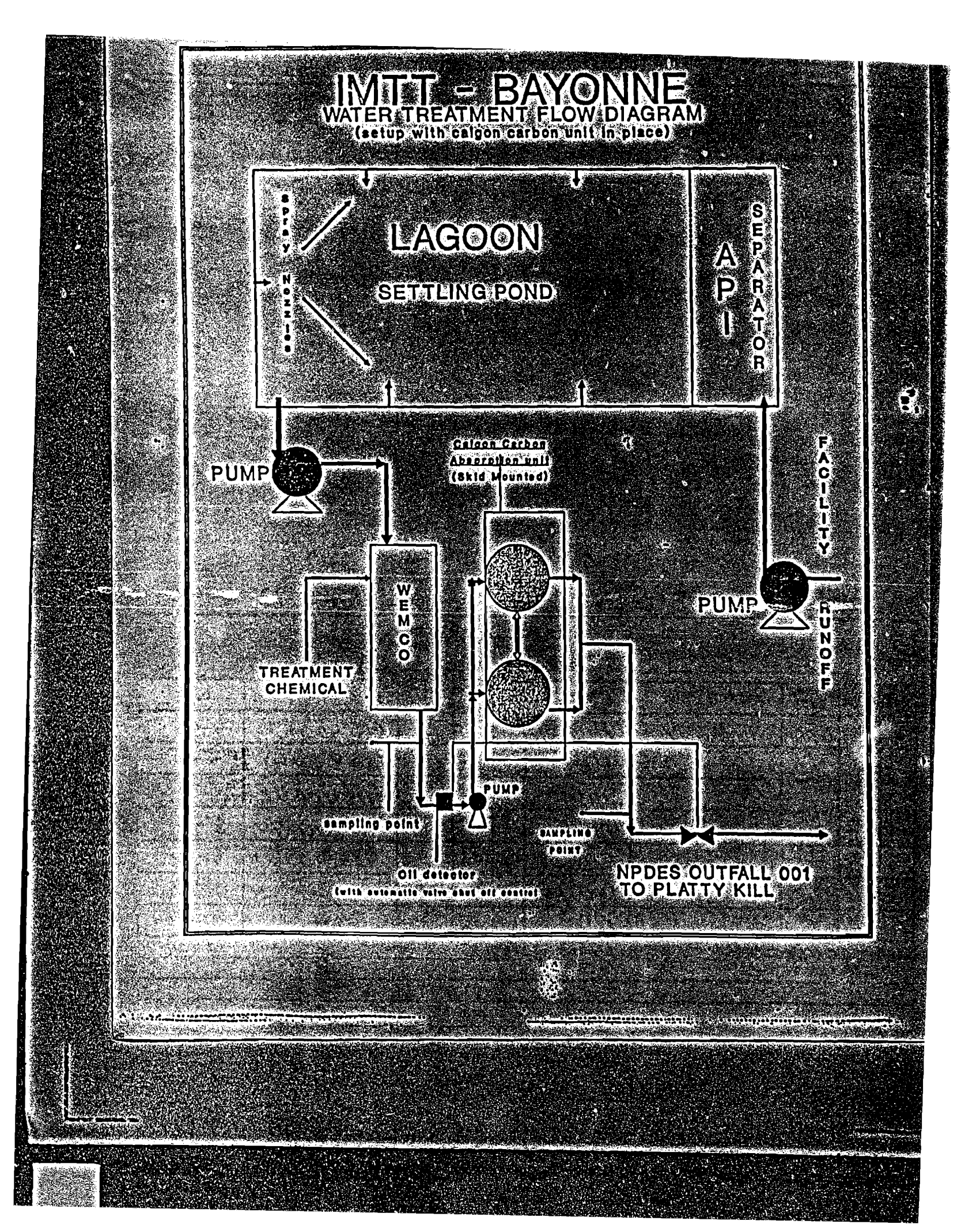
FACILITY SAMPLED APRIL 23, 1991

DISCHARGE DATA

SOURCE: _____ PERIOD: 4/1/90 — 3/31/91

DIS	PARA	SAMPLE TYPE	PERMIT LIMITS	DATA			LIMIT TYPE	DMR #	DATE
001	(OD)	GRAB	100 mg/L	490 mg/l			Max.	900400 52	4-90
"	"	"	"	110			"	900500 40	5-90
"	"	"	"	210			"	900700 48	7-90
"	"	"	"	140			"	900800 44	8-90
"	"	"	"	120			"	900900 51	9-90
"	"	"	"	180			"	—	10-90
"	"	"	"	120			"	—	11-90
"	"	"	"	170			"	—	12-90

MONITORING DEFICIENCIES: See Above.


IMTT - BAYONNE
WATER TREATMENT FLOW DIAGRAM
(setup with calgon carbon unit in place)
LAGOON
SETTLING POND
SPRAY NOZZLES
API SEPARATOR
FACILITY RUNOFF
PUMP
Calgon Carbon Absorption Unit (Skid Mounted)
WEMCO
TREATMENT CHEMICAL
PUMP
PUMP
sampling point
SAMPLING POINT
oil detector
(with automatic valve shut off control)
NPDES OUTFALL 001
TO PLATTY KILL

NJPDES DGW PERMIT
NOTIFICATION GUIDELINE SHEET

*Any time that a facility fails to achieve ground water quality standards and/or other permit limitations, the permittee is required, pursuant to N.J.A.C. 7:14A-2.5(a)14 and the permit, to provide oral and written notification addressing these items to the Department within specified time frames from the time the permittee becomes aware of the circumstance.

The Ground Water Exceedance Notification Report is to contain the following information:

*A) A description of the discharge;

*B) The steps being taken to determine the cause of the noncompliance;

NOTE: This shall include the steps being taken to confirm the validity of the data, and the basis used to determine whether the exceedance is due to the discharge or is due to background or off-site conditions;

*C) The steps being taken to reduce and eliminate the noncomplying discharge;

*D) The period of noncompliance, including the exact dates and times. If the noncompliance has not been corrected, the anticipated time when the discharge will be in compliance;

*E) The cause of the noncompliance;

*F) The steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance; and

G) Indicate whether the discharge has impacted or threatens to impact ground water off-site, including identification of all surface water and ground water supplies (wells) in the immediate (i.e. one-half mile radius) vicinity.

THE REPORT SHALL BE SUBMITTED TO THE GROUND WATER PERMITTING BUREAU SPECIFIED BELOW:

X	Bureau of Ground Water Discharge Control	(609) 292-0424
	Bureau of Aquifer Protection	(609) 633-1241
	Bureau of Municipal Discharge Control	(609) 633-3869
	Bureau of Ground Water Pollution Abatement	(609) 292-8427
	Bureau of Industrial Discharge Permits	(609) 292-4860

Division of Water Resources
CN 029
Trenton, NJ 08625

Upon receipt of the information requested above, a determination will be made for the need of a ground water quality assessment program pursuant to N.J.A.C. 7:14A-6.1. FAILURE TO PROVIDE THIS INFORMATION MAY RESULT IN ENFORCEMENT ACTION INCLUDING THE ASSESSMENT OF PENALTIES!

Form DSW-003
3/81

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029, Trenton, N.J. 08625

DISCHARGE SURVEILLANCE REPORT

PERMIT # NJ0001341 NO. OF DISCHARGES 1 CLASS MIN-IND

DISCHARGER IMTT - BAYONNE

OWNER BAYONNE INDUSTRIES, INC. NEW ORLEANS, LA

MUNICIPALITY BAYONNE COUNTY HUDSON WATERSHED CODE I

LOCATION FOOT OF EAST 22ND STREET

RECEIVING WATERS PLATY KIL CREEK STREAM CLASS SE-3

LICENSED OPERATOR & PLANT CL[illegible] JOSEPH SAMMARCO, N-1

TRAINEE/ASSISTANT — OTHER INFO. (201) 437-2200

DEFICIENCIES OR COMMENTS SEE LETTER ATTACHED

DISCHARGE TO SURFACE WATER RATING

OVERALL RATING ☐ Acceptable ☐ Conditionally Acceptable ☒ Unacceptable

EVALUATOR THEOPHILUS ASHIE TITLE ENVIRONMENTAL SPECIALIST

INFORMATION FURNISHED BY (Name) CHERYL JOHNSON, DENNIS BARBARISE

(Title) TERMINAL MANAGER (Organization) IMTT - BAYONNE
MANAGER OF ADMINISTRATION

DATE OF INSPECTION APRIL 17, 1991

DWR-047
12/88

Let's protect our earth

NV 09-2907

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625

NOTICE OF VIOLATION

DATE 4/17/91

Metro
ENFORCEMENT ELEMENT
BUREAU OF REGIONAL ENFORCEMENT
TELEPHONE NO. (201) 669-2900

PCWS # _____ TYPE SUPPLY _____ NJPDES # NJ0000191 TYPE DISCH SW RCRA # _____
NAME OF FACILITY IMTT - BAYONNE
LOCATION OF FACILITY FOOT OF 22ND ST MUN. BAYONNE COUNTY HUDSON
FACILITY REPRESENTATIVE AND TITLE DENNIS M. BARBARICH MGR. OF ADMINISTRATION

You are hereby NOTIFIED that during an inspection of your facility on the above date, the following violations were noted and remedial actions are required:

DESCRIPTION OF VIOLATION/REMEDIAL ACTION: 1. There were 7 (01) permit violations (exceedance of permit limits) for the rating period 4/90 – 3/91.
2. Reconstruction of the Carbon Units was done without TWA Treatment Works Approval) from the Department

The above noted violations are in violation of the following N.J. Statutes/Regulation, and will be recorded as part of the permanent enforcement history of your facility:

- ☑ New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and appropriate Regulations.
- ☐ New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-1 et seq.) and appropriate Regulations.
- ☐ New Jersey Water Supply Management Act (N.J.S.A. 58:1A-1 et seq.) and appropriate Regulations.
- ☐ New Jersey Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.) and appropriate Regulations.
- ☐ New Jersey Underground Storage of Hazardous Substance Act (N.J.S.A. 58:10A-21 et seq.) and appropriate Regulations.

Remedial action to correct the violations must be initiated immediately. Within five (5) calendar days of receipt of this Notice of Violation, you shall telephone the investigator issuing this notice at the above number with the corrective measures you have initiated to attain compliance. The issuance of this document serves as notice to you that the Department has determined that a violation has occurred and does not preclude the State of New Jersey or any of its agencies, from initiation of further administrative or judicial enforcement action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are subject to penalties of up to $25,000 per day.

Further enforcement action, which will require a written response, may be issued on these violation(s) and any additional violations found during the inspection.

Violation received by Dennis M. Barbarich

Investigator, Division of Water Resources, DEP

White - Original Canary - Bureau File Pink - Criminal Justice Goldenrod - Central File

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DDA000007

DWR-047
12/88

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State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625

GEORGE G. McCANN, P.E.
DIRECTOR

NOTICE OF VIOLATION

DATE 6-12-90

METRO ENFORCEMENT ELEMENT
BUREAU OF REGIONAL ENFORCEMENT
TELEPHONE NO. (201) 669-3900

PCWS # _____ TYPE SUPPLY _____ NJPDES # 0001341 TYPE DISCH SW RCRA # _____
NAME OF FACILITY IMTT - Bayonne
LOCATION OF FACILITY Foot of East 22nd Street MUN BAYONNE COUNTY HUDSON
FACILITY REPRESENTATIVE AND TITLE WALTER PYTLIK PLANT MANAGER

You are hereby NOTIFIED that during an inspection of your facility on the above date, the following violations were noted and remedial actions are required:

DESCRIPTION OF VIOLATION/REMEDIAL ACTION: DMR violations, exceedance of parameters for the following reporting months: July 1989, August 1989, September 1989, December 1989, January 1990, February 1990, March 1990, April 1990. DMR [illegible] October 1989 not produced.

The above noted violations are in violation of the following N.J. Statutes/Regulation, and will be recorded as part of the permanent enforcement history of your facility:

- [x] New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and appropriate Regulations.
- [ ] New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-1 et seq.) and appropriate Regulations.
- [ ] New Jersey Water Supply Management Act (N.J.S.A. 58:1A-1 et seq.) and appropriate Regulations.
- [ ] New Jersey Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.) and appropriate Regulations.
- [ ] New Jersey Underground Storage of Hazardous Substance Act (N.J.S.A. 58:10A-21 et seq.) and appropriate Regulations.

Remedial action to correct the violations must be initiated immediately. Within five (5) calendar days of receipt of this Notice of Violation, you shall telephone the investigator issuing this notice at the above number with the corrective measures you have initiated to attain compliance. The issuance of this document serves as notice to you that the Department has determined that a violation has occurred and does not preclude the State of New Jersey or any of its agencies, from initiation of further administrative or judicial enforcement action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are subject to penalties of up to $25,000 per day.

Further enforcement action, which will require a written response, may be issued on these violation(s) and any additional violations found during the inspection.

[signature]
Investigator, Division of Water Resources, DEP

Violation received by [signature]

White - Original Canary - Bureau File Pink - Criminal Justice Goldenrod - Central File

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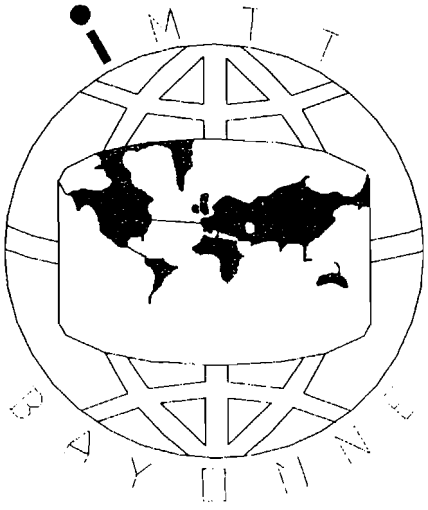
DDA000008

36003

Preliminary Assessment
Volume I
IMTT – West Side
Bayonne, NJ



BLUESTONE ENVIRONMENTAL SERVICES, L.L.C.

CSL Number: NJD064288855
MOA Dated 27 May 1992
July 2005

Prepared for:

IMTT BAYONNE

BAYONNE NEW JERSEY

DDA000010

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PRELIMINARY ASSESSMENT REPORT
VOLUME I
WEST SIDE OPERATIONS

1.0 INTRODUCTION

This is Volume I of a five volume report that has been prepared for the International Matex Tank Terminal (IMTT) bulk storage and distribution facilities located on the east side of Bayonne, Hudson County, New Jersey in an area often referred to as Constable Hook (**Figure 1**). Volume I presents the findings of a Preliminary Assessment, specifically for the IMTT-West Side operations. This Preliminary Assessment was conducted in accordance with the NJDEP's Technical Requirements for Site Remediation (TRSR; N.J.A.C. 7:26E). The Preliminary Assessment was conducted in conjunction with on-going investigation and remedial activities at the Site that were conducted by IMTT. Since 1992, these activities have been overseen by the NJDEP under a Memorandum of Agreement (MOA).

IMTT is a private, onshore, bulk liquids storage and distribution facility engaged in the receipt, storage, and distribution of chemicals and refined petroleum products. The terminal's operations encompass product loading and receipt via marine vessels (tank ships and barges), tank trucks, rail tank cars and pipelines. IMTT is organized around four (4) distinct units; IMTT-Eastside, IMTT-Westside, IMTT-Chemical South and IMTT-Chemical North. The Westside of IMTT was purchased in 1983 and in its early history was the site of the former Tidewater refinery (dating back to the late 1870's). The Eastside of the facility was purchased in 1993 and is the former Standard Oil refinery dating back to the late 1890's and is not included in the PA. IMTT-Chemical North was acquired in August 1997 from Constable Terminal, Inc. IMTT-Chemical South was acquired in February 1997 from Powell Duffryn Terminals, Inc.

IMTT maintains 642 aboveground storage tanks ranging in capacity from 1,200 barrels to 250,000 barrels, with a cumulative storage capacity of 13.5 million barrels.

The West Side facility, situated at Constable Hook (Hudson County, NJ) is subdivided into six tank yards and four satellite yards including:

1. Chem South (Volume II),
2. Packards (Volume III),
3. Curries (Volume IV), and
4. Chemical North (Volume V).

The waterfront development along the Kill Van Kull includes six tanker berths and twelve barge berths. The docks accommodate barges and tank ships (up to 800 ft in length with a maximum draft of thirty-seven feet at mean low water). Rail service connection includes access to Conrail through the East Jersey Railroad Company short line operated under the same manager as IMTT-Bayonne. Product distribution is accomplished via numerous tank truck loading racks.

1.1 The Preliminary Assessment

The Preliminary Assessment described herein was initiated in March 2004. Pursuant to the requirements of the TRSR, this Preliminary Assessment focused on identifying potential areas of concern (AOCs) at the Site, including those previously identified for investigation and remediation. The Preliminary Assessment was based on diligent inquiry, evaluation of information concerning the site history, and on-site inspections. In the course of conducting the Preliminary Assessment, the following tasks were completed:

1. Review of historical aerial photographs, topographic maps, Sanborn maps, and facility plans.
2. Review of facility, NJDEP, and third party documents pertaining to former site operations and environmental activities.
3. Review of reports prepared for the environmental investigations and cleanup activities conducted at the Site.

4. Interviews with terminal environmental and operations personnel.
5. Site inspections to verify the findings of the investigations.

In addition to identifying the history of operations, ownership, and environmental activities at the subject properties, the Preliminary Assessment has identified the following AOCs at the West Side facility:

- Above ground storage tanks.
- An aboveground piping network.
- An underground piping network.
- Sixty-six product pump stations.
- Thirty-one loading and unloading areas.
- Twelve surface impoundment areas.
- Six dumpster/solid waste collection areas.
- Two surface water bodies.
- Fourteen septic tank locations.
- One open pipe discharge.
- Five former UST locations.
- Soil waste piles.
- Spills and releases of product.
- Historic fill operations.
- Eight occupied buildings.
- Twenty-four electrical transformers.
- Storm water sewer system.
- Wastewater treatment facility.

1.2 The West Side Site

The property that is the subject of this Preliminary Assessment is the IMTT-Bayonne West Side facility that is located 250 East 22nd Street in the city of Bayonne,

within the Hudson County of New Jersey. The West Side encompasses approximately 200 acres of property. According to the DPCC and a tax map created for the site, the West Side facility is designated into several blocks and lots (see **Figure 2**). The blocks and lots for the West Side are listed below:

Block	Lot
464.01	1, 3, 4, 5, 5.01, 5.02, 7, 8, 9, 10, 14, 16, 17
465	1, 2, 3, 4, 5, 6, 7, 9
470.01	1
476.01	1, A1, 2, 4, 5, 6, 7, 8
476.02	2
477.01	1, 1.01, 2
477.02	1, 2, 3

1.3 Previous Investigations

Previous investigations have been conducted at the West Side site. A summary is provided below.

1.3.1 Preliminary Assessment

IMTT, under its Memorandum of Agreement, submitted a Preliminary Assessment (PA) Report to the NJDEP on October 15, 1992. The NJDEP provided comments in January 1993. The NJDEP conditionally approved the PA pending incorporation of the NJDEP comments into a follow up Remedial Investigation (RI) Work Plan using a phased approach to address the deficiencies. The majority of the NJDEP's comments to the PA Report were directed toward site history prior to the current ownership's involvement with the site; the initiation of a soils investigation; and the identification of individual areas of concern.

In 1992, ENSR proposed a RI program that conceptually followed the framework of the Technical Rules.

1.3.2 Site Wide Phase I Remedial Investigation Results

The RI Work Plan was submitted in June 1994 and approved by the NJDEP in September 1994. A Phase I RI Report for the Site was submitted to the NJDEP in November 1996. Multiple impacted areas were identified during the investigation. In a response to the RI Report in a letter dated April 16, 1997, the NJDEP requested that IMTT prioritize efforts to identify sources, and delineate the extent of free and residual product at the site.

The RI Work Plan was designed to specifically address PA data gaps identified by the NJDEP, incorporate activities which were designed to characterize potential AOCs, further define the environmental setting, further define groundwater quality conditions, and determine migration pathways and potential impacts on human health and the environment. The collected data was used to identify interim remedial measures and to support the selection of a remedial action program for the site.

The proposed RI program was a multi-phased program that included an evaluation of the results of each successive phase in order to best focus and maximize the effectiveness of each successive phase. At that time, the RI was divided into three phases: (1) PA, (2) Phase 1 RI, and (3) Phase 2 RI. At the end of each phase of work, a draft summary report and draft scope of work for the next phase of the investigation was to be prepared and submitted to NJDEP, followed by a technical meeting with the NJDEP to discuss results of the completed phase and the scope of work for the next phase.

The RI Work Plan proposed potential AOCs at the site to be grouped into a modification of IMTTs' yard designations. Within each yard, potential AOCs would be identified and then further broken down into specific locations and, if possible, actual sources of contamination.

The Final Draft RI Work Plan was submitted to the NJDEP in May 1993. NJDEP provided comments to this Final Draft RI Work Plan in letters dated July 22, 1993 and March 30, 1994.

The Phase I RI was submitted in November 1996 and focused on further defining the environmental setting of the site, groundwater quality conditions, and determining migration pathways. Activities conducted included a tidal study; monthly liquid measurements in the monitoring wells across the site to determine groundwater flow direction and understand free-phase product residual areas; installation of additional shallow groundwater monitoring wells at identified AOCs; collection and analysis of groundwater and free-phase product samples; and installation of deep soil borings to bedrock to define the geology below the site.

A total of 108 soil samples were collected and analyzed from six test pits and 60 soil borings installed at the sixteen identified AOCs. Twelve additional shallow monitoring wells and four deep exploratory soil borings were also installed. Two rounds of groundwater sampling were conducted. The first round was conducted in June 1995, and included the collection of groundwater samples from 25 out of 40 monitoring wells that did not contain measurable amounts of free-phase product; the second round was conducted in November 1995 and included the collection of groundwater samples from 27 out of the 40 monitoring wells that did not contain measurable amounts of free-phase product. Free-phase product samples from seventeen monitoring wells were collected and analyzed, and product bail-down tests were also conducted on these monitoring wells.

In late April 1995, a discharge of oil was observed from the New Jersey Department of Transportation (NJDOT) Route 169 storm water sewer outfall pipe located on the IMTT west side waterfront between Pier 1 and Pier A. The discharged oil was immediately contained with booms and subsequently removed from along the bulkhead leaving only a minor, intermittent oil sheen in the vicinity of the outfall pipe. Following

this remedial action, the NJDOT initiated removal of oily water from the tidal chamber (located immediately upstream of the outfall pipe) to abate further emission of fugitive product. As an additional control measure, oily water was also removed from several manholes along the stormwater sewer line.

In early June 1995, while conducting RI activities associated with the IMTT MOA on the site, ENSR advanced four soil borings along the pipeline to investigate the possible presence of free-phase product in the vicinity of the Route 169 outfall pipe. No meaningful presence of free-phase product on the water table was identified in these soil borings. However, it was recommended that additional soil borings and monitoring wells be installed in the area to delineate further the potential presence of free-phase product and its extent.

On July 27, 1995, liquid level measurements from five existing monitoring wells located in the vicinity of the Route 169 storm sewer line were collected. Two monitoring wells, MW-24 and MW-9, displayed product accumulations in the range of 0.5 foot and 0.75 foot, respectively. The free-phase product observed in these monitoring wells appeared to contain gasoline. The observed product thickness and presence of gasoline in these wells was inconsistent with previous measurements and observations, and suggested the existence of a recent, unknown release of petroleum product to the subsurface. It was subsequently determined that the increased free-phase product accumulations were attributable to recent leakage from an underground gasoline pipeline.

In a response to the NJDEP dated December 18, 1997, IMTT agreed to focus on a site-wide free residual product priority. A product thickness summary map was designed to include apparent and true product thickness throughout the existing monitoring well network. Several phases of free product investigating were conducted at risk to select an approach to site wide delineation of free product.

In February 1998, a report on the finding of a cone penetrometer investigation at the West Side Waterfront (WWF) was submitted to the NJDEP. The NJDEP conditionally approved that report in an April 1998 conditional approval letter.

1.3.3 White Chemical Corporation

The White Chemical Corporation leased approximately 3.5 acres of the site in Yard 1 east of Tanks 1702, 1703, and 1704. The approximate boundaries of this site are shown on Figure 3. White Chemical operated at this site from approximately 1961 through 1983 in a facility that included a diked bulk storage area, a trailer office, a brick process building, and an open yard for traffic and material storage.

The company is reported to have been involved in the manufacture of a number of chemicals including among others, various halogenated hydrocarbon compounds. White Chemical reportedly manufactured chemicals including, but not necessarily limited to, acid chlorides, alko bromides, brominated flame-retardants and various specialty compounds. At this IMTT site White Chemical also manufactured polybrominated biphenyls including deca- and octobromo-biphenyls.

Waste products, which may have been generated during these operations would include hydrochloric acid, distillation bottoms, filter aids, organic sludge, solvents and wastewaters. Details on how these were disposed of are not available but photographic evidence exists of their accumulation in drums, which were subsequently hauled offsite. There are indications that in about 1980, a number of 7,500-gallon aboveground fiberglass storage tanks were put in place at the site to handle saleable by-products and wastewaters prior to suitable off-site disposal.

Following a report of some spills at the site by White Chemical to the NJDEP, an ACO was issued to White Chemical by the NJDEP to determine the extent of site contamination and the confection of an appropriate remedial action plan.

On July 22, 1981, soil samples were taken at various locations throughout the site. Analyses of these samples revealed that benzene, 2-chloronaphthalene, nitrobenzene, phenols, and toluene are present at the site. These substances are classified as hazardous substances pursuant to N.J.A.C. 7:26-8.16.

On June 7, 1983, the NJDEP conducted soil sampling at the site to determine the presence of 2-3-7-8 T2DD. Analyses of the samples were hindered by the background presence of other chemical contaminants. Further analyses of the samples were attempted to determine the nature and extent of the interference compounds. Inspections of the site conducted by the NJDEP had revealed the presence of material spills at various locations within the site.

In 1983, White Chemical had moved its operations to Newark, New Jersey and all drums, wastes, tanks, process equipment, and other materials were removed from the site. IMTT brought legal action against White Chemical and the former owners to seek completion of the ACO responsibilities, but bankruptcy was granted to White Chemical.

In a letter dated March 30, 1993, the NJDEP advised Bayonne Industries that White Chemical could no longer fulfill its obligations to perform the remedial activities required under an ACO entered into between the State and White Chemical and that the NJDEP would therefore look to IMTT to satisfy the requirements of the ACO.

1.3.4 Rona Pearl Site

Rona Pearl, a division of EM Industries, Inc. began operations in the early 1970's as a leaseholder at the IMTT site. The former location of the Rona Pearl lease is shown on Figure 3. Rona Pearl leased this area of the West Side of IMTT property where they manufactured nacreous (luminescent) pigments for the cosmetics industry through an interim ownership by Whitaker Corporation prior to their acquisition by EM who returned to the use of the Rona name. Rona's entire site was paved and all discharges

converged to a 5,000-gallon holding tank, which was part of their NJPDES permitted treatment train.

Water was used in their manufacturing process which generated wastewater containing suspended solids having a pH different from that of the water supply and containing bismuth, a metal. On August 9, 1985, the NJDEP issued Rona a NJPDES permit, limiting the wastewater discharge into surface waters.

Rona's wastewater passed through a treatment process including two tanks. There certain solids settled out prior to discharge through an outfall pipe into surface water known as the Platty Kill Creek

On October 5, 1987, representatives of the NJDEP conducted an inspection of the Rona Pearl facility in response to a citizen complaint. The inspection revealed that approximately 3,000 gallons of untreated process water, a pollutant as defined by N.J.A.C. 7:14-1.9, was discharged to the Platty Kill Creek, tributary to the Kill Van Kull, via an outfall pipe designated as discharge 001 in NJPDES permit NJ0030449. The NJDEP found that Rona had neglected to take action to avoid the discharge of untreated wastewater during a shutoff of electrical power and wastewater was discharged into the creek, in violation of the NPDES permit.

On June 19, 1996, the NJDEP issued a Negative Declaration for the Rona Pearl site. Rona Pearl terminated its lease under ISRA oversight on July 31, 1996 (Case No. 94100).

1.3.5 Southern California Chemical Site

Background records indicate that Southern California Chemical Company leased a site in Yard 10 from IMTT for approximately 8 to 10 years during the period 1972 to 1981. Their activities appear to have been associated with the recycle recovery of copper from old electronic parts in a building identified in the 1948 Tidewater site plan as the

"Plate Shop" building. This building was demolished when Yard 10 was leased to Co-Gen Technologies in 1985 and is presently covered by concrete underlying Co-Gen's main building, cooling towers, a storage shed and two bulk storage fuel oil tanks.

The EPA, after a review of the available information for the Environmental Priorities Initiative – "Preliminary Assessment (EPI-PA) Report, Southern California Chemical Company Facility", made a recommendation for No Further Action. The address for the Southern California Chemical Company, (EPA ID No. NJD062041108) was listed as the foot of East 22nd Street, Bayonne, Hudson County, New Jersey. The EPI-PA findings are summarized below:

- On August 5, 1980, Southern California Chemical Company submitted a Notification of Hazardous Waste Activity, Form 8700-12 to the U.S. Environmental Protection Agency (EPA) as a hazardous waste generator of commercial chemical products, as a treatment, storage and disposal (TSD) facility, and as a hazardous waste transporter.

- On June 24, 1981, the EPA conducted an inspection of Southern California Chemical Co. facility. The inspection resulted from an NJDEP inspection report indicating that the facility was planning to terminate operations. The EPA inspection reported most of the process equipment had been removed, storage tanks were being cleaned, disassembled and removed to an out of state facility, and that no problems or violations were apparent.

- On May 19, 1982, a facility inspection of Southern California Chemical was conducted by NJDEP. At the time of the inspection, Southern California Chemical had suspended operations at the site. An on-site reconnaissance was conducted at the former Southern California Chemical location on March 26, 1992. During the inspection it was noted that the

site was covered in its entirety with a concrete pad. A cogeneration facility processing steam and electricity is now occupying the site.

- All Southern California Chemical facilities have been removed and no violations or documented releases to the environment were noted in the available background information for the facility.

1.3.6 Platty Kill Pond

Closure of the Platty Kill Pond began in November 1979 when IMTT submitted a report to NJDEP, Division of Water Resources entitled "Evaluation of Control Alternatives for the Separator Pond," prepared by Roy F. Weston consultants. This report recommended in-situ fixation and encapsulation as a remedial alternative for the PKP. In February 1981, the NJDEP, Division of Coastal Resources approved the closure plan and issued a permit to perform the work. The Army Corps of Engineers also processed a permit application and were willing to issue a permit pending prior approval of the closure plan by NJDEP, Bureau of Hazardous Waste Engineering. Coordination of a plan between the NJDEP, IMTT and Weston continued into 1983.

In late 1983, an evaluation of alternatives to the Weston recommended pond closure was conducted. In a letter dated December 4, 1987, IMTT provided the NJDEP, Division of Water Resources with a revised alternative for closure of the separator pond. This revised alternative proposed to sever the hydraulic connection between the pond and the canal and remove the sludge. The sludge was to be land-farmed with bio-augmentation on a 2-acre plot within the facility boundaries. The resulting study to confirm the integrity of the dam determined that a slurry wall was not necessary because the pond level was not significantly affected by changes in the canal level. These results were originally submitted to NJDEP in July 1989.

On August 18, 1988, the NJDEP, Division of Coastal Resources approved a Waterfront Development Permit for IMTT to change the discharge location of effluent

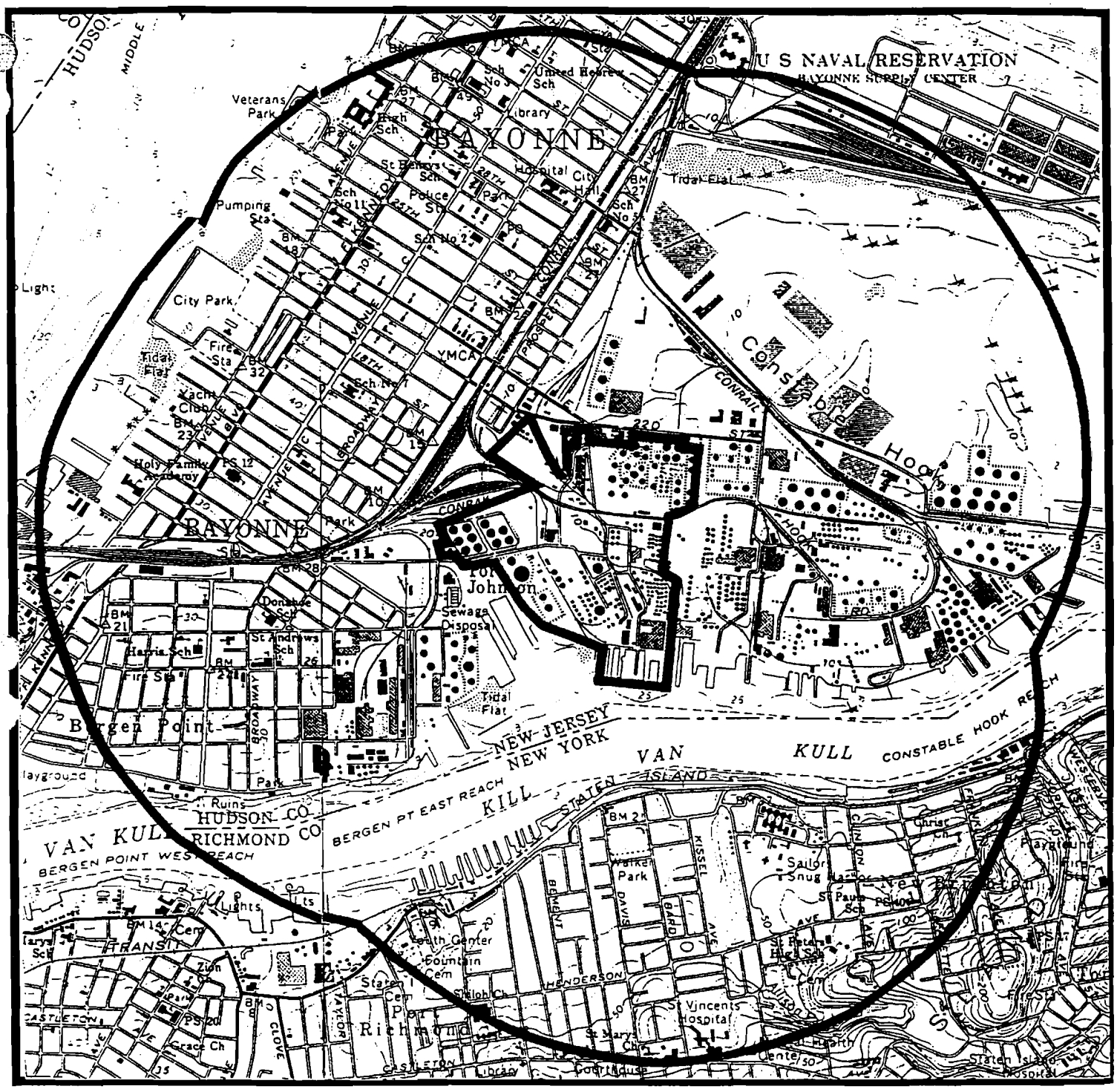

Figure 1, West Side Site Location Plan/
1-Mile Vicinity Map
Bayonne, Hudson County, NJ, Jersey City
Scale: 1"=2000'

BLUESTONE
ENVIRONMENTAL SERVICES, L.L.C.

from the Pond to the Platty Kill Canal. This allowed for the unobstructed reclamation of the sludge. The work was conducted under the supervision of the NJDEP, Division of Hazardous Waste Management's Metro Bureau of Field Operations and the NJDEP, Division of Water Resources Metro Bureau of Regional Enforcement. One of the conditions of the permit was that the sludge contained in the pond would be treated in an area and manner to be subsequently approved by the NJDEP, Division of Hazardous Waste Management.

Following receipt of the Waterfront Development Permit, IMTT submitted a letter dated September 15, 1988, to the NJDEP, Division of Hazardous Waste Management, Bureau of Hazardous Waste Engineering, outlining in-situ bioremediation of the sludge in the pond. The letter also explained the proposed approach to investigating the integrity of the existing earthen dike between the pond and the canal. Upon completion of the bioremediation, a decision would then be made as to the ultimate disposal of the treated material. It was anticipated that IMTT would be allowed to leave the treated material in place, and the pond filled with clean fill. In a letter dated January 17, 1990, the NJDEP, Division of Water Resources conditionally approved IMTT's' proposed plan for the Platty Kill Pond.

In 1989, a treatability study of the sludge in the pond was conducted to determine the feasibility of bioremediation as a remedial action for the pond. Results from the study indicated that bioremediation of the pond sludge was a feasible alternative to excavation and incineration. Analytical results of the sludge at the completion of the study indicated that volatile and semi-volatile compounds detected in the sludge prior to initiation of the test were not detected at the end of the test period. Results also indicated that metal concentrations generally increased, as expected, in proportion to the reduction in sludge volume. The TPH content of the sludge was reduced approximately 43% in the time frame of the treatability study. The ultimate reduction in TPH was expected to be dependent on the chemical nature of the remaining hydrocarbons. IMTT began active bioremediation of the sludge in the pond in the late summer of 1990.

IMTT provided the NJDEP with annual operating season reports, which summarized the remediation activities for each year and presented analytical results. The basic technology of the bioremediation relied on the native microbial population to degrade hydrocarbons in the sludge. The sludge was aerated and physically mixed to maximize the degradation rate. The technology was refined during the life of the project and ended up consisting of oxygen injectors and sludge shearing pumps. Performance studies indicated that the microbial population was phosphate limited and an attempt to augment the bioremediation with fertilizer turned out to be the refinement that interrupted the project and led to a re-assessment. The NJDEP requirement for a discharge (of fertilizer) to groundwater permit, coupled with a refusal to consider the permit application until a formal closure plan was submitted, triggered a reassessment given uncertainties about the bacterial activity on heavy asphaltous contributors to TPH.

The bioremediation activities were also hindered by equipment failure and delays due to other protracted permit application reviews. The first season of operation began in October 1990 and ended in November 1990. The next season ran from April 1991 to November 1991. There was effectively no operation in 1993 due to the NJDEP request for an air permit for the system operation. A condition of the permit was for IMTT to conduct an air emissions study, which was performed in April 1994. The air study concluded that real-time emissions from the pond were well below regulatory levels of concern. The report on this study was included in the air permit application, which was approved in August 1994. The bioremediation system operated a total of 78 days in 1994. Samples taken in April 1994 and again in December 1994 indicate that a TPH reduction of 64% may have been achieved in this abbreviated season.

Since it was clear that the bioremediation would not reduce total metals content and some sort of demonstrable fixation would be required, the project was refocused in 1998 to that essential element (fixation) for closure.

In April of 1997 a Remedial Action (RA) Work Plan for the closure of the Platty Kill Pond utilizing fixation methodology was submitted. This report:

- Provided an overview of the bioremediation process, including a summary of the treatability study conducted in 1989, and an evaluation of the effectiveness of the process from its initiation in 1990 to that present;
- Outlined the cleanup goals of the bioremediation process;
- Outlined the hydrogeologic investigation to be conducted to understand the pond's interface with the surrounding environment;
- Presented a remedial plan for final closure and monitoring of the pond, which stated that the preferred alternative for closure was to leave the residual bio-remediated sludge/sediment in place and backfill the pond to grade using gravel and two feet of soil cover.

In a letter dated September 24, 1998, the NJDEP, Bureau of State Case Management, informed IMTT that the RA Work Plan was unacceptable as it did not comply with the TRSR and failed to correct deficiencies identified in other NJDEP correspondence.

In response to the NJDEP Comment Letter dated September 24, 1998, a document entitled RA Selection Report (RASR) for the Platty Kill Pond dated December 1999 was submitted to the NJDEP by IMTT. It proposed stabilization of the pond material, backfill and monitoring. In a letter dated July 12, 2000, the NJDEP, Bureau of Case Management, informed IMTT the RA Selection Report was conditionally approved.

As part of the RA Selection Report development, IMTT evaluated alternatives for stabilizing the residual sludge. Stabilization was targeted for binding the residual metals concentrations and reducing the resulting sludge permeability to a degree that groundwater intrusion and subsequent extraction of residual organic contamination was minimized. IMTT established as performance goals the stabilization of all metals to meet established TCLP VOA and metal standards and a hydraulic permeability of no more than 1 X 10^{-6} cm/sec. The permeability requirement was set to address any residual hydrocarbon contamination.

- Analysis of the pond sediments (sampled according to the TRSR effective at the time) had been performed following the 1995 operating season and presented to NJDEP in the 1995 Operating Season Report.

- In September of 1998, IMTT contracted ARCADIS to perform a bench-scale feasibility study on the Platty Kill Pond sediments to verify that stabilization and solidification would meet regulatory requirements for pond closure. The study was performed on a composite sample of sediments comprising six vibracore borings taken in October 1998. A TCLP analysis was performed on one of the samples. The TCLP results provided non-detect or very low values for all parameters measured. The positive results from this screening study provided the confidence to proceed to the testing and optimization phase of the study.

- The purpose of the testing and optimization phase was to identify reagent recipes that would provide a cost effective remedy while maintaining the fixation goals of the project. Five admixture recipes were selected for the confirmation phase of the study. The confirmation phase involved permeability analysis, TPH measurement and TCLP testing. The TPH was a "total" analysis and was performed to provide data on the ultimate composition of the stabilized matrix. The permeability analysis was performed to assess whether a given admixture recipe could meet IMTT' project goal of a permeability no more than 1.0×10^{-6} cm/sec.

On the basis of the ARCADIS feasibility study results, IMTT proceeded to solicit bids for the stabilization work from various environmental contractors.

NJDEP's conditional approval of the RA Selection Report clarified that a permeability of 1×10^{-7} was the state guideline. It has been demonstrated that this could be achieved by the stabilization IMTT proposed (see Section 5.0). However, to ensure that 1×10^{-7} cm/sec permeability was achieved, the company amended the RA Selection Report after the conditional approval to include a slurry wall or sheet steel piling barrier

around the pond would guarantee the appropriate permeability. Based on this, NJDEP approval a minimal acceptable permeability of 1×10^{-5} for the stabilized sludge inside the containment. Based on data, a permeability of 1×10^{-6} was actually expected and was the design objective.

In December 2000, IMTT submitted a subsequent RA Work Plan to the NJDEP for approval. The December 2000 RA Work Plan outlined a proposal for remediation of the Platty Kill Pond, which included the following:

- A Water Management Program
- Final Cap Design
- Containment/ Barrier Wall Installation
- Material Stabilization

Following review and discussions held during a February 15, 2001 meeting between IMTT and the NJDEP, conditional approval of the RA Work Plan was issued. Specifics of the conditional approval including NJDEP comments are identified in the NJDEP letter dated May 18, 2001.

Conditional approval of the December 2001 RAWP prompted the issuance of a RA Work Plan addendum in January of 2004. The January 2004 RA Work Plan addendum addresses the NJDEP's Conditions/Responses/Clarifications outlined in the NJDEP correspondence of May 18, 2001, March 7, 2002 and September 13, 2002.

On March 31, 2004, the NJDEP issued conditional approval to the January 2004 RA Work Plan addendum.

IMTT responded to the approval conditions in a letter to the NJDEP, dated April 14, 2004. IMTT commenced remediation activity at the Platty Kill Pond in May of 2004 in accordance to the RA Work Plan, RA Work Plan Addendum and in conformance of conditions outlined in the IMTT letter response to conditions of April 2004.

1.3.7 Platty Kill Canal

In the summer of 1993, the U.S. Coast Guard directed that free-phase product seepage control measures be implemented at the mouth of the Platty Kill Canal (at the Kill Van Kull) when sheens were observed in the Kill. IMTT, unsure of the specific circumstances, undertook some interim remedial actions (IRA) as outlined in an April 1994 IRA Work Plan approved by the NJDEP. The IRA included the reconstruction of a portion of the bulkhead, a Phase I investigation to characterize sediments in the Platty Kill Canal, the installation of a subsurface free-product retainage curtain and free oil recovery systems along the Kill Van Kull, and the installation of an Air-Guard™ containment system to prevent migration of free-product sheen into the Kill Van Kull main stream from IMTT waters. The objective of the work was to control, as much as possible, petroleum seepage into the Platty Kill Canal and Kill Van Kull waterways outboard of the existing sheetpile dam.

1.3.7.1 Bulkhead Reconstruction and Curtain Wall Barrier

IMTTs' engineering staff prepared a design for reconstruction of a portion of the Platty Kill Creek Bulkhead and construction of a free-phase product curtain to reduce the potential for the migration of free-phase product to the Platty Kill Creek and the Kill Van Kull.

This bulkhead, installed in November 1994 by Eastchester Towing Inc. as a barrier, consists of a series of 35-foot long interlocking metal sheetpiles that begin at the existing sheetpile dam and extend approximately 237 feet southward along the creek bank toward the Kill Van Kull. The sheet piles were installed at a distance of approximately 2.5 feet outward from the existing bulkhead. The new sheetpile bulkhead was held in place in a configuration using existing tie-rods extended to connect into the new sheetpile wall. The space between the existing bulkhead and the new sheetpile bulkhead was filled with a certified, clean, clay-based fill that serves a dual purpose as a

structural support for the new bulkhead from water-side pressures and an impervious barrier between the Platty Kill Creek and landside free-phase product accumulations.

A free-phase product barrier curtain consists of a series of 4-foot wide by 8-foot long interlocking metal sheetpiles installed perpendicular to the reconstructed bulkhead. The bottom of each sheetpile was driven to a depth of approximately 10 feet below ground surface, leaving an approximate four to five foot gap between the bottom of the sheetpile and the meadow mat clay/silt unit. This is designed to trap free-phase product at the curtain for recovery, but allow ground water to continue to flow towards the Kill Van Kull to avoid flooding behind the wall.

1.3.7.2 Pier 4 Interim Remedial Measure

Interim free-phase product recovery was implemented when free-phase floating product was observed in varying amounts in three groundwater monitoring wells (MW-5, MW-15 and MW-20) located on the southeastern portion of the site, adjacent to the Platty Kill Canal. Passive skimmers installed into three existing 4-inch diameter monitoring wells adjacent to and in the vicinity of the Platty Kill Canal. These skimmers were used to initiate passive free-phase product recovery in southeast corner of the site. Three recovery wells were then installed (Y2-PKB-RW-1, Y2-PKB-RW-2 and Y2-PKB-RW-3) and passive skimming recovery was modified to include RW-1, RW-2, MW-5 and MW-20. Liquid level measurements in these wells indicated free-phase product accumulations in each, and provide a broad well network located within the area of a suspected free-phase product plume. Most recently, free-phase product recovery on the upgradient side of the product curtain is being done using recovery wells and skimming devices.

1.3.7.3 Sediment Investigations

In the fall of 1994, ENSR conducted a sediment investigation of the Platty Kill Canal as part of the Platty Kill Creek Interim RA. That investigation included the collection and analysis of sediment samples from sixteen locations. The locations

included eight outside of the sheet pile dam toward the Kill Van Kull; four inside of the sheet pile dam between the dam and the pipe bridge; and four locations north of the pipe bridge toward the Platty Kill Pond. Those results were reported to the NJDEP in November 1995, in the report entitled Platty Kill Pond Interim RA Report Vols. 1 and 2.

Several studies have been performed, or are currently underway, in determining the nature of the contamination potential of the Canal. A Platty Kill Canal Interim RA Report (1995), and Phase I and Phase II RI Reports (1996 and 1998) that included a comparison with NJDEP published soil standards and sediment criteria have already been filed with the NJDEP. The Phase II RI Report identified specific sediment areas that failed to meet expected standards or criteria. The reports included a characterization of the contamination and provide data to estimate the extent of the contaminated sediment.

In March 1998, IMTT submitted a Platty Kill Canal Phase II Sediment Investigation Report to the NJDEP. The report provided a delineation of the impacted sediments in the canal inside of the sheet pile dam. The NJDEP in a letter dated June 16, 1998 approved the report. In December of 1999, the NJDEP requested that a joint RA Selection Report be developed by IMTT and ExxonMobil to develop the Platty Kill Canal impacts. The RA Selection Report was completed and submitted to the NJDEP on February 18, 2000. The NJDEP conditionally approved the RA Selection Report on July 13, 2000. On April 11, 2000 a "hot spot" definition of the most impacted sediments in the Platty Kill Canal was finalized and submitted.

Additional engineering requirements and data gaps leading to a RA Work Plan Addendum were first addressed in a letter from IMTT to the NJDEP on August 31, 2000. The NJDEP responded to the RA Addendum in a letter dated March 14, 2003. At that time, the NJDEP requested a Pre-Design Investigation Work Plan be prepared for additional remedial investigation work in the Platty Kill Canal.

In April 2003, a Pre-Design Investigation Work Plan was submitted to the NJDEP. The Work Plan included responding to the NJDEP March 14, 2003 comments

and proposed additional drilling investigation over the canal waters from a barge where previously a gravely layer prevented the use of vibracore drilling methods.

An October 2004 report summarized the finding of the Pre-Design Investigation Work Plan conducted at the Platty Kill Canal. Twenty-four borings were attempted in the Platty Kill Canal using a floating platform and skid mounted-rotary drill rig. The investigation focused on the areas where the clay-till layer could not be reached during March 2000 and January 2001 vibracore boring program. Based on the findings of the completed borings, a clay layer was not found under the gravel areas in two southern locations in the Platty Kill Canal and a re-evaluation of the RA Selection for the southern portion of the Platty Kill Canal was deemed necessary.

Generally, the selected RA remains valid for the northern portion or "North Cell" portion of the Platty Kill Canal. At the time of this writing, work is ongoing to address that portion using methods similar to those used for the Platty Kill Pond closure.

1.3.8 West Side Waterfront

In late April 1995, a discharge of oil was observed from the NJDOT Route 169 storm water sewer outfall pipe located on the IMTT West Side waterfront between Pier 1 and Pier A in the Kill Van Kull. The discharged oil was immediately contained with booms and subsequently removed from along the bulkhead leaving only a minor, intermittent oil sheen in the vicinity of the outfall pipe. Following this RA, the NJDOT initiated removal of oily water from the tidal chamber (located immediately upstream of the outfall pipe) to abate further emission of fugitive product. As an additional control measure, oily water was also removed from several manholes along the stormwater sewer line.

In November 1995, IMTT developed a preliminary design and initiated the installation of a product recovery trench in the vicinity of the WWF. The installation of the interceptor trench was undertaken to initiate control of product seepage from along

the WWF bulkhead into the Kill Van Kull, and to recover gasoline product in the vicinity of active Piers 1 and A. Due to the emergency nature of the free gasoline risk, a detailed engineering study and formal design process were not undertaken before construction. IMTT provided the NJDEP MOA Case Manager with a preliminary recovery trench design in a letter dated October 23, 1995. The preliminary design was based on information resulting from the soil boring and monitoring well installations conducted in July, August and September 1995, and daily liquid measurements collected from monitoring wells in the vicinity of the WWF. Installation of the trench was completed on February 16, 1996.

An Interim RA provided for monitoring and extraction of free product from the interceptor trench sumps that were installed to control the migration of free phase product into the Kill Van Kull in this area. During a June 16, 1998 meeting in Trenton, IMTT volunteered to expand their reporting to include all site-wide product monitoring and recovery activities so as to re-establish regular progress reporting for the whole MOA site. Quarterly reports continue to be submitted to the NJDEP to this date.

1.3.9 Cone Penetrometer Survey

Handex of New Jersey was on-site from December 2 through December 7, 1998, and completed a successful cone penetrometer (CPT) pilot delineation program at the WWF area. The Report for the investigation was entitled "West Side Waterfront Interim Remedial Action Report" and was submitted to NJDEP on February 27, 1998. The report summarized site investigation activities and provided interpretation of the data obtained. The results of the CPT investigation were compared to soil boring logs for Y1-MW-42 through Y1-MW-43 to establish if soil types could be classified by CPT. The CPT descriptions were consistent with the soil boring data and it appears that the CPT assessment of the subsurface was accurate. The results were subsequently used to locate recovery wells at that location. Based on the results of this investigation, product recovery remedial actions were initiated and continue in the WWF area.

Success of this pilot project prompted additional CPT investigations at the Co-Gen Area and Old Yard 4 areas in accordance with the Free Product Investigation Work Plan (FPIW), conditionally approved by the NJDEP on June 10, 1999.

A CPT Survey was completed around the Co-Gen facility (Yard 10 Area), and Old Yard 4. The work was implemented based on a FPIW dated March 1999 that was conditionally approved by the NJDEP in correspondence to IMTT dated June 10, 1999.

Serious damage occurred to the equipment of each of the two CPT contractors that performed the on-site investigations during several CPT mobilizations. During its limited usage, the CPT proved to be a valuable tool in identifying the location and relative amount of free product at the facility. However, damage to the CPT equipment from unknown subsurface obstructions at the facility made continuing with the site-wide CPT free product investigation impractical. Further investigations have proceeded with more conventional borings and wells.

As previously reported to NJDEP in the IMTT 1998 Third Quarter Report dated December 2, 1998, two CPT investigations along the eastern part of the Co-Gen area were attempted, but due to subsurface obstructions were not successful. Geo-Probe™ borings were installed instead to delineate free product outside of the eastern boundary of the Co-Gen facility. Based on the results of the Geo-Probe™ investigation, IMTT installed two recovery wells and a pilot recovery system in this area. This system was found to be limited in its free oil recovery and additional wells were added as an enhancement of the system. The new wells were placed on-line in May 2005.

The Old Yard 4 investigation was completed by a different contractor, ConeTec Inc. (ConeTec) of West Berlin, New Jersey in July 2000. Sixty-two CPT sample points were installed in the Yard 4 area. Damage to the ConeTec CPT occurred at the 55th and 62nd (last) probing location. Interpretive mapping and the results of the 3-dimensional modeling of the ultra violet induced florescence (UVIF) data and CPT logs have been submitted to the NJDEP.

1.3.10 Tanks 5076-5077

Tank 5076 was demolished to allow for the construction of a new tank at the terminal. On January 6, 2003, RMPS installed soil borings to gain geotechnical information about the subsurface soils (type and structural integrity) at the location prior to the construction of the new product tank. Bluestone was on-site to supervise the installation of borings, screen the borings for environmental impacts, and "case off" the meadow mat clay if it was encountered, to safeguard any underlying aquifers.

The NJDEP was notified under the IMTT MOA and AOC-Y5-AST 5076/5077 was identified during the upgrade activities that involved the installation of an impermeable geosynthetic liner for the containment area and increasing the secondary containment for the Yard 5 area. Impacted soils were identified and approximately 5,000 cubic yards of soil were excavated. Post excavation soil sampling results indicate the presence of TPH above acceptable levels. In addition, free product was observed on the water-table.

In addition, the gray "meadow mat" clay found elsewhere at the site, which is an established "casing off" point, was not encountered. Either the borings were not advanced deep enough to encounter the "meadow mat" (the meadow mat is generally about 6 to 10 feet below the top of groundwater), or it is not present in this part of the facility.

As the purpose of the borings was to gain geotechnical information, no environmental samples were collected for analysis. However, photoionization detector (PID) readings and visual indicators of impact to the soils were recorded and are provide on the attached boring logs. PID readings and visual inspection of the samples from B1 did not exhibit evidence of petroleum impact.

Additional testing conducted before and during the tank reconstructions was collected and submitted to the NJDEP on July 23, 2003 under the site MOA. The Tanks and dike lining was subsequently completed at the location.

1.3.11 Old Yard 4 – Railroad Extension

Prior to initiation of construction in Yard 4, eight soil borings were installed within the area of the planned railroad siding installation to characterize the soils to determine worker health and safety protection.

On April 14, 2003, Bluestone installed soil borings and collected environmental soil samples for analysis in the area. A report was submitted to the NJDEP SRP in late April entitled " Revised Site Investigation Report, Bayonne Industries".

Soil samples were collected continuously from ground surface to 8 feet bgs or refusal at the eight boring locations. Samples collected were from the 0 to 4 foot and 4 to 8 foot intervals in all borings. Where refusal was encountered at depth, the boring location was moved slightly and another attempt was made to penetrate to eight feet bgs. The samples were visually inspected, classified, and screened with a PID by Bluestone. In all eight borings, soil samples were submitted for laboratory analysis for RCRA metals as well from the upper four feet of the boring, representing the top portion of the soil profile encountered in the first sample tube. Approximately 20 cubic yards of soil was removed associated with the construction of the planned railroad siding extension.

In all of the borings, the section of each sample interval that exhibited the highest PID reading was submitted for TPHC analysis. The interval that exhibited the highest PID reading for each boring was also submitted for laboratory analysis for VOCs+10 and semi-volatile organic compounds (SVOCs) with a fifteen compound library search (+15). All samples from the boring program were submitted to APL. VOCs +10 analysis was by USEPA Method 8260B, SVOCs +15 analysis was by USEPA Method 8270C, RCRA

metals by USEPA methodologies 6010B and 7471A for mercury, and TPHC by QAM-025.

The results of the laboratory analyses showed that five samples exhibited a concentration above the NJDEP SCC for total organic contaminants concentration of 10,000 mg/kg. Four of these samples also exceeded the NRDC SCC. The highest PID readings were below the top of the water table, and consequently the sampled intervals were also below the top of the water table. Due to the presence of free product found in the area, soil will remain under the siding at least until the free product is removed.

IMTT had revised a FPIWP and submitted it to the NJDEP in March 2004. The revised FPIWP proposed extensive fieldwork including monitoring well installation, soil sampling, and groundwater sampling be conducted in the three AOCs identified in this Revised SIR. This work plan has most recently been incorporated into a site wide Site Investigation for all IMTT properties. As such, further investigation of the AOCs identified in the Revised SI will be performed under the site-wide program.

1.4 Physical Setting

A Site Location Map (**Figure 1**) prepared from the U.S. Geological Survey 7.5 minute quadrangle map identifies the site location; local topography, surface drainage, and land use patterns. In reference to the map, the topography in the immediate site area is relatively flat, with a site elevation of approximately eight feet to nine feet above mean sea level. The surface water bodies closest to the site are the Kill Van Kull to the south, and New York Bay to the north and east.

1.5 Site Geology

The West Side facility is geologically located near the boundary between the Triassic Lowland and Manhattan Prong structural regions of the Piedmont Physiographic Province of New Jersey. The site is underlain by a stratigraphic sequence including

unconsolidated sands, silts, and clays of Recent and Pleistocene age, and consolidated and weathered bedrock of Triassic and Precambrian age (Eckenfelder, Inc., 1992). Within the general vicinity of the site, two distinct bedrock groups have been recognized: the Newark Supergroup of Triassic/Jurassic age, and the Manhattan Schist of Precambrian to Cambrian age (Lyttle and Epstein, 1987). The Manhattan Schist is a dark gray, micaceous schist or layered gneiss with subordinate metaquartzite, metagraywacke, and amphibolite (Lyttle and Epstein, 1987; Soren, 1988).

The contact between the Stockton and Lockatong Formations of the Newark Supergroup (Lyttle and Epstein, 1987) within the Newark Basin exists in the area of the IMTT site. The Stockton Formation generally consists of sandstone, mudstone, and siltstone. Overlying the Stockton Formation is the Lockatong Formation, which consists of finer-grained, more argillaceous mudstone and siltstone. Groundwater measurement within the bedrock likely occurs along faults, fractures, and bedding planes.

Overlying the bedrock in this area are unconsolidated glacial and post-glacial sediments. Glacial sediments likely consist of glacial till made up of varying materials and glacial outwash sediments. Overlying the glacial materials are post-glacial sediments that include recent sand, silt, and clay; some of this clay is commonly termed "meadow mat". The recent silt and clay are reportedly of marine origin deposited during the recessional period of the Wisconsin glaciation (Lueder, Obear, Holman, Rogers, 1952).

Fill materials used to reclaim the area for industrial use now overlie the meadow mat. An upper, often brackish water-bearing zone exists within the fill materials now underlain by the meadow mat.

2.0 SITE HISTORY

2.1 Site Ownership

The West Side property currently consists of one parcel of land, which is owned by Bayonne Industries. The table below summarizes past ownership.

Name of Property Owner	From	To
Bayonne Industries	1956	Present
Tidewater Oil Company	1870	1956

2.2 Site Operations

IMTT-Bayonne is the current operator of the facility. A summary of past operators is provided below.

Name of Operator	From	To
IMTT-Bayonne	1983	Present
Bayonne Industries	1956	1983
Tidewater Oil Company	1870	1956

IMTT-Bayonne operates the site as a bulk storage/transfer facility. As part of the operations at this facility, product is stored in aboveground storage tanks surrounded by dikes providing spill containment. The facility receives and distributes its product through above and below ground pipelines. IMTT-Bayonne does not own the product stored, but provides warehousing and transfer services.

In addition to the owners listed above, portions of the West Side facility have had other owners and/or operators in the past. The tables below list a summary of previous tenants on the West Side property.

Name of Property Operator	From	To
White Chemical (Yard 1)	1961	1983
Southern California Chemical Company (Yard 10)	1972	1981
Rona Pearl	Early 1970s	1996
Co-Generation Technologies	1985	2002
Enron	2002	2002
El Paso	2003	2003
New Market Energy (Yard 10)	2003	Present

The White Chemical Corporation leased approximately 3.5 acres in Yard 1, east of Tanks 1702, 1703, and 1704. The approximate boundaries of the site are shown on Figure 3. White Chemical operated the site from 1961 through 1983 in a facility that included a diked bulk storage area, a trailer office, a brick processing building, and an open yard for traffic and materials storage. The company is reported to have manufactured a number of chemicals including halogenated hydrocarbon compounds.

The NJDEP issued an ACO to White Chemical. A description of the activities associated with the ACO is described in Section 1.3 Previous Investigations of this report.

Background records indicate that Southern California Chemical Company leased a site in Yard 10 between 1972 and 1981. Their activities were associated with the recycle recovery of copper from old electronic parts in a building identified in the 1948 Tidewater site plan as the Plate Shop. This building was demolished when Yard 10 was leased to Co-Gen Technologies in 1985. The area is presently covered by concrete and underlying the Co-Gen main building, cooling towers, storage shed, and two bulk storage fuel oil tanks.

On June 24, 1981, the USEPA conducted a facilities inspection of the Southern California Chemical facility. A description of the activities associated with this inspection is provided in Section 1.3 Previous Investigations of this report.

Rona Pearl began operations in the early 1970's. They manufactured luminescent pigments for the cosmetic industry. They also operated under as the Whitaker Company for a short period of time. The site was located north of Yard 3 and is shown on Figure 3. Rona's entire site was paved and all discharges converged to a 5,000-gallon holding tank. Reagents stored at their facility included nitric acid, butyl acetate, methanol, ammonia, halogenated solvents, and non-halogenated solvents.

Rona Pearl terminated its lease agreement under ISRA oversight. The site received a Negative Declaration in 1996. A description of these activities associated with the ISRA case is provided in Section 1.3 Previous Investigations of this report.

New Market Energy (formerly Co-Gen Technologies) operates on a 10-acre parcel shown on Figure 3. Their operations drive electric generators off of high-pressure steam generated on-site. Low-pressure steam is then dispatched to a number of industrial operations in the Constable Hook area. A site assessment was done of the property prior to the initiation of construction and no further work is planned in this area.

Other tenants that have occupied the IMTT site since 1956 are listed below.

Tenant	**Operations**
Whitaker Company (Yard 8)	Manufacturing
Universal Air Freight	Service
Saybolt Testing Laboratories	Service
SCS Control Services	Service
Gerry Courain Electrician	Service
Nicaretta Construction Company	Service
Allied Vegetable Oils	Tallow and Vegetable Oils Storage
Theobald Industries	Tallow and Vegetable Oils Storage
Standard Tallow Corporation	Tallow and Vegetable Oils Storage
Capital City Products	Tallow and Vegetable Oils Storage

Industrial Fats	Tallow and Vegetable Oils Storage
Metropolitan Rendering Company	Tallow and Vegetable Oils Storage
Four Jays Distribution Corporation	Trucking and Warehousing
Cook Warehouse Enterprises	Trucking and Warehousing
Votainer Consolidation services	Trucking and Warehousing
Pittston (trucking division) and successor Ultramar	Trucking and Warehousing
Bayonne Freight Warehouse	Trucking and Warehousing
Coviello Transportation Company	Trucking and Warehousing
Mid-States Distribution Company	Trucking and Warehousing

Current tenants are provided in the following table.

COMPANY	**DESCRIPTION**
Star Snacks	Warehouse
EQ Industries Services, Inc.	Office /Warehouse
Bennett Testing, Inc.	Analytical Laboratory

2.3 Violations

An online file review was conducted on the NJDEP website for any violations or enforcement actions pertaining to the West Side facility, including all previous lease holders. All records found on the NJDEP's integrated database are limited to the time each program (i.e. air, hazardous waste, right-to-know, etc.) began using the system. The earliest available records were dated in October 1998. Violations pertaining to the IMTT-West Side facility are listed in **Table 1**.

The following is the roll of additional citations (stated in the 1992 Nelson report) received by the lead tenant IMTT's operations and/or those of landowner Bayonne Industry on which fines, mandates or formal hearings were involved (since the acquisition in 1983).

Earlier groundwater activity

Following the close-out of an inherited ACO engaged in by the prior owner in 1986, IMTT has implemented a two-phase construction of groundwater monitoring wells which indicate that the historic subsurface contamination does have definable plume centers (rather than being a broadcast problem). Pumping was conducted until the ACO was released. Ground water monitoring conducted over the last several years indicates that the earlier remediation was too narrow a scope.

Air emission permit irregularities in 1986

The NJDEP found that IMTT was storing products not considered permitted by taking too broad an interpretation of the product description given in the permit language. No potential contemporary impact for this irregularity was noted.

Water effluent exceedences in 1990

A sequence of unexplained exceedences of NJPDES water effluent parameters (COD) for an eight month period following a tank leak episode was found to be explained for the most part by the presence of salt water in our water treatment system which was recorded as a false positive. After this was discovered as a component of the State-approved protocol that was not observed in the relevant laboratory analyses, the State suspended the penalty assessment process pending further review of the data. No potential contemporary impact was noted. Before the false positive indication became known, the company moved to install tertiary carbon adsorption treatment in the system so the effluent is now maintained within permitted limits, typically with meaningful reserve.

Marine Vapor Recovery Compliance

IMTT entered into an Administrative Consent Order with the NJDEP when it became impossible to operate its marine vapor recovery facility under the Coast Guard approved detonation arrestors. In view of the fact the NJDEP was under a court order to enforce MVR irrespective of the Coast Guard proscription, the matter was resolved with the payment of penalties tied to the deferred costs while the Coast Guard identified detonation arrestors it would accept. This ACO was closed May 15, 1992, literally within hours of the Coast Guard device approval. No potential contemporary impact was noted for this compliance.

2.4 Current Surrounding Land Use

On February 23, 2005, a survey of the adjacent property operations was conducted of the area immediately adjacent to the West Side facility. The surrounding property use is marked on **Figure 4** and a description of the area is provided below.

Route 169 (now referred to as Route 440) and East 22nd Street border north side of the IMTT-West Side property. Kendrich Petrochemicals lies north of Yard 4, between the West Side and Route 440. East of Kendrich Petrochemical, located on East 22nd Street, is Bayonne Durable and then Manhattan Chocolate & Nuts. They are located in two separate buildings adjacent to the northwest corner of Yard 5. The eastside of the IMTT-West Side property is bordered by Exxon Mobil property and the Kill Van Kull Waterway borders the southern end of the site. The Bayonne Sewerage Pump Station and the Boat Yard and Marina are located to the west of the IMTT-West Side facility.

2.5 Sanborn Fire Insurance Maps

A review of available Sanborn Fire Insurance Maps was conducted for the West Side area. Maps for the following years were reviewed: 1898, 1912, 1950, 1979, 1988,

1991, January 1994, and December 1994. A summary of the observations made for each map year is provided below.

2.5.1 1898

The 1898 Sanborn map for the West Side location shows that the Tide Water Oil Co. and the Tide Water Pipe Co. Limited owned the property. There were five piers shown on the map, Piers 1 through 4 with a coal pier between Piers 2 and 3. Warehouse No. 1 (A) was located north of pier 1 and 3 tanks (either positioned on a platform or in a building) were identified on the northeast corner of the building. An isolated tank was located to the east of these tanks. Building K was used for storage and was positioned between Pier 2 and the Coal Pier. The land north of Pier 3 included Building B. This building was broken into different sections; it included a can shop, a tin can shop, a filling room and a packaging shed. The packaging shed portion of the building extended onto the northern half of Pier 3. Warehouse No. 2 (C) was identified north of pier 4 and extended to the west, onto the land between Piers 3 and 4. Fifteen tanks were located on the west side of Warehouse No. 2, in a straight line parallel to the building. There was a building, in which half was used for storage, located to the north of Warehouse No.2 (C) and to the east of Building B. A supply store was located to the northeast of Warehouse No. 2 (C), adjacent to railroad tracks and the west side of the Platty Kill Creek.

A branch of the Constable Hook Railroad traveled north to south through the property. The rail line broke into three more branches north of building B and the supply store and east of building B. On the other side of the three railroad branches, there were two buildings. The building northeast of the supply store, on the other side of the railroad tracks, was used for compounding and as an open shed. The other building, to the northwest, included a machine shop, a box maker, an engine room and a yard.

In the yard north of these two buildings, there were 31 tanks. Six tanks were positioned on the northeast side of the machine shop/box maker building and ten tanks (in two rows) were adjacent to the compounding building, on its northeast side. North and

northeast of the two buildings and dispersed throughout the tanks, there were ten unidentified structures. West of the tanks, on the east side of the railroad branch that ran north to south through the property, there was a building that was separated into a boiler house and a pump house. There was an office building located to the north of the boiler/pump house building. East of the boiler/pump house building, within the tank yard, there was also another pump house. Two more buildings were identified to the northeast of this pump, one of which was also labeled as a pump. On the land northeast of the tanks and southwest of the hook in the Platty Kill Creek, there were six crude stills and 5 condensers.

On the other side of the railroad track that ran north to south through the property, there were a total of 48 tanks. Six tanks that were in a building (or on a platform) were labeled as steam stills. Nine other tanks were enclosed, one building (or platform) with three tanks and another with six tanks. These nine tanks were utilized as bleachers and were located south of the steam still tanks. To the west of the bleachers, there was a clay building and another building to the north of that. The four tanks to the west of the clay building and the three tanks to the east were labeled as agitators. There were seven unidentified structures in this area of the property, west of the railroad branch.

The Martin Kalbfleisch Chemical Co. owned the land north/northeast of the Hook in the Platty Kill Creek in 1898. This property includes nine buildings. Three buildings are located on the northeast side of the property. One was used for glassware storage and another was an O.V. building. South of the three buildings was another building. Part of that building was utilized as storage shed. East of the O.V. building was an office building. To the west of these five buildings, there was another O.V. building. Continuing west, there were two condensers and a burning shed. It is unclear if this shed was still present or used at this time, due to the dotted outline used to depict the shed. South of the second O.V. building previously mentioned, there was another building that was used as an aluminum shop. The shop contained two burners and the southern part of the building had an ore shed and storage shed adjoining it. Two buildings were identified on the western boundary of the Martin Kalbfleisch property, one of which was labeled as

a glassware storehouse. Another branch of the Constable Hook Railroad traveled north to south adjacent to the east side of the western O.V. building and the aluminum shop. Four towers were identified on the property, one on the northeast corner of the aluminum shop and three more south of the western O.V. building. A tank was located on the north corner of the aluminum shop.

West of the Martin Kalbfleisch property and south of the Constable Hook Railroad was a continuation of the Tide Water Oil Co. & Tide Water Pipe Co. Limited property. There were 87 tanks in this area. Four of the tanks were located inside a building (or on a platform) and were labeled as bleachers. There was a boiler shop, a building for carpentry, boiler house (No.2), a building with tar stills, two more separate stills, an acid work building, and a building with filters and stills.

The main line to the Constable Hook Railroad ran east to west on the land north of the Martin Kalbfleisch property and the Tide Water property. Both the Tide Water property and the Martin Kalbfleisch property continued on the other side (north) of the railroad. There was a third O.V. building and a stable depicted on the Kalbfleisch property north of the railroad, adjacent to the west side of Old Hook Road and south of the cemetery.

The rest of the area to the west of the third O.V. building and stable and north of the Constable Hook Railroad was owned by the Tide Water enterprise. This area included 64 tanks. There were twenty buildings on this piece of property. The buildings included one office building, one building for storage of machinery, two stored tanks (two tanks per building), and one water tank. The rest were unidentified or had illegible labeling. East 22nd Street was located to the north of all these sites, and served as the northern boundary for the West Side.

2.5.2 1912

The West Side Sanborn map for 1912 depicts that the Martin Kalbfleisch property changed to the General Chemical Co. The glassware storehouse extended to become adjoined to the building north of it. Only one condenser was identified on the 1912 map. A new building was depicted next to the O.V. building and the stable north of the railroad and next to the Old Hook Road. The rest of this property was the same as the 1898 map.

The property to the west of General Chemical Co. was still occupied by the Tide Water Oil Co. and all the buildings and piers remained the same. Two tanks that were next to the clay building on the west side of the Tide Water property that were identified in the 1898 map, were no longer illustrated on the 1912 map. Also, there were 17 tanks that were depicted on the 1898 map that were no longer drawn on the 1912 map. They were located next to the Platty Kill Creek on the east side of the property. The features on the 1912 map were illustrated smaller, so structures may have been left out as a result of the larger scale of the map.

The tank configuration changed on the property north of the Constable Hook Railroad that was own by the Tide Water Oil Co. Nine new tanks were introduced to the area. There were six tanks in between the machinery storage building and the building to the west of it in the 1898 map that were no longer depicted in the 1912 map. Two buildings and 11 tanks that were grouped in the area north of the Constable Hook Railroad, on land that bordered the General Chemical Co. property, were also not illustrated on the 1912 map. Another eight tanks were missing by an office building, which were originally present on 1898 map.

Forty-two freestanding tanks were identified on the west side of the property, west of the railroad that runs through the center of the site. Additional tanks were identified that were positioned on pads or foundations. One tank pad contained six tanks and was in the shape of a T. Another pad, just north of the T-shaped pad, held three

tanks. A third pad, also containing six tanks, was located further north. Several blocky structures were also depicted in the area, but their identifications are unknown.

2.5.3 1950

The 1950 Sanborn map shows the West Side portion of IMTT-Bayonne when it was owned by the Tide Water Oil Co. Standard Oil Co. was located to the east of the T.W.O.C. property. There were four tanks associated with the Tide Water Oil Co. to the west of the land that is now considered the West Side.

The West Side had five piers, Pier 1, Pier 2, Coal Pier, Pier 3, and Pier 4 (west to east, respectively). The land onshore from the piers contained warehouses and railroad lines. North of Pier 1 was Warehouse A. Building K was located on the land between Pier 2 and the Coal Pier. Building B was between the Coal Pier and Pier 3 and housed a can factory, a part for storage and another section for filling the cans. The packaging shed portion of B extended down onto Pier 3. Warehouse C was located between Pier 3 and extended to the east onto the land north of Pier 4. Ten tanks were identified in a line inside the building on the west side and 13 more tanks were located outside the north side of the building. To the north of Warehouse C is Building E, which is used for storage. There was a railroad line and one tank identified south of Building E.

The Constable Hook Railroad still ran from west to east through the property, with several lines branching off of it to the north and south. Most of these branches that ran north to south originated off of another main line that traveled north to south through the property, separating it into east and west areas. The descriptions below have been divided according to the east and west sides of this north-south railroad line.

On the east side:

There was one rail line that ran parallel to Building K and then branched to the west and ran on the south side of Warehouse A. Another line ran parallel to Building K

and stopped before intersecting the Kill Van Kull waterway. Another line was identified to the north of Buildings B and C. This line turned and ran parallel to Building C on the east side of the building, where it split into two separate lines. These rail lines on the east side of Building C ran along the shores of the Platty Kill Creek. Two more branches ran north of Buildings B, C, and E.

There are two buildings located north of the railroad lines that ran north of Buildings B, C, and E. Building L was a machine shop/box shop and was located north of Building B. The other building was a compounding building and was labeled as Building D. A crane was identified west of the machine shop and another building was located north of the crane. A pump & power station/boiler House No. 4 was depicted to the northwest of Building L. East of the pump and power station was an electrician's building and to the east/northeast of the boiler house were two more buildings, one of which was a testing laboratory. A branch of the Constable Hook Railroad ran on the west side of the boiler house and stopped before the building transitioned into the pump and power station. There is an office building located north of the Boiler House No.4. Two steam stills were located east of the office. East of the boiler house/pump & power station, there was a tank yard with pump houses interspersed through out the yard. There was one pump house east of the boiler house/pump & power station and another next to the Platty Kill Creek. North of the latter pump house was a plant (type unspecified). Another building labeled Building S is located north of the office and there were four stills next to it. Continuing to the east, there were four more stills, which were positioned south of the hook of the Platty Kill Creek. North of Buildings L and D and east of the boiler house/pump and power station, there were 75 tanks in the tank yard. There was another tank (a water tank) positioned between Building L and the boiler house/pump & power station.

North of Building S was a settling pond, labeled as the "Black Sea", and two tanks to the west of it. There were three platforms that stored oil tanks north of the settling pond. The platform to the west had a pump house and nine tanks. The middle platform had thirteen tanks and the eastern platform had twelve tanks. To the north of the

western platform, there was a building with six tanks (several of which were identified as bleachers). There were six agitators between the western platform and the building that housed the bleachers. Seventeen tanks were identified north, northeast, and east of the bleacher building. One of these tanks was labeled as a tar tank and was located northeast of the bleacher building. North of the tar tank, there was a row of four unidentified structures and two rectangular tar stills. Another building used to store materials was located west of the tar stills. Two more unidentified structures were shown east/southeast of the tar stills. Further east, there were four reducing stills and three pitch stills south of those. The two unidentified structures could have been associated with one or both of the nearby stills. A branch of the Constable Hook Railroad ran parallel to the pitch and reducing stills. Another branch ran parallel to the previous line, however, extended further south and wrapped along to the east. It ended up running south and parallel to the hook portion of the Platty Kill Creek.

East of the branches of the railroad that ran near the stills, was another Boiler House (No.2) and a tank on its southeast corner. South of the Boiler House, there were two water tanks, a building labeled Building H and three more buildings. One of the three buildings was a store that was located next to the railroad. East of Building H were two buildings and a tank. East of Boiler House No. 2 was an acid plant and an acid condenser (north of the plant). An office was located on the eastside of the acid condenser. Another structure and 7 tanks were identified south of the plant. Two more tanks were located north of the Boiler House No. 2 and there were four more tanks to the east of those. A 5-foot high wall ran along the east edge of the property, from the Platty Kill Creek to the Constable Hook Railroad.

<u>On the west side</u>:

There were three tanks that are labeled Tanks A, B, and C that bordered the north side of Warehouse A. Two tanks were identified north them. Three more tanks east of Tank C were located either in a building or on a platform. Tank D was located further to the east. An overhead barrel run was also present, which extended from Warehouse A,

north of Buildings K and B and then into Building C. The barrel run also extended to the north, turned into the iron and concrete gravity barrel run, crossed over the Constable Hook Railroad and ended up entering into the barrel storage building labeled Building J. Building J was located north of the east-west traveling Constable Hook Railroad. Fifteen tanks and two pump houses were located north of Building A. There were four buildings north of these tanks. Two of the buildings contained bleachers, one building had six tanks and the other had three. Another building had six tanks in it that were steam stills.

West of the buildings with bleachers in them, there were four more buildings, twelve outside tanks, a main building that was associated with a clay plant, a laboratory, a building with ten tanks and an unidentified building west of the latter building. Another tank was identified to the east of the building with the three bleachers. North-northeast of the clay plant and buildings in that area, there were 31 tanks, an office and a boiler shop. There was a railroad branch that traveled east of the boiler shop, past several tanks, and then stopped before it reached the buildings that held the bleachers. An unidentified structure was located to the east of the railroad tracks.

North of the tanks, there was an area that contained several stills. Moving from east to west, there was a rail line box, a long, rectangular still, five stills in a row (oriented north-south), a railroad branch, six more stills in a row, three long, rectangular stills, another tail line box, eighteen stills in rows (two rows of nine), another railroad branch, and then Boiler House No. 1. Two more tanks were located west of the boiler house. Another railroad line branched down and looped around to the west. On the other side (on the west side) of this railroad branch, there was a gas plant. There were two tanks, a pump house and three buildings in that area. The iron and concrete gravity barrel run traveled on the west side of the gas plant. West of the barrel line was another railroad branch, which intersected the rail line from the east side of the plant. They intersected on the south side of the gas plant. West of the western railroad branch, there was a plate shop building. A rail line connected on the north side of the plate shop building.

A filter plant was located on the eastern part of the property, north of the Constable Hook Railroad. The plant included a main building, two structures on the east side of it, two structures north of it, a building south of the main building and a building southwest of the main building. There were 33 tanks south of the filter plant, fifteen to the north and three to the west. Nine larger tanks were located to the north of the previously mentioned ones. A cemetery was positioned north of the big tank field and bordered Old Hook Road to the east. On the west side of the tank field was a brick fence that traveled around the perimeter of another tank yard to the west. Inside the brick fence there were 34 tanks, a building for watchmen, and two structures in the southeast corner. Three more buildings were located south of the fenced in tank yard and west of the filter plant. Building G housed fifteen tanks. There were four tanks north of it, which were either in a building or on a platform. West of this building, was another office and then five tanks. The third building was located west of the tanks and was labeled as Building M. A checking station was positioned west of Building M, on the other side of a fence that ran parallel to the brick fence.

On the west side of the check station, there was a line from the railroad that ran north to south and branched into six lines. There was a structure located to the west of the railroad before it branched into six separate lines. Further to the west of that structure, was Barrel Storage Building J (the building that the iron and concrete gravity barrel run entered after it traveled from Warehouse A. The barrel run came into the western part of the building and it continued north out of the east side of the building into the New Barrel Factory.

To the west/northwest of Building J and south of the branching railroad, there were eleven stills, Avenue G to the west and then seventeen stills. Three more stills were also located in this area but they crossed over Avenue G. West of Avenue G, there were also six oil tanks in the northeast corner of the still area.

North of the stills and oil tanks, there are seven piles, two sheds, and a building for dry kilns. The New Barrel Factory was located to the east of that, along with two

buildings that were south of the factory. Two buildings were located to the east of the factory building, including an office building. There was a freshwater line that ran north to south parallel/in between the barrel run and the fences. There was a meter box on the freshwater line, north of the office. A 14-foot high concrete fence was north of the New Barrel Factory and the building for the dry kilns. Hook Road, which intersected with Central Avenue and then became East 22nd Street, was on the other side of the fence. East of the freshwater line, the fence and the north side of the tank yard, one of the railroad lines branched again. Two of the rail lines traveled by the New Barrel Factory and two went to the east (running parallel to the main Constable Hook Railroad). South of the two branches to the east, but north of the tank yard, were two buildings and five tanks. North of the two branches, there were four buildings and eleven tanks. Three more buildings were further to the east and two tanks were south of them. Avenue H was to the east and then four more tanks, a building and then Old Hook Road.

2.5.4 1979

The 1979 Sanborn map for the West Side shows that Avenue G was no longer there, as in the 1950 map. Also absent from the 1979 map, that was present in the 1950 map, was an unlabeled structure located east of Avenue H by a group of four tanks. Another structure was missing from the west side of Avenue H as well. Everything else on the map remained the same as depicted on the 1950 map.

2.5.5 1988, 1991, and 1994 (January and December)

All of the Sanborn maps for the West Side drawn for the years 1988, 1991 and 1994 remained the same as the Sanborn map for 1979.

2.6 Historical Aerial Photographs

Vertical aerial photographs of the site and surrounding area were acquired from Robinson Aerial Surveys, Inc. and were enlarged to a scale of 1-inch equals 200 feet on

36-inch by 48-inch photographic paper. Photographs were selected for interpretation and review from 1935, 1947, 1959, 1963, 1970, 1977, 1984, and 1989. The 1935 photograph is the earliest vertical photograph available and does not date back to when the site was naturally vegetated. The 1935 aerial did not include the entire site but it was still used to depict the changes identified for the yards that were included. Yards that were included, at least partially, in the aerial photograph are Yards 1, 2, 3, 5 and 8.

A chronological summary of observations including major changes in tanks, surface impoundments, tenant areas, drum storage, etc., are presented in narrative form. Copies of the photographs are provided as **Figures 5, 6, 7, 8, 9, 10,** and **11**. The 1935 map could not be obtained electronically; therefore, a reproduction of the original map is provided in Appendix A.

2.6.1 1935

Yard 1

In Yard 1, 113 ASTs were identified on the 1935 aerial photograph. Eleven buildings/other structures were also identified in the yard. However, there could have been more tanks and buildings located in this area but the northern portion of Yard 1 was not included in the aerial.

One building in the southeast corner of the yard was labeled as Pump House No. 12 on the 1921 and 1948 site plans and has two manifolds attached to it. There is a gasoline manifold on the east side of the building and a fuel oil manifold attached to the west side. There was another pump house, labeled Pump House No. 15, in the northeast corner of the yard. It was located west of where tank 1701 is currently positioned. Two buildings were identified in the center of the yard, west of the current tanks 1162, 1110 and 1105. The northern building of the two was labeled as a Pump and Blower House on the 1948 site plan and the southern building was used for Orifice Treaters. Two more buildings were located south of current Tanks 1123 and 1122 in the southern portion of

Yard 1 and were labeled as a Pump House (west) and an Ethyl Plant (east). Another building was located southwest of Pump House No. 12 and was labeled as a Wash Room. The southernmost building in Yard 1 was Warehouse No. 1 and was located on the bank of the Kill Van Kull, just north of Pier 1 and west of the Compound Building. The three other buildings located in Yard 1 were not labeled on historic site plans.

Yard 2

The Yard 2 tank configuration in the 1935 aerial photograph was slightly different compared to the current arrangement. There was an estimated 130 tanks in the Yard, but due to the shadowing in the photograph, there may have been other tanks that were not identified in this write-up.

There were 22 buildings identified in Yard 2 in the 1935 aerial. Warehouse No. 2 was located on the shore of the Kill Van Kull between Piers 3 and 4 and there was a storage building that extended the length of Pier 3. An unknown building was located just north of the Warehouse No. 2 building, west of the rows of 18 tanks. Two buildings were positioned north of the storage buildings on Pier 3. One of the buildings was unidentified but the other was used as a Gas Filling Room. Immediately to the west, there were four more buildings. These included the Filled Carton Storage Building, the Salt Water Pump House, the Compound Building and Hot Room/Pump House No. 11 to the north. East of the Hot Room/P.H. No. 11 building were two more buildings. One was used as a Machine Shop/Box Shop/Auto Shop building and the other was unidentified. The unlabeled building was located along the Platty Kill Canal and south of where Tank 2173 is currently situated. There were six buildings identified on the western portion of the yard, including the Main Office building, the Cafeteria/Instrument Shop, and the Boiler House/Power Station. Three buildings were located west of the current Tanks 2132, 2134, and 2136. One was identified as a Lube Oil Pump House No. 23 but the other two were not labeled on the site plans. The Dispensary Educational Department/ Employment Office building was located in the northwest corner of the yard.

Yard 3

Approximately 110 aboveground storage tanks were identified in Yard 3 in the 1935 aerial photograph. As mentioned in the previous yard sections, due to the shadows cast on some areas of the site when the photograph was taken, an exact number of tanks cannot be positively determined. The same problem was a factor when deciphering buildings as well. An estimated 14 buildings were on site in Yard 3 in 1935. The Edeleanu Building was located in the northeast corner of the yard and a pump house was located to the southwest of it, adjacent to two rows of tanks. Three more unknown buildings were identified in the area to the east of the pump house. Four prominent buildings were located in the center of the yard, northeast of the former Platty Kill Pond location. These buildings were located in the area where the Chiller & Exchanger and Refrigeration Filter & Pump buildings are/were located. Northwest of these buildings, was another building labeled as the Solution Pump House No. 31. Southwest of the Solution P.H. No. 31, was Pump House No. 31/Compressor Building. This building was located in the southwest corner of where the current Yard 3 lagoon is positioned. Another pump house and Lube Units No. 2 & 3 were located along the northern boundary of the yard.

Yard 5

Only the southeast corner of Yard 5 was depicted in the 1935 aerial photograph. Forty-two aboveground storage tanks were included in this portion of the aerial.

Yard 8

The 1935 aerial photograph included most of Yard 8, also known as the area leased by Rona Pearl, but cut off part of the western side of it. Twenty-seven ASTs were identified in the Yard 8 area, along with six buildings.

2.6.2 1947

Yard 1

In the 1947 aerial photograph, 89 ASTs can be identified in Yard 1. Of the 89 ASTs identified, 33 remain on site today.

An operations portion of the facility existed near the northwest corner of Yard 1. This operational area extended into what is now known as the White Chemical area. This operational area was located where Tanks 1702, 1703 and 1704 are currently located. Based on the 1948 site plan this operational area was identified as Combination Unit No. 7. Structures identified in this unit included a Red Crude Heater, Cracking Cases, Topping Heater, Heat Exchange Structure, Turbo Compressor, Control Room and exchange structure. The red crude heater, and cracking cases were located where Tanks 1702, 1703 and 1704 are currently located. The remainder of Unit No. 7 was located in the area currently known as the White Chemical area.

One building was identified in the photos southwest of the present Tank 1701 location. The 1948 site plan identifies this building as a pump house. A second building was located southwest of what is currently Tanks 1102 and 1066 locations. The 1948 site plan also identifies this building as a pump house with a gasoline manifold adjoining the building on the east side and a fuel oil manifold adjoining the west side. The two manifolds are clearly evident in the aerial photo. Two additional buildings were identified southwest of the current Tank 1700 location. These buildings are on the 1948 site plan; however, the identifiers are not readable. In the center of the yard, what appears to be two attached buildings were identified northwest of the current Tank 1105 location. On the 1948 site plan the north building is identified as a pump blower house and the southern building as "Orifice Treaters". Immediately south of the orifices treaters building are four horizontal tanks that are identified as "settlers" in the 1948 site plan. Along the Kill van Kull, one building was identified adjacent to where the compound building in Yard 2 is currently located. This building is identified as Warehouse No. 1 on

the 1948 site plan. An additional building situated south of Tank 1700 can be identified at the location of the existing Electric Storage Building. This building is identified as Locker Room on the 1948 site plan. Four buildings were located in the northwest corner of the yard north of Combination Unit No. 7. These are identified as the Engine House, Wash and Locker Room, Salvage Department, and a Paint Shop on the 1948 site plan. The building identified as the Engine House, is presently known as the Round House building.

There are two piers evident in the 1947 photo. The first pier, approximately 550 feet in length, is identified on the 1948 Site Plan as Pier No. 1. This pier is still active today. The second pier, approximately 200 feet in length is identified as Pier A in the 1948 Site Plan. Remnants of this structure are still present at the site; however, the pier is not used.

Yard 2

In 1947, aerial photographs show approximately 115 ASTs in Yard 2. Approximately 63 of the 115 ASTs are still standing in Yard 2 today. Eight of the 115 ASTs are horizontal tanks located immediately south of the Platty Kill Pond. Additionally, 18 buildings were identified in the 1947 photo. As indicated in the 1948 site plan these included the Main Office/Engineering Department, Restaurant, Cafeteria, Research Laboratory, Automotive Testing Laboratory, Boiler House/Power Station/Turbo Alternator Complex, Auto Repair/Machine Shop/Box Shop Complex, Electric Shop/Marine Store Room, Hot Room, Compound Building, Filled Carton Storage, Six Pump Station, Warehouse and No. 2 Warehouse. Six of these 18 buildings currently exist on site and include: the compound building, the boiler house, the main office building and two buildings northeast of the main office. These two buildings were formerly known as the Automotive Research Laboratory and the Research Laboratory.

At the waterfront in Yard 2 four piers are present, identified from east to west in the 1948 Site Plan as Pier No. 4, Pier No. 3, Coal Pier and Pier No. 2. The buildings

identified as No. 2 Warehouse is located immediately north between Piers 3 and 4. The building identified as warehouse is immediately north of Pier 4. Pier No. 4 also has a building structure on its entire length. The electric shop/marina storeroom is located north of the coal pier. The six pump stations and filled carbon storage building are located north between the coal pier and Pier No. 2. The compound building is located immediately north of Pier No. 2 and immediately adjacent to the filled carbon storage building and Warehouse No. 1 in Yard 1. The Hot Room building is north of the compound building. The Auto Repair/Machine Shop/Box Shop complex is located east of the Hot Room building. The No. 2 Warehouse building has eight cylindrical ASTs adjoining its west wall and a series of 18 ASTs immediately north of the building. Yard 2 abuts the Platty Kill Pond and Platty Kill Canal, which for purposes of this report, are identified as Yard 9 and will be discussed later. The Platty Kill Pond and Platty Kill Canal abuts Yard 2 and for purposes of this report are identified as Yard 9, which will be discussed later.

Yard 3

Eighty-four ASTs and 16 buildings were identified in the 1947 aerial photograph. Forty-four of the 84 ASTs remain in Yard 3 today. The sixteen buildings identified include: four buildings along the center of the northern boundary identified as Lube Units on the 1948 site plan. One building at the approximate center of the yard's south boundary identified as the Dispensary/Educational/Employment Department. One building northwest of the Dispensary building identified as a pump house. Two buildings northeast of the Dispensary Building and west of the Platty Kill Pond are identified as the Chiller/Exchanger Building and the Refrigeration Filter/Pump Building. One building immediately northwest of the Chiller building identified as Pump House #31. One large building in the northeast corner of Yard 3 identified as the Edeleanu Building. Two buildings immediately south of the Edeleanu Building, the Pump House to the east and Weir Building to the west.

There are two transition areas present within Yard 3. The first area is located north of the Chiller Building and appears to be the location of the No. 3 Boiler House, based on the 1921 Site Plan. The second area is located along the western border of Yard 3 and appears to be the former location of a series of crude stills identified by the 1921 site plan. The vacant area immediately north of the building identified as the Dispensary, is the former location of a separator pond that was identified in the 1921 Site Plan. There is no such area on the 1948 Site Plan.

Yard 4

The aerial photograph from 1947 shows approximately 31 ASTs in Yard 4, 23 of which were located in the northwestern corner of the yard. Four ASTs were located along the eastern boundary, two along the southwestern yard boundary and three along the western boundary. Of these 31 tanks, none remain in Yard 4 today.

A large operational area is located in the southwestern portion of the yard. This operational area appears to be one of the main refinery operations at the site based on the 1948 site plan. This area included four cracking coils, two bubble towers, a tar cooler, two control pump houses, two heaters, a third pump house, a reactor structure, super heater, gas compressor building, and several other structures and buildings. A large train yard is present in the northeast portion of Yard 4. Other buildings present in Yard 4 include a transfer pump house and manifold, a Wash Room Building, Development Department Building, stills and four unidentifiable buildings in the southeast corner. A separator is also evident in the northwest corner of the yard.

Yard 5

In the aerial photograph dated 1947, it appears that 105 ASTs were present in Yard 5. Thirty-four of these tanks remain in Yard 5 today. Also identified in Yard 5 was a surface impoundment, which still exists today. This surface impoundment, located in

the northwest corner of the yard, appears in 1947 as two impoundments divided by an earth dam. Piping directed into the impoundments is also visible in this 1947 photo.

Seven buildings were identified in the 1947 photo, five of which were located near the southeast corner of the yard. These were identified on the 1948 site plan as the Wax Room, Wax Molding Room, two Clay Retorts, and one Pump House. Two additional buildings were located near the southwestern corner of the yard. Based on the 1948 site plan these were identified as a Crude Oil Pump House and Crude Oil Manifold. None of these buildings remain in Yard 5 today. There is a square vacant area south of Tanks 5801 and 5802 that is identified as the Constable Hook Cemetery. An area of piping is visible in the photographs near the southeastern corner between Yard 8.

Yard 6

In the 1947 aerial photograph, Yard 6 is essentially vacant. According to the 1948 Site Plan this area was not owned by the Tidewater Oil Company, but appears to be owned by Central Rail Road of New Jersey. Visible in Yard 6 are two buildings in a fenced in area along the eastern boundary and west of the Combination Unit No. 7 operational area identified in Yard 1. One building was present near the northeastern yard corner. A tower-like structure was located near the center of Yard 6 and a possible storage area is visible along the northeastern yard boundary.

Approximately half of the Yard 6 western boundary is shoreline. There are three wooden piers present west of the yard; two of which appear to be inactive and one active. It is believed that the Central Rail Road of New Jersey operated these piers. The pier closest to the shoreline is actually within the Yard 6 western boundary, and is inactive.

Yard 8

A review of the 1947 aerial photo indicates that Yard 8, which until recently was the leasehold location of the Rona Pearl tenant, was the location of an apparent

operational area. A total of 48 ASTs are visible in the yard. The eastern portion of the yard appears as a piping area, possibly a polymer plant as identified on the 1948 site plan. Also identified, were seven buildings, five of which were located in the center, one along the western side and one in the southeastern corner. One building in the center of the northern border of the yard remains today. Based on the 1948 Site Plan, the buildings identified from west to east, include Sweaters, Centrifuge, Annex, No. 4 Building, Chillers, No. 1 Building Annex, and Wash Room.

Yard 9

For purposes of this report, Yard 9 is the Platty Kill Canal and the former Platty Kill Pond. The Platty Canal is L-shaped with the Platty Kill Pond at its headwater. The 1948 site plan identifies the Platty Kill Pond as a Separator Pond. Sorbent booms on the Platty Kill Canal are visible in the 1947 aerial photograph from the pond to the bend in the canal. No dams are visible in the creek in this photo. The creek extends from the Platty Kill Pond to the Kill van Kull as it does today. A barge is present along the IMTT side of the canal at a location approximately halfway between the Kill Van Kull and the bend in the canal. The Platty Kill Canal forms the boundary between IMTT and Exxon. No discharges or pipes are readily apparent entering the pond or canal in the 1947 photograph.

Yard 10

For purposes of this report, Yard 10 is the present location of the Co-Gen facility tenant. In the 1947 photo, the Yard 10 area includes some sort of operational area on the center and east portion of the yard, and two buildings and a storage area on the west portion of the yard. On the 1948 site plan the operational area in the center portion of the yard is identified as a gas plant. The identification of the operational area on the east portion of the yard is not readable on the site plan. Two buildings are present north of the east side operational area; these are identified as Wash and Locker rooms on the 1948 site plan. The larger of the two buildings on the west portion of the yard is identified as a

Plate Shop, and the smaller building as the Carpenter Shop. The storage area to the north of these two buildings is identified as a Lumber Storage Area.

A total of seventeen ASTs are visible in this yard in the 1947 photo. The Gas Plant Operational area also includes what is identified as a Butane-Propane Plant. Five horizontal tanks associated with the gas plant are located west of the plant. Three small buildings, identified as Riggers Wash Room and Riggers Stores are located immediately west of these horizontal tanks. Two large round tanks identified as Gas Holder and Gas Holder 2 are located north of the horizontal tanks. A group of nine ASTs separate the Gas Plant area from the operational area on the east portion of the yard. The east side operational area borders Yard 3.

A small building with a smoke stack is visible at the southwest corner of the yard, south of the carpenter shop. The 1948 Site Plan identifies this building as an incinerator.

2.6.3 1959

Yard 1

In the 1959 aerial photograph, 67 ASTs were identified. Forty of the 67 ASTs identified remain on site today; six of these ASTs were erected between 1947 and 1959. Nineteen ASTs were removed from the northeast corner of the yard in the immediate vicinity of what is currently Tank 1701. Four of the "new" tanks were erected in this area. One AST, located immediately south of Tank 1102 was no longer present. Additionally, Tank 1700 which remains today, replaced eight ASTs in the center of the yard.

By 1959, the Combination Unit No. 7 operational area identified in the 1947 photo, including all buildings and tanks associated with it, was no longer present. One new building was erected in this area. All of the other buildings identified in the 1947 aerial photograph were still erect in 1959. Both piers identified in the 1947 aerial photo

were still present on the 1959 photo although the shoreline immediately west of Pier A has changed significantly.

Yard 2

Changes occurred in Yard 2 between 1947 and 1959. Approximately 101 ASTs were identified in the 1959 aerial photograph. Currently, 73 of the 101 identified remain on site today. Between 1947 and 1959, five of eight horizontally oriented ASTs located next to the Platty Kill Pond were removed and it appears that ten new ASTs were erected in the vicinity of the Platty Kill Pond and Platty Kill Canal.

The building identified as No. 2 Warehouse and the tanks associated with it (18 to the north and 8 adjoining its west wall) are no longer present. The Electric Shop/Marine Storage building and the Filled Carton Storage building are no longer present. A large L-shaped building has been erected at the waterfront at the head of Piers 3 and 4 and the coal pier. A series of fourteen cylindrical ASTs have been erected immediately north of this new building. This building is presently known as the P&S building. The machine shop is still present, however the automotive repair shop and box shop that were part of this building complex are no longer present. A new building was erected south of the research laboratory.

Yard 3

Changes occurred in Yard 3 between 1947 and 1959. In the 1959 aerial photograph, 80 ASTs were identified; sixty of these ASTs remain today. Eighteen buildings are also visible in the 1959 photo.

The Edeleanu Building is still present in the northeast corner of Yard three, however the Weir Building, which was located immediately south of the Edeleanu Building is no longer present. The tank group immediately south of the Edeleanu building has increased in size from twenty ASTs to twenty-nine, four of which were

erected on the site of the former Weir building. The Chiller building appears to have been expanded. A new operational area, most likely the Propane De-asphalting Unit and Furfural Extraction Unit identified on the 1948 site plan, is present north of the chiller building. This area was formerly the site of Boiler House No. 8. Twelve ASTs were also removed from this area. The Lube Units that were present along the center of the north yard boundary are no longer present. This area appears to be vacant land. Two buildings were erected north of the Dispensary Building at the south end of the Yard in the location of the former settling pond identified on the 1921 Site Plan. Six ASTs were erected west of the building identified as Pump House No. 3 in the center of the Yard in the area of four ASTs that were present in the 1947 site plan. The large vacant area along the Yard 3 west border which was identified in the 1947 photo as the former location of a series of crude stills, remains vacant, although three small to medium sized buildings and aboveground piping has been erected.

Yard 4

Changes occurred in Yard 4 between 1947 and 1959. In the 1959 aerial photograph 31 ASTs were identified. None of these tanks remain in Yard 4 today. The large operational area located in the western portion of Yard 4 is not present in the 1959 photograph.

The large train yard is still present in the northeast portion of the yard. It appears that at least one new building has been erected in the southeast portion of the yard. The separator is still evident in the northwest corner of the yard.

Yard 5

Ninety-seven ASTs were present in the 1959 aerial photograph. Thirty-four of these ASTs remain today. The piping located near the southeast corner of the yard in the 1947 photo was removed. However, in the 1959 photo, piping was identified a small distance to the east of the pipes removed. Four buildings in the southeast corner of the

yard are no longer present. Buildings removed include the Wax Room, Was Molding Room and two Clay Retorts. The pump house in the extreme southeast corner of the yard is still present. A new operational area appears to have been erected on the site of the Was Molding building. The Crude Oil Pump House and Crude Oil Manifold are still present in the southwest corner of the yard. The surface impoundment in the northwest corner is present. In 1959 the earth dike separating the impoundment is no longer present and appears larger than in the 1947 photo. Two areas of ponded water located just south of the surface impoundment were also visible in the 1959 photo. The ponded water appears to be present at the locations of two tanks that were removed between 1947 and 1959.

From 1947 to 1959, the following tanks were removed; two ASTs from along the western yard boundary, two small ASTs southeast of Tank 5059, one small AST southeast of Tank 5211, one AST near the southeast corner and four horizontal ASTs in the southeast corner. The cemetery is still present in the yard.

Yard 6

Changes occurred in Yard 6 between 1947 and 1959. Fifteen ASTs and seven buildings are visible in the 1959 aerial photograph. Two medium-sized buildings were located near the center of the eastern boundary. These are identified today as the Foam Building and Garage. One small building is present immediately south of the Garage Building. One small building is present east of Tank 6009, near the corner of Yards 6 and 10. One medium-sized building is present east of Tank 6203. The Salt Water Pump-House and the screen Chamber are present at the southeast corner of the yard in the vicinity of Pier A in Yard 1. The inlet next to the Yard 6 western boundary appears partially filled in toward the northern end. Standing water appears to be present in the central portion of this filled area. Standing water also appears present in the northeast corner of the yard, east of Tanks 6008 and 6009 in the vicinity of the small building at the corner of Yard 6 and 10. The southern portion of the yard appears to be used as a storage area.

Two groups of large tanks were erected between 1947 and 1959 in the northwest portion of the site. These include a group of six tanks (6003, 6004, 6005, 6006, 6011 and 6012) on the western portion of this area and a group of five (6002, 6007, 6008, 6009 and 6010) in the central portion. Each of these two tank groups appears to have a concrete wall erected around them for containment purposes. Two small tanks were erected southwest of the tank group containing six tanks. Two additional large tanks, identified as 6203 and 6204, were erected in the central part of the yard. An earthen dike appears to have been constructed around these tanks. Some sort of drainage path appears leading from the midpoint of the north wall of the tank group containing five tanks into the vacant area to the north. A rather large storage area appears to be present in the central portion of the yard southeast of Tank 6204

Yard 8

In the 1959 aerial photograph, Yard 8 is essentially vacant. The entire operational area including buildings, pipes and tanks are no longer present. The only remaining structures in the yard include a medium-sized building at the approximate center of the yard's southern boundary and a row of five ASTs east of the Wash Room Building.

Yard 9

In the 1959 air photo, discharges to the Canal are visible from both the IMTT and Exxon sides. On the IMTT West Side, one discharge is on the west side of the pond. Another discharge is located on the west side of the canal, approximately 350 feet north of the mouth. Two discharges are also visible on the Exxon (east) side, one near the pond and one at the canal mouth near the Exxon pier on the Kill van Kull. What appear to be several sorbent booms are located in the Platty Kill Canal and Pond. In the 1959 photo, no dams are present in the canal. Floating product appears to be on the surface of the pond and on the surface of the upper canal. Since there are no manufacturers on the IMTT' side, it is speculated these were stormwater discharges. Some of the Exxon

discharges may be steam condensate. A barge appears to be entering or is docked at the mouth of the Canal.

Yard 10

Changes occurred in Yard 10 between 1947 and 1959. In the 1959 photograph, both the Gas Plant operational area in the center of the yard and the operational area on the east side of the yard are no longer present. The two Wash and Locker Room Buildings located north of the operational area on the east side are still present in the 1959 photo, including the group of nine ASTs separating the two operational areas. Two buildings remain from the Gas Plant, including a compressor Building west of the nine tanks and a Pump House south of the Compressor building. The five horizontal tanks and two gasholders are no longer present. The two former operational areas are vacant in the 1959 photo.

The Riggers buildings, Plate Shop building and the Carpenter Shop building are all still present in the west portion of the Yard. The Carpenter Shop building has been expanded in a southerly direction. There has been a significant reduction in the volume of lumber stored in the lumberyard. The incinerator located on the southwest corner of the yard is no longer present in the 1959 photo.

2.6.4 1963

Yard 1

In the 1963 aerial photo, 52 ASTs can be identified in Yard 1. Forty-two exist today. Three AST's (1702, 1703 and 1704) were erected between 1959 and 1963 in the area previously identified as the Combination Unit No. 7 area. Those tanks abut the western boundary of the White Chemical area. During the period from 1959 to 1963, nine ASTs were removed from the area east of Tank 1700 and south of Tank 1701. The

six tanks that were located at the north end of the White Chemical area are no longer present.

The buildings identified previously as a pump blower house, orifices treaters and the four horizontal settler tanks are no longer present. It appears that the nine ASTs that were present immediately west of these buildings were removed and replaced by new tanks that were erected at six of the nine former locations. Tank 1701 was erected at some time between 1959 and 1963. This tank was erected in the northeast corner of Yard 1, immediately northeast of the building previously identified as a pump house. This pump house building is not present in the 1963 photo.

Three of the four buildings that were identified in the 1947 and 1959 photos, located in the northwest corner of Yard 1 north of the Combination Unit No. 7 area, were no longer present in the 1963 photo. These included the Washer and Locker building, the Salvage Department building and the Paint Shop. The Engine House remains. Along the Kill van Kull, the building identified as Warehouse No. 1 was no longer present. Both Piers 1 and A are still present. Pier A appears to have been completely renovated.

Yard 2

Only minor changes were noted in Yard 2 between 1959 and 1963. In the 1963 aerial photograph, approximately 105 ASTs were identified in Yard 2. Seventy-five of the 105 ASTs are on site today.

Activities between 1959 and 1963 appear to include the installation of four additional ASTs and the removal of the restaurant building that was located south of the main building.

Yard 3

Changes have also occurred in the central part of Yard 3 between 1959 and 1963. In the 1963 aerial photograph, seventy-six ASTs and eleven buildings were identified. Sixty-four of the seventy-six ASTs identified in this photo currently exist on site.

The Edeleanu Building in the northeast corner of the site is still present and the tank area south of this building remains virtually unchanged from the 1959 photo. Five tanks and some sort of operational structure were removed from the area adjoining the south wall of the Chiller Building, west of the Platty Kill Pond. Most of the changes to this Yard occur in the area north of the Chiller Building. The operational area that had been erected north of the Chiller Building between 1947 and 1959 is no longer present. Four large ASTs have been erected in the northern portion of this area (Tanks 3921, 3922, 3923 and 3924). The area between the Chiller Building and these four new tanks is vacant.

At the southern end of Yard 3, the Dispensary Building is no longer present, replaced by a parking area. The pump house that was located northeast of the Dispensary Building is also no longer present. An aboveground tank that was located immediately west of the Refrigeration Filter and Pump Building is no longer present. Tractor-trailer trucks are evident in the central part of the yard and along the Yard 3 northern border in the area where the Lube units were located.

The area on the western yard boundary remains vacant and growing vegetation is clearly evident. At least one new building was erected in this area.

Yard 4

Twenty-two ASTs and 15 buildings can be identified in Yard 4 in the 1963 aerial photograph. Between 1959 and 1963, nine ASTs were removed from the northwest corner of the yard. Near the main entrance to the site (northeast corner of the yard), three

buildings were removed and some type of operational area is present. The buildings identified as the Transfer Pump House and manifold were no longer present in the area north of the former operational area. At least one new building was erected in this area. During this time, one building was removed along the southeast yard boundary. The train yard is still present in the northeast portion of the yard and the separator is still present in the northwest corner of the yard.

Yard 5

The 1963 aerial photograph shows sixty-nine ASTs and three buildings in Yard 5. Thirty-four of the sixty-nine ASTs remain today. The surface impoundment in the northwest corner is still present and contains visible piping. Standing water in the two former tank locations south of the impoundment is also evident in the 1963 photo.

Between 1959 and 1963, 28 ASTs were removed from various areas of Yard 5. The tanks removed are as follows: one tank near the southeastern boundary, eleven from south and southwest of Tanks 5211 and 5214, one from southeast of Tank 5059, three tanks from south and southwest of Tank 5059, eleven from the southwestern corner of the yard, and one tank northeast of Tank 5209.

The new operational area identified in the southeast corner of the yard in the 1959 photo is still present on the 1963 photo. Some new activity appears west of this operational area, possibly attributable to a new building in Yard 8. The Crude Oil Pump House and Crude Oil Manifold are still present in the southwest portion of the yard, as is the pump house in the southeast corner.

Yard 6

Fifteen ASTs and seven buildings are present in Yard 6 in the 1963 aerial photograph. The ASTs identified are the same as those that appear in the 1959 photo. Two areas of standing water are visible in the northeast corner of the yard in the 1963

photo that is in the same approximate location identified in the 1959 photo. The larger of these two areas appears to be partially dry but also appears to be disturbed. What looks like an area of pipe storage is present north of the larger of the two ponded areas.

One building was built southwest of Tank 6012 during the 4-year period between 1959 and 1963, and the small building, located east of Tank 6009 near the corner of Yard 6 and 10, was removed. Another small building was erected immediately east of tank 6009.

The drainage path in the vacant area leading from the tank group containing the five tanks is much larger and more readily apparent on this photo. The open water that was filled in between the pier and shoreline of Yard 6 appears to be more heavily vegetated with no visible standing water. The large storage area that was present in the 1959 photo, southeast of Tank 6204, is no longer present in the 1963 photo although, its former location is readily apparent. The whole area southeast of Tank 6204 appears to be fairly well vegetated.

Yard 8

The 1963 aerial photograph shows only one building present, near the center along the yard's south boundary. This new building appears to be attached to the east wall of the washroom building extending in an easterly direction. Also identified were four ASTs located at the northeast corner of the building. The above-noted building still exists today. Nine horizontal tanks appear to be located immediately northwest of the building, which may be cylindrical, vertical tanks awaiting installation. As it appears, the new building in the yard was under construction at the time the 1963 photo was taken.

Additional construction related material and equipment appears to be located immediately east of the building.

Yard 9

Discharges to the Canal are still visible on the Exxon side (east side) of the creek. This discharge near the pond was also identified in the 1959 photo. A second discharge from the Exxon side of the Canal appears to be coming from a point 300 feet from the mouth of the Canal. A white area at the southern end of the Canal on the IMTT side appears to be steam or condensate. What appear to be sorbent booms appear at several locations along the Canal and floating product appears to be present on the surface of the Pond. An aboveground pipeline appears to have been constructed along the west bank of the Canal and Pond extending up into Yard 3. A barge appears to be docked on the IMTT side of the Canal at the mouth.

Yard 10

In the 1963 aerial photograph, the two former operational areas remain vacant. The group of nine tanks separating the two areas is no longer present. Remnants of an aboveground pipeline on either side of this former tank group are readily apparent in the photo. The former Gas Plant Compressor building and Pump House building are no longer present in the 1963 photo.

The two wash and locker room buildings in the northeast corner of the yard and the Carpenter Shop building and Plate Shop building on the west side of the yard are still present in the 1963 photo. The lumberyard area north of the carpenter shop appears to be inactive.

2.6.5 **1970**

Yard 1

Fifty-two AST's were identified in the 1970 aerial photograph; forty-three of these ASTs remain on site today. Tank 1710, which had been removed between 1959 and

1963, was replaced sometime between 1963 and 1970. This tank is still on site today. One tank located southwest of the Electric Storage Building was no longer present. Standing water can be seen in this area in the 1970 photo. This area is south of Tank 1700 and southwest of the building previously identified as a pump house with two adjoining manifold systems. According to historical aerial photographs, only one building located southwest of Tank 1700 was removed between 1963 and 1970. An area of standing water appears to be present within the northwest corner of the Tank 1701 dike area. The White Chemical facility appears to be in full operation at this time.

At the waterfront on Yard 1, new aboveground piping runs are clearly evident and Piers 1 and A are still present. The shoreline immediately west of Pier A has changed once again with land that had been previously submerged or eroded away, now re-emerging.

Yard 2

Minor changes were noted in Yard 2 between 1963 and 1970. In 1970, ninety-five ASTs were identified, seventy-five of which remain today. Between 1963 and 1970, ten ASTs were removed. Two of the ASTs removed were located near the northeast corner of the P&S Building, adjacent to the Platty Kill Canal. Other ASTs removed included two located in the center of the yard, next to existing Tanks 2153 and 2142; one adjacent to the hot house; one near the research laboratory; and four north of the machine shop building.

Yard 3

Only minor changes can be noted between 1963 and 1970 in Yard 3. Sixty-eight ASTs and eleven buildings were identified in the aerial photograph dated 1970. Sixty-four of these ASTs exist in Yard 3 today.

From 1963 to 1970 six ASTs were removed. Those removed include two horizontally oriented ASTs located near the center of Yard 3 and two ASTs located near the northeastern corner of the yard, north of Tank 3838. Also during these seven years, the pump house located immediately south of the Edeleanu Building was removed and one building was erected along the western yard boundary. The western portion of the yard remains vacant and the tractor-trailer activity noted in the center of the yard and in the northern area of the yard in the 1963 photo is less evident. The vegetation noted on the western portion of Yard 3 in the 1963 photo is not clearly evident in the 1970 photo.

Yard 4

In the 1970 aerial photograph, eleven ASTs can be identified, six are in the northwestern corner of Yard 4, two are along the southern border of the yard and three are present along the north border. A total of twelve buildings were also identified. Between 1963 and 1970, six ASTs were removed from the northwest corner of the yard and four more were removed from the eastern boundary. During this time period two buildings were removed, one from the northeastern corner of the yard and one along the northern boundary.

The separator is still present in the northwest corner and the train yard is still present in the northeast portion of the site. The former operational area in the west portion of the yard appears to be heavily vegetated.

Yard 5

Fifty-four ASTs and three buildings were identified in the 1970 aerial photograph. Thirty-four of the ASTs remain today. The surface impoundment in the northwest corner of the yard is present in the 1970 photo. The size of the impoundment appears slightly larger than in the 1963 photo.

Sixteen ASTs appear to have been removed between 1963 and 1970. These tanks include: one in the center of the eastern yard boundary, eight near the southeast corner of the yard, one at the center of the northern yard boundary, one tank south of Tank 5076, two tanks southeast of Tank 5211, one tank along the southern yard boundary just east of Tank 5059, and two tanks west of Tank 5059. One AST was added west-southwest of Tank 5059.

Two areas of standing water are apparent. The first is in a former tank location south of the impoundment. The second area of ponded water appears to be in the dike area of Tank 5077. The operational area identified in the southeast corner of the Yard in the 1959 photo is still present; however, the activity noted west of this location on the 1963 photo is no longer present. The cemetery is still present and heavily vegetated. Areas of vegetation appear throughout Yard 5.

Yard 6

In the 1970 aerial photograph, seventeen ASTs and five new buildings were identified. The diked areas around the ASTs are not as visible in 1970 as in prior photos. The major change in Yard 6 between 1963 and 1970 is the addition of two large ASTs in the former area of the storage yard southeast of Tank 6204. These two tanks (6205 and 6206) remain on-site today. The small building located south of the garage and the small building southeast of Tank 6009, were removed between 1963 and 1970. The fill area by the pier appears to be more heavily vegetated, and there appears to be a new building erected north of the garage building.

A large area of standing water is apparent in the 1970 photo in the northeast corner of the yard. Additional standing water appears to be present in the diked area around Tanks 6002 and 6008. The drainage path leading from the tank group containing five tanks, into the vacant area to the north is no longer present. Although several small drainage paths appear to be present in this vacant area, leading to the large area of standing water present in the northeast corner of the yard.

The two other areas of standing water in the northeast portion of the site noted on the 1959 and 1963 photos are still present in the 1970 photo, although the larger of the two appears to be smaller in size than in 1963. Additionally, three rectangular shaped areas of standing water appear to be present along the yard boundary between Yards 6 and 10.

Yard 8

Eight ASTs were identified in the 1970 aerial photo. Six of the ASTs are located in a row along the northern yard boundary, north of the building, and two along the northwest corner of the building. One building was identified along the southern yard boundary near the southeastern corner. This building still exists in Yard 8 today, and was the building that appeared to be under construction in the 1963 photo.

The four ASTs identified in the 1963 photo are no longer present at the northeast corner of the building. The building area appears to have a fence erected around it. The remainder of Yard 8 is vacant. An aboveground pipeline appears in the center of the yard extending in a north-south direction from Yard 5 to the railroad tracks south of Yard 8.

Yard 9

Several sorbent booms are visible in the 1970 photo. Debris appears to be present behind the boom placed approximately 350 feet north of the canal mouth. What appears to be a dam or baffle has been installed south of the bend in the canal. Between the dam and the pond what appears to be a large discharge from the Exxon side is evident. This discharge location was also identified in the 1959 and 1963 photos.

Yard 10

Very few changes occurred between 1963 and 1970. In the 1970 aerial photo, the buildings, which were identified in the 1963 photo, are still present. Two of these buildings still exist today. Several storage-type containers are present in the former operational area on the east portion of the yard. The central portion of the yard appears to be fairly well vegetated.

2.6.6 1977

Yard 1

No changes in the number of location of ASTs are evident from 1970 to 1977. All buildings identified in 1970 remain in 1977, however, the areas of standing water identified southwest of the Electric Storage Building and northwest of Tank 1701 in the 1970 photograph, does not appear in the 1977 aerial photograph. The White Chemical operation is still clearly evident and appears to have expanded. The waterfront area remains unchanged.

Yard 2

In the 1977 aerial photograph, approximately 94 ASTs were identified, 75 of which remain on site today. Between 1970 and 1977, one AST was removed from the area southeast of Tank 2140. The building identified as the machine shop was also removed.

Yard 3

Only minor changes occurred in Yard 3 between 1970 and 1977. Seventy ASTs were identified in Yard 3 in the 1977 aerial photograph. Sixty-four of those identified in the photo remain in Yard 3 today. Three new horizontal ASTs are present northwest of

the building identified as Pump House No. 31. Also identified in the photo were twelve building, which is one more than in the 1970 photo.

Between 1970 and 1977, one building was built near the center of Yard 3, west of the building identified as the Refrigeration Filter and Pump Building. There are no signs of the tractor-trailer activity previously noted on the central and northern portions of the yard. A new type of truck activity or storage area is evident in the vacant area north of the chiller building. The western portion of the yard remains vacant and vegetation is evident.

Yard 4

Changes also occurred in Yard 4 between 1970 and 1977. In the 1977 aerial photograph, the same eleven ASTs identified in the 1970 photo are present along with seven buildings.

Between 1970 and 1977, seven buildings were removed. These included five buildings in the southeastern corner of the yard, one building near the center of the yard, and one building from along the eastern boundary. Two buildings were erected, one along the northern yard boundary and one along the eastern boundary. The majority of the yard remains vacant. The separator is still present in the northwest corner and the rail yard is still present on the northwest portion of the site.

Yard 5

Thirty-six ASTs and two buildings were identified in the 1977 aerial photograph. Thirty-four of which remain today. The surface impoundment in the northwest corner of Yard 5 appears to be approximately the same size as in the 1970 photo; however, the piping into the impoundment is not as visible. The two former tank locations south of the impoundment appear to have ponded water present. The ponded water noted around Tank 5077 in the 1970 photo is no longer present.

From 1970 to 1977, a number of changes took place. A row of four ASTs were removed south of the cemetery, a row of six ASTs were removed from the western side of the cemetery and six ASTs were removed from along the southern yard boundary. One tank between Tanks 5073 and 5801 in the center of the northern yard boundary was removed. The pump house building was removed from the southwestern corner of the yard.

The small operational area located in the southeast corner is still present, as is the cemetery and the pump house in the southeast corner.

Yard 6

The 17 ASTs identified in the 1970 photo remain visible in the 1977 aerial photograph. Also identified in the 1977 photo were five buildings, including three which remain today. Storage areas are visible near the northeast yard corner and along the eastern boundary between the foam building and garage. A continuous earthen dike has been constructed to encompass Tanks 6203, 6204, 6205 and 6206. The area within the diked appears to have been recently graded and the entire area has a much neater appearance than in the 1970 photo. A new aboveground pipeline is visible within the newly diked area.

The standing water noted in the dike area of Tanks 6002 and 6008 is no longer present. The large area of standing water located in the northeast corner of the yard in 1970 is no longer present; however, its location is readily apparent in the 1977 photo. The three rectangular bodies of standing water along the boundary between Yard 6 and Yard 10 are still present in the 1977 photo. The smaller of the two areas of irregularly shaped ponded water, east of Tank 6008 in the northeast portion of the yard, is still present. The larger of the two areas is no longer present; however, its former location is readily apparent in the 1977 photo.

Yard 8

In the 1977 air photo, the building located along the southern yard boundary is still present and appears to have been expanded north and west of the old washroom building. Sixteen ASTs are visible. These ASTs include eleven along the northern yard boundary and five along the north side of the building. One of these five tanks near the building is horizontally oriented.

The remainder of the yard remains vacant. The aboveground pipeline in the center of the yard is still visible in the 1977 photo.

Yard 9

In the 1977 photo, a sorbent boom is visible in the pond with floating product on the water present behind it. One discharge into the pond from the IMTT side is apparent. The building of the earth dam, separating the pond from the canal, appears to have begun in this photo. Floating product appears to be backed up behind the baffle or dam located just south of the bend on the canal. No discharges from either the IMTT or Exxon sides of the canal and pond are visible on the 1977 photo.

Yard 10

Very few changes occurred between 1970 and 1977. The central and east portions of the yard remain vacant. The containers present in the east portion of the yard in the 1963 photo are no longer present in the 1977 photo. The two buildings in the northwest corner, and the carpenter shop and plate shop buildings in the southwest portion of the yard are still present. The area north of the carpenter shop building appears to have some storage for piping and trucks.

2.6.7 1984

Yard 1

Fifty-one ASTs were identified in the 1984 aerial photograph, with 40 of these ASTs remaining on site today. One horizontally oriented AST was added next to Tanks 1122 and 1123, and two ASTs were removed south of Tank 1700. The building previously identified as a pump house with two adjoining manifolds, located southwest of Tanks 1066 and 1102 is no longer present. There is no standing water evident anywhere in Yard 1. The White Chemical operation appears to have ceased and all drums, containers and other matter present in the 1970 and 1977 photographs are no longer evident.

Yard 2

Ninety-one ASTs were identified in the 1984 photograph. Seventy-five of these tanks remain in Yard 2 today.

Between 1977 and 1984, several aboveground pipelines appear to have been installed. However, it may be that existing pipelines were painted white making them more readily visible in the aerial photo. During this time period, two buildings and three ASTs were removed. The buildings that were removed include the boiler house that was located south of the main building and part of the boiler house/power station/turbo alternator building complex. The power station and turbo alternator buildings remain. The second building that was removed was the six pump station located adjacent to the compound building and the coal pier. The three ASTs removed were located west of the boiler house.

Yard 3

One notable change occurred in Yard 3 between 1977 and 1984. This was the presence of a surface impoundment in the central portion of the site. This surface

impoundment is present at the site today. In the 1984 aerial photograph, 64 ASTs were identified, all of which still exist today.

From 1977 to 1984, six ASTs were removed from near the southern yard boundary to make room for the new surface impoundment. The surface impoundment is associated with the current wastewater treatment system. One building east of the Chiller Building is no longer present. Additional aboveground piping was installed throughout Yard 3. The remainder of Yard 3 remains unchanged between 1977 and 1984.

Yard 4

Changes occurred between 1977 and 1984. No tanks were identified in Yard 4 in the 1984 aerial photo; one building which currently serves as the main gatehouse was identified. Heavy vegetation is visible in the southwest portion of the yard, in the former operational area.

From 1977 to 1984, six buildings were removed from Yard 4. These include two buildings along the eastern boundary, two buildings along the northern boundary, and two buildings along the southern boundary. All structures located near the northeastern corner were also removed. The separator in the northwest corner is no longer present, and all piping and walls separating the former tanks in the northwest portion of Yard 4 are no longer present. A train yard is still present in the eastern portion of the yard, but its size is substantially reduced.

Two buildings along the northern boundary and two buildings along the southern boundary are no longer present. All structures located near the northeastern corner were also removed. The separator in the northwest corner is no longer present, and all piping and walls separating the former tanks in the northwest portion of Yard 4 are no longer present. A train yard is still present in the eastern portion of the yard, but its size is substantially reduced.

Yard 5

In the 1984 aerial photograph, thirty-four ASTs were identified. However, no buildings were identified. The surface impoundment in the northwest corner of the yard appears slightly smaller than in 1977 and piping is no longer visible in the area. The two former tank locations south of the impoundment that contained standing water previously are no longer present. The surface impoundment area appears to have been recently graded. An area along the south side of the cemetery has visible standing water.

Between 1977 and 1984, two buildings were removed. These included the Crude Oil Manifold in the southwest corner of the yard and the Pump House in the southeast corner of the yard. The operational area in the southeast corner no longer appears to be present.

Yard 6

In the 1984 aerial photograph, seventeen ASTs are present and still exist today. Five buildings are also present in the 1984 photo. The small building north of the garage is no longer present, nor is the storage area between the foam building and garage. A small area of ponded water has reappeared in the northeast corner of the yard, at the same location of the larger area of ponded water identified in the 1970 photo.

The three rectangular shaped areas of ponded water along the Yard 6 and 10 boundaries are no longer present, nor is the small irregular shaped area. The entire northeast corner of the yard has been generally cleaned and appears to have been recently graded. Aboveground piping is readily visible in this photo, most likely due to them being painted white between 1977 and 1984. New aboveground piping appears to have been installed outside of the east concrete dike wall around Tanks 6008 and 6009. New aboveground piping appears to have been installed on the west side of Tanks 6205 and 6206, extending in a southeasterly direction parallel to the shoreline for several hundred feet, then heading northeast to the area of the saltwater building.

The fill area by the pier and west shoreline is heavily vegetated and the pier itself is deteriorated.

Yard 8

In the 1984 aerial photo, the large building identified previously along the southern border of the yard is still present. In addition a new medium sized building has been erected approximately 200 feet east of the existing building. Both of these buildings exist on site today. Also visible in the photo are seventeen ASTs. Fairly heavily vegetated areas are readily apparent east and north of the large building.

Also between 1977 and 1984, one AST along the northern yard boundary was removed and two ASTs, one on the north side of the larger building and one horizontally oriented AST near the southeast corner, were erected.

Yard 9

In the 1984 photo, the earth dam appears to have been completed and no discharges or sorbent booms are visible in this photo. A pipeline has been installed over the dam or baffle which is located south of the bend in the creek. This pipeline appears to extend from the IMTT property to the Exxon property. The existing aboveground pipeline that runs along the west bank of the canal now goes over the newly constructed earth dam separating the pond and canal, and extends into Yard 3.

Yard 10

One notable change in Yard 10 appears to have occurred between 1977 and 1984. This includes removal of the Plate Shop building no longer present in the 1984 photograph. The Plate Shop building is believed to have been the location of the Southern California Chemical tenant. The Carpenter Shop building and the Wash and

Locker room building in the northeast corner of the yard are still present. The remainder of the yard remains vacant with remnants of aboveground piping and building foundations still present.

2.6.8 1989

Yard 1

Forty-four ASTs are present in Yard 1. Seven ASTs north of Tank 1700, and one tank south of Tank 1102 were removed at sometime between 1984 and 1989. The same buildings identified in 1984 were also present in the 1989 aerial photograph.

Yard 2

Approximately 89 ASTs were present in the 1989 aerial photograph. Today, seventy-five of the eighty-nine ASTs can be identified. Additionally, eight of the buildings present in the photograph remain today.

In the five-year period between 1984 and 1989, four tanks adjacent to Platty Kill Canal and four tanks north of the Compound Building were removed. One building west of Tank 2142 was removed. Also during this period, the existing Hot Oil House near the center of the yard was erected.

Yard 3

Sixty-four ASTs were present in the 1989 aerial photograph; these ASTs are still present in Yard 3 today. Also identified in the photo were ten buildings. The buildings identified appear to be the same buildings identified in the 1984 photo. Additional piping in Yard 3 is also visible in the 1989 photo.

Yard 4

The 1989 aerial photograph shows that no tanks and three buildings were present. Several railroad tracks located along the eastern yard boundary were also identified.

During the five years between 1984 and 1989, one building currently identified as the small boiler house was constructed along the eastern border. Another was erected in the southeastern corner of the yard. Several aboveground pipelines were added.

Yard 5

In the 1989 aerial photograph, thirty-four ASTs and one building were identified. The surface impoundment in the northeastern corner of the yard appears smaller than in 1984. Standing water is visible in the area adjacent to the cemetery and more tank piping is visible throughout the yard in the 1989 photo.

Between 1984 and 1989, piping which was present near the southeastern corner was removed and a series of pipes were installed south of Tank 5211. One tank in the southeastern yard corner was removed and one building north of Tank 5059 near the southwest corner was built. All existing ASTs in Yard 5 were installed during or prior to 1947.

Yard 6

The 17 AST's identified in the 1989 aerial photograph are the same ASTs that exist today. Also identified in the 1989 photo are three buildings which remain today as well. One storage area, including possible drums, can be seen in the northeastern corner of Yard 6.

Between 1984 and 1989, one building east of Tank 6204 was removed. During this time, a pier was built on the Kill van Kull at the southwestern corner of the site and additional tank piping was installed throughout Yard 6.

Yard 8

Twenty ASTs and two buildings were identified in the 1989 aerial photograph. Four of these ASTs still exist in Yard 8 today; they are located along the north side of the larger site building. One horizontal AST is located near the southeast corner of the same building. The two buildings are the same as those identified in 1984.

Between 1984 and 1989, six ASTs were added along the northern yard boundary and three ASTs were removed from the north side of the larger building.

Yard 9

One sorbent boom is visible in the 1989 aerial photo. This boom is located at the southern end of the creek. No discharges are visible in the 1989 photo. A dock is visible on the IMTT (west) side near the southern end of the creek.

Yard 10

Notable changes also occurred in Yard 10 between 1984 and 1989, the majority of which includes the construction of the co-generation plant that is on-site today. In the 1989 air photo, Yard 10 appears as it does today. Ten ASTs and seven buildings are present, four of the existing buildings are located near the center of the yard. The remainder is located within the southwest, northeast, and southeast corners of the yard. The plant area located in Yard 10 appears to be paved.

Between 1984 and 1989, two buildings were removed, one from the northeast corner and one along the western boundary.

2.7 Historic USGS Topographic Maps

Historical topographic maps were obtained of the area for year 1900, 1905, 1947, 1955, 1967, and 1981. Two significant observations can be made from a review of the historical topographic maps. One is the depiction of the creation of Constable Hook as a landmass. The other is the area is shown as an industrialized area since 1900.

A summary of the observations made from the historical topographic maps is summarized below and copies of the maps are provided in Appendix B.

2.7.1 1900

The earliest available topographic maps include the Staten Island Quadrangle with a scale of 1:62,500 and the Passaic Quadrangle with a scale of 1:125,000.

In 1900, the area of Bayonne known as Constable Hook is connected to the main area of Bayonne by narrow strips of land. ASTs are shown on Constable Hook and the area is connected to Bayonne main land through a series of railroads.

The Platty Kill Creek is shown dissecting Constable Hook, connecting the Kill Van Kull with the backwaters of Constable Hook. Some development and aboveground storage tanks are shown east and north of Platty Kill Creek. Piers are shown on the south side of Constable Hook.

2.7.2 1905

The 1905 Passaic Quadrangle with a scale of 1:125,000 shows little difference between 1900 and 1905.

2.7.3 1947

The 1947 Jersey City Quadrangle with a scale of 1:25,000 shows significant filling has occurred on Constable Hook. The backwaters between Constable Hook and Bayonne main land has been filled and developed. Platty Kill Creek is shown as ending on the West Side in Platty Kill Pond.

The development of the West Side, Packards, Curries, Chem South, and Chem North are all shown on the map. Packards is shown having more aboveground storage tanks than is present at the site today.

2.7.4 1955

The 1955 Jersey City Quadrangle with a scale of 1:24,000 shows filling has continued on Constable Hook and surrounding areas. The number of aboveground storage tanks has increased and the expansion of a railroad system has occurred. The New Jersey Turnpike Interchange 14A is shown on the map.

2.7.5 1967

The 1967 Jersey City Quadrangle with a scale of 1:24,000 filling has continued in the northern section of Constable Hook. Some changes have occurred in the number of tanks but the area is still highly industrialized.

2.7.6 1981

The photo revised Jersey City Quadrangle with a scale of 1:24,000 shows the area north of the Conrail Railroad as being developed. Minor changes to the number of tanks and buildings are shown on the West Side, Chem South, and Chem North.

3.0 HAZARDOUS SUBSTANCE/WASTE INVENTORY

Information regarding hazardous substances handled at the IMTT properties was compiled from community right-to-know documents obtained from IMTT personnel and from interviews conducted with site personnel. The hazardous substance inventory listed in **Tables 2 and 3** was created from 2003 and 2004 right-to-know documents with the assumption that similar products and quantities are currently stored within the Terminal boundaries.

3.1 Hazardous Substances

A list of the known chemicals that have been associated with the IMTT operations is provided in **Tables 2 and 3**. Given the lengthy operating history and variety of operators prior to IMTT, it is not possible to accurately report all the materials ever stored/handled at the Site. Based on the site operations history, however, the primary products previously stored at the facility are expected to be similar to those most recently handled, which are listed in **Tables 2 and 3**.

Bulk quantities of hazardous substances are stored in aboveground storage tanks. Product distribution to and from the Site occurs at a series of loading and unloading areas (pipeline, marine docks, rail racks, and truck racks). Various pump stations and the aboveground piping facilitates product movement throughout the Site.

The facility maintains storage of up to and greater than 10 million pounds of hazardous product within the Terminal. There are approximately 230 variations of liquid hazardous products currently stored on site.

Hazardous material storage areas are discussed in Section 5.2.1 Storage Pads and Section 5.2.4 Chemical Storage Cabinets/Closets. Satellite accumulation areas are discussed in Section 5.1.5 Loading and Unloading Areas.

3.2 Hazardous Waste

Based on available information, a list potentially hazardous waste products was generated for the Site. The listing is based on recent information but is believed to be representative of older periods of operation given that similar operations were being conducted at the Site.

Potentially hazardous wastes generated at the Site include the following:

- Tank bottoms
- Laboratory samples
- Off-specification product
- Recovered product
- Impacted soil and sediment
- Used oil, lubricants, rags, absorbents, etc.

Non-hazardous waste generated at the Site includes dry refuse.

Hazardous waste storage locations are discussed in Section 5.5.2. Currently, the primary wastes on-site are derived from environmental remediation activities. According to facility personnel, all wastes are properly disposed of at off-site facilities.

4.0 WASTEWATER DISCHARGES

Sanitary waste at the West Side facility is stored in septic holding tanks and is discussed in Section 5.3.8 Septic Systems Leachfields or Seepage Pits of this report.

Storm water generated at the West Side facility is routed to an on-site treatment plant through a series of catch basins and underground piping. The treatment plant and piping is discussed in Section 5.3.5 Storm Sewer Collection System of this report.

There are no other wastewater discharges at the West Side facility.

5.0 POTENTIAL AREAS OF CONCERN

A review of current and historic operations was conducted to determine potential areas of concern. The potential AOCs are presented following the NJDEP Preliminary Assessment Report format.

5.1 Bulk Storage Tanks and Appurtenances (PA Form Question A)

5.1.1 Aboveground Storage Tanks and Associated Piping (PA Form Question A1)

5.1.1.1 AOC-W-001: Round House Tank

5.1.1.1.1 General Information

An aboveground storage tank is positioned inside of the Round House Building that is located on the west side of Yard 1. The tank contains 425 gallons of diesel fuel that is used for railcar engines. The location of the tank is shown on **Figure 12**.

5.1.1.1.2 Maintenance and Integrity History

Bluestone personnel inspected the tank on March 31, 2005. It was contained with a metal secondary containment system and no staining was observed in the area around the tank.

5.1.1.2 AOC-W-002: Tank 1011

5.1.1.2.1 General Information

Tank 1011 was placed in service in 1919 and has a capacity of approximately 440,000 gallons. Historically the tank reportedly contained either kerosene or No. 2 fuel oil. The tank currently contains kerosene. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or

7,480,500 gallons. The tank location, on the eastern central side of Yard 1, is shown on **Figure 12**.

5.1.1.2.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the American Petroleum Institute (API) 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.3 AOC-W-003: Tank 1012

5.1.1.3.1 General Information

Tank 1012 was also placed in service in 1919 and has a capacity of approximately 282,000 gallons. Historically the tank reportedly contained either kerosene or No. 2 fuel oil. The tank currently contains kerosene. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank location, on the eastern central side of Yard 1, is shown on **Figure 12**.

5.1.1.3.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of API 653. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.4 AOC-W-004: Tank 1013

5.1.1.4.1 General Information

Tank 1013 was demolished between 2001 and 2004. This tank was placed in service in 1919 and had a capacity of approximately 282,000 gallons. During its service, the tank reportedly contained No. 6 fuel oil, or off-specification No. 6 fuel oil. The tank was formerly located on the eastern central side of Yard 1 and is shown on **Figure 12**.

5.1.1.4.2 Maintenance and Integrity History

Prior to being demolished, the last external visual inspection of the tank was on May 18, 1999. The last ultrasonic tank shell thickness measurement was taken on May 18, 1999 following the principles of the API 653 guidelines.

On May 14, 1996, approximately 50 gallons of off-spec oil was released from AST 1013. Details of this release are provided in Section 5.4.1 of this report.

5.1.1.5 AOC-W-005: Tank 1022

5.1.1.5.1 General Information

Tank 1022 was placed in service in 1909 and has a capacity of approximately 329,000 gallons. Historically, sewer water, storm water, and off-specification No. 2 and No. 6 oils were contained in this tank. The tank is currently empty. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. Tank 1022 is located on the eastern side of Yard 1 and is shown on **Figure 12**.

5.1.1.5.2 Maintenance and Integrity History

Tank 1022 is currently out of service and requires an internal inspection and high-level alarms to be installed prior to activation. The last external visual inspection of the tank was on May 18, 1999. The last ultrasonic tank shell thickness measurement was taken on May 18, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1999.

On February 1, 2002, a release from Tank 1022 occurred. Approximately two to five gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.6 AOC-W-006: Tank 1034

5.1.1.6.1 General Information

Tank 1034 was placed in service in 2001 and has a capacity of approximately 853,000 gallons. The tank currently contains N-Heptanoic acid. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is

1,000,000 cubic feet or 7,480,500 gallons. Tank 1034 is located at the southeast edge of Yard 1 and is shown on **Figure 12**.

5.1.1.6.2 Maintenance and Integrity History

Tank 1034's last external visual inspection, ultrasonic tank shell thickness measurement, and internal inspection were on February 1, 2001. The shell thickness measurement was taken following the principles of the API 653 guidelines. No tank integrity issues have been reported.

5.1.1.7 AOC-W-007: Tank 1038

5.1.1.7.1 General Information

Tank 1038 was placed in service in 1919 and has a capacity of approximately 329,000 gallons. Historically the tank reportedly contained either kerosene or No. 2 fuel oil. The tank currently contains jet kerosene. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank location, on the eastern central side of Yard 1, is shown on **Figure 12**.

5.1.1.7.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.8 AOC-W-008: Tank 1058

5.1.1.8.1 General Information

Tank 1058 was placed in service in 1922 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained either No. 2 fuel oil or marine cutter oil. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is centrally located in Yard 1 and is shown on **Figure 12**.

5.1.1.8.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API

653 guidelines. The last internal tank inspection was July 1, 1991. Both audible and visual high level alarms are installed on this tank.

On June 23, 1990, a release from Tank 1058 occurred. Approximately 25 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.9 AOC-W-009: Tank 1066

5.1.1.9.1 General Information

Tank 1066 was placed in service in 1912 and has a capacity of approximately 592,000 gallons. Historically the tank reportedly contained boiler house fuel, off-specification No. 6 fuel oil, and No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southeast section of Yard 1 and is shown on **Figure 12**.

5.1.1.9.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on March 15, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was June 6, 2001 when a new floor was installed. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.10 AOC-W-010: Tank 1102

5.1.1.10.1 General Information

Tank 1102 was placed in service in 1919 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained either off-specification No. 6 fuel oil or No. 6 fuel oil. The tank is currently empty. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the southeastern edge of Yard 1 and is shown on **Figure 12**.

5.1.1.10.2 Maintenance and Integrity History

This tank is out of service and requires the installation of high-level alarms prior to activation. No maintenance or integrity history is available, however, no tank integrity issues have been reported.

5.1.1.11 AOC-W-011: Tank 1104

5.1.1.11.1 General Information

Tank 1104 was placed in service in 1919 and has a capacity of approximately 719,000 gallons. Historically the tank reportedly contained kerosene or No. 2 fuel oil. The tank currently contains kerosene or LSO. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the eastern central side of Yard 1 and is shown on **Figure 12**

5.1.1.11.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.12 AOC-W-012: Tank 1105

5.1.1.12.1 General Information

Tank 1105 was placed in service in 1919 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained kerosene, marine gas oil, or No. 2 fuel oil. Kerosene, No. 6 fuel oil, or No. 2 fuel oil are currently stored in this tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the eastern central side of Yard 1 and is shown on **Figure 12.**

5.1.1.12.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 12, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was October 17, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.13 AOC-W-013: Tank 1106

5.1.1.13.1 General Information

Tank 1106 was placed in service in 1919 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained No. 4 and No. 6 fuel oils. No. 6 fuel oil is currently stored in this tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the eastern central side of Yard 1 and is shown on **Figure 12**.

5.1.1.13.2 Maintenance and Integrity History

The last external visual inspection of the tank was on January 7, 2002. The last ultrasonic tank shell thickness measurement was taken on January 7, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was October 19, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.14 AOC-W-014: Tank 1107

5.1.1.14.1 General Information

Tank 1107 was placed in service in 1919 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained No. 4 and No. 6 fuel oils. No. 6 fuel oil is currently stored in this tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the eastern central edge of Yard 1 and is shown on **Figure 12**.

5.1.1.14.2 Maintenance and Integrity History

The last external visual inspection of the tank was on January 7, 2002. The last ultrasonic tank shell thickness measurement was taken on January 7, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was October 19, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.15 AOC-W-015: Tank 1109

5.1.1.15.1 General Information

Tank 1109 was placed in service in 1919 and has a capacity of approximately 329,000 gallons. Historically the tank reportedly contained kerosene and No. 2 fuel oil. The tank

currently contains kerosene. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the eastern central portion of Yard 1 and is shown on **Figure 12**.

5.1.1.15.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.16 AOC-W-016: Tank 1110

5.1.1.16.1 General Information

Tank 1110 was placed in service in 1919 and has a capacity of approximately 329,000 gallons. Historically the tank reportedly contained kerosene and No. 2 fuel oil. The tank currently contains kerosene. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the eastern central portion of Yard 1 and is shown on **Figure 12**.

5.1.1.16.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.17 AOC-W-017: Tank 1119

5.1.1.17.1 General Information

Tank 1119 was placed in service in 1923 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained No. 2 fuel oil. The tank is currently empty. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the southwestern edge of Yard 1 and is shown on **Figure 12**.

5.1.1.17.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 15, 1999. The last ultrasonic tank shell thickness measurement was taken on March 24, 1997 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1997. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.18 AOC-W-018: Tank 1120

5.1.1.18.1 General Information

Tank 1120 was placed in service in 1923 and has a capacity of approximately 740,000 gallons. Historically the tank has contained acetone, gasoline, ethyl alcohol, mixed ester, and caustic soda. The tank currently contains caustic soda. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the southwestern edge of Yard 1 and is shown on **Figure 12.**

5.1.1.18.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 16, 2001. The last ultrasonic tank shell thickness measurement was taken on May 16, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was May 16, 2001. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.19 AOC-W-019: Tank 1121

5.1.1.19.1 General Information

Tank 1121 was placed in service in 1926 and has a capacity of approximately 846,000 gallons. Historically the tank has contained phenol, linear alcohol, and caustic soda. The tank currently contains caustic soda. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the southwestern edge of Yard 1 and is shown on **Figure 12.**

5.1.1.19.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 24, 2003. The last ultrasonic tank shell thickness measurement was taken on October 24, 2003 following the principles of the API 653 guidelines. The last internal tank inspection was October 24, 2003.

Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.20 AOC-W-020: Tank 1122

5.1.1.20.1 General Information

Tank 1122 was placed in service in 1929 and has a capacity of approximately 63,000 gallons. Historically the tank has contained marine cutter oil and lube oil. The tank currently contains lube oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.20.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on January 15, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was January 15, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.21 AOC-W-021: Tank 1123

5.1.1.21.1 General Information

Tank 1123 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank has contained marine cutter oil and No. 2 fuel oil. The tank is currently empty. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.21.2 Maintenance and Integrity History

Tank 1123 is currently out of service and requires the installation of high-level alarms prior to activation. The last external visual inspection of the tank was on April 15, 1999. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. No tank integrity issues have been reported.

5.1.1.22 AOC-W-022: Tank 1124

5.1.1.22.1 General Information

Tank 1124 was placed in service in 1931 and has a capacity of approximately 846,000 gallons. Historically the tank has contained phenol, SN100, No. 6 fuel oil, and caustic soda. The tank currently contains caustic soda. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the southwestern edge of Yard 1 and is shown on **Figure 12.**

5.1.1.22.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on August 26, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1996. Both audible and visual high level alarms are installed on this tank.

On August 1, 1994, a release from Tank 1124 occurred. Approximately 49,924 gallons of No. 2 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.23 AOC-W-023: Tank 1159

5.1.1.23.1 General Information

Tank 1159 was placed in service in 1926 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained No. 4 fuel oil, marine cutter oil, or No. 2 fuel oil. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is centrally located in Yard 1 and is shown on **Figure 12.**

5.1.1.23.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was March 1, 1991. Both audible and visual high level alarms are installed on this tank.

On June 21, 1992, a bleeder valve was left open on Tank 1159 and approximately 25 gallons of No. 2 fuel oil spilled into the dike area. IMTT personnel cleaned up the spilled material. No known soil sampling was conducted in the area of the spill.

5.1.1.24 AOC-W-024: Tank 1159

5.1.1.24.1 General Information

Tank 1161 was placed in service in 1926 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained marine cutter oil, or No. 2 fuel oil. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is centrally located in Yard 1 and is shown on **Figure 12**.

5.1.1.24.2 Maintenance and Integrity History

The last external visual inspection of the tank was on November 3, 2000. The last ultrasonic tank shell thickness measurement was taken on November 3, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was November 3, 2000. Both audible and visual high level alarms are installed on this tank.

5.1.1.25 AOC-W-025: Tank 1173

5.1.1.25.1 General Information

Tank 1173 was placed in service in 1926 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained either diesel or No. 2 fuel oil. The tank currently contains cutter oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the northern edge of Yard 1 and is shown on **Figure 12**.

5.1.1.25.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was April 24, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.26 AOC-W-026: Tank 1174

5.1.1.26.1 General Information

Tank 1174 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained No. 2 fuel oil. The tank currently contains cutter oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the northern edge of Yard 1 and is shown on **Figure 12**.

5.1.1.26.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 24, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was May 24, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.27 AOC-W-027: Tank 1175

5.1.1.27.1 General Information

Tank 1175 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained No. 4 or No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the northern edge of Yard 1 and is shown on **Figure 12**.

5.1.1.27.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on June 8, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was June 8, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.28 AOC-W-028: Tank 1176

5.1.1.28.1 General Information

Tank 1176 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained No. 4 or No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in the Yard 1 earthen dike with

concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the northern edge of Yard 1 and is shown on **Figure 12.**

5.1.1.28.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 23, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was May 23, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.29 AOC-W-029: Tank 1217

5.1.1.29.1 General Information

Tank 1217 was placed in service in 1936 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained either cutter oil or dibutyl phthalate, or was empty. The tank is currently reported as being in service as a recovery tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12.**

5.1.1.29.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 9, 2004. The last ultrasonic tank shell thickness measurement was taken on June 9, 2004 following the principles of the API 653 guidelines. The last internal tank inspection was June 9, 2004. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.30 AOC-W-030: Tank 1218

5.1.1.30.1 General Information

Tank 1217 was placed in service in 1936 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained either cutter oil or dibutyl phthalate, or was empty. The tank is currently reported as being in service as a recovery tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12.**

5.1.1.30.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 12, 2004. The last ultrasonic tank shell thickness measurement was taken on April 12, 2004 following the principles of the API 653 guidelines. The last internal tank inspection was April 12, 2004. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.31 AOC-W-031: Tank 1219

5.1.1.31.1 General Information

Tank 1219 was placed in service in 1936 and has a capacity of approximately 55,500 gallons. Historically the tank has contained cutter oil or isophorone or has been empty. The tank is currently empty. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.31.2 Maintenance and Integrity History

Tank 1219 is currently out of service and requires an internal inspection and high-level alarms to be installed prior to activation. The last external visual inspection of the tank was on April 15, 1999. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. No tank integrity issues have been reported.

5.1.1.32 AOC-W-032: Tank 1220

5.1.1.32.1 General Information

Tank 1220 was placed in service in 1936 and has a capacity of approximately 63,000 gallons. Historically the tank has contained cutter oil or isophorone or has been empty. The tank is currently empty. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.32.2 Maintenance and Integrity History

Tank 1220 is currently out of service and requires an internal inspection and high-level alarms to be installed prior to activation. The last external visual inspection of the tank was on April 15, 1999. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. No tank integrity issues have been reported.

5.1.1.33 AOC-W-033: Tank 1700

5.1.1.33.1 General Information

Tank 1700 was placed in service in 1958 and has a capacity of approximately 6,345,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. No. 6 fuel oil is currently stored in the tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the central southern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.33.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 13, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1993. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.34 AOC-W-034: Tank 1701

5.1.1.34.1 General Information

Tank 1701 was placed in service in 1962 and has a capacity of approximately 6,345,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. No. 6 fuel oil is currently stored in the tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the northeastern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.34.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1990. Both audible and visual high level alarms are installed on this tank.

On December 25, 1989, a release from Tank 1701 occurred. Approximately 504,000 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

On December 15, 1989, a release from Tank 1701 occurred. Approximately 1,050,000 gallons of No. 6 fuel oil was released. No known soil sampling was conducted in the area of the

spill at that time. This release was reported to the NJDEP. The location of the release and a summary is included in Section 5.4.1 Areas of Discharge of this report.

ENSR conducted a soil investigation of the Tank 1701 area in April 1995 (ENSR November 1996). Six soil samples were collected from around Tank 1701. TPH concentrations exceeding the 10,000 mg/kg criteria were detected in two of the six samples (30,300 and 13,500 mg/kg). All PAH concentrations detected were below their respective criteria. No further investigation activities were performed in this area.

5.1.1.35 AOC-W-035: Tank 1702

5.1.1.35.1 General Information

Tank 1702 was placed in service in 1963 and has a capacity of approximately 2,545,000 gallons. Historically the tank reportedly contained No. 2 fuel oil, No. 6 fuel oil or asphalt. Asphalt is currently stored in the tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the western edge of Yard 1 and is shown on **Figure 12**.

5.1.1.35.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was June 13, 2000. Both audible and visual high level alarms are installed on this tank.

On September 22, 1991, a release from Tank 1702 occurred. Approximately 100 gallons of No. 6 fuel oil was released when a hi-line flange gasket failed. IMTT personnel cleaned up the spill. No known soil sampling was conducted in the area of the spill at that time.

On July 6, 2000, a release from Tank 1702 occurred. An unknown volume of hot oil and asphalt was released. The location of this release and detail summary is included in Section 5.4.1 Areas of Discharge of this report.

ENSR investigated the area in April 1995 (ENSR November 1996). Six soil samples were collected around Tank 1702 and analyzed for TPH and PAH compounds. One sample

exceeded the 10,000 ppm TPH level (12,300 ppm). All PAH compounds detected were below their respective NJIGWSC. Benzo(a)anthracene and benzo(a)pyrene were detected at concentrations above their respective NJNRSCC at two of the six locations.

5.1.1.36 AOC-W-036: Tank 1703

5.1.1.36.1 General Information

Tank 1703 was placed in service in 1963 and has a capacity of approximately 2,599,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. No. 6 fuel oil is currently stored in the tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the western edge of Yard 1 and is shown on **Figure 12**.

5.1.1.36.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 8, 2004. The last ultrasonic tank shell thickness measurement was taken on May 13, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1989. Both audible and visual high level alarms are installed on this tank.

On September 5, 1989, a release from Tank 1703 occurred. Approximately 1,000 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.37 AOC-W-037: Tank 1704

5.1.1.37.1 General Information

Tank 1704 was placed in service in 1963 and has a capacity of approximately 2,599,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or asphalt. Asphalt is currently stored in the tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the western edge of Yard 1 and is shown on **Figure 12**.

5.1.1.37.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 27, 2004. The last ultrasonic tank shell thickness measurement was taken on May 27, 2004 following the principles of the API

653 guidelines. The last internal tank inspection was May 27, 2004. Both audible and visual high level alarms are installed on this tank.

On March 29, 1990, approximately 420 gallons of No. 6 fuel oil was released from Tank 1704 due to a blown hose on the pump during a tank-to-tank transfer. Details of this release are provided in Section 5.4.1 of this report.

5.1.1.38 AOC-W-038: Tank 1705

5.1.1.38.1 General Information

Tank 1705 was placed in service in 1963 and has a capacity of approximately 1,000,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or cutter oil. No. 6 fuel oil is currently stored in the tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.38.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 3, 2004. The last ultrasonic tank shell thickness measurement was taken on October 16, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1996. Both audible and visual high level alarms are installed on this tank.

On October 25, 1995, a release from Tank 1705 occurred. Approximately 1,500 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge in this report.

On November 21, 196, approximately 126 gallons of No. 6 fuel oil was released from a loose pipeline flange associated with AST 1705. Details of this release are provided in Section 5.4.1 of this report.

5.1.1.39 AOC-W-039: Tank 1706

5.1.1.39.1 General Information

Tank 1706 was placed in service in 1963 and has a capacity of approximately 1,000,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or Caustic Soda. Caustic Soda

is currently stored in the tank. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southern portion of Yard 1 and is shown on **Figure 12.**

5.1.1.39.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 3, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1996. Both audible and visual high level alarms are installed on this tank.

On November 28, 1993, a release from Tank 1706 occurred. An unknown volume of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

On September 15, 2004, a release from the pump associated with Tank 1706 occurred. Approximately 5 gallons of sodium hydroxide was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.40 AOC-W-040: Tank 1707

5.1.1.40.1 General Information

Tank 1707 was placed in service in 1963 and has a capacity of approximately 1,000,000 gallons. Historically the tank reportedly contained either No. 4 fuel oil or No. 6 fuel oil. The tank currently contains cutter oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southwestern portion of Yard 1 and is shown on **Figure 12.**

5.1.1.40.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 17, 2003. The last ultrasonic tank shell thickness measurement was taken on October 17, 2003 following the principles of the API 653 guidelines. The last internal tank inspection was October 17, 2003. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.41 AOC-W-041: Tank 1708

5.1.1.41.1 General Information

Tank 1708 was placed in service in 1963 and has a capacity of approximately 1,000,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains either No. 6 fuel oil or MDO. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southwestern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.41.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 3, 2004. The last ultrasonic tank shell thickness measurement was taken on May 13, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1993. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.42 AOC-W-042: Tank 1709

5.1.1.42.1 General Information

Tank 1709 was placed in service in 1963 and has a capacity of approximately 1,000,000 gallons. Historically the tank reportedly contained No. 2 fuel oil, MDO, No. 4 fuel oil, or diesel. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located in the southwestern portion of Yard 1 and is shown on **Figure 12**.

5.1.1.42.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 3, 2004. The last ultrasonic tank shell thickness measurement was taken on May 6, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.43 AOC-W-043: Tank 1710

5.1.1.43.1 General Information

Tank 1710 was placed in service in 1963 and has a capacity of approximately 1,000,000 gallons. Historically the tank reportedly contained di-isobutylene. The tank currently contains di-isobutylene. Secondary containment for this tank is in the Yard 1 earthen dike with concrete walls. The available capacity of the Yard 1 dike is 1,000,000 cubic feet or 7,480,500 gallons. The tank is located on the western edge of Yard 1 and is shown on **Figure 12**.

5.1.1.43.2 Maintenance and Integrity History

The last external visual inspection of the tank was on September 25, 2002. The last ultrasonic tank shell thickness measurement was taken on September 25, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was September 25, 2002. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.44 AOC-W-044: Tank 2013

5.1.1.44.1 General Information

Tank 2013 was demolished on before 2001. This tank was placed in service in 1910. No capacity or historical content information is available. The tank was formerly located in the Yard 2, shown on **Figure 12**.

5.1.1.44.2 Maintenance and Integrity History

No maintenance or integrity history is available, however, no tank integrity issues were found.

5.1.1.45 AOC-W-045: Tank 2026

5.1.1.45.1 General Information

Tank 2026 was placed in service in 1917. This tank has a horizontal orientation and historically contained TINTM (1,2,4-Benzenetricarboxylic acid, tri-Isonoyl ester), TOTM (tri-2-Ethylhexyl Trimellitate), DOP (1,2-benzenedicarboxylic acid, bis(2-Ethylhexyl)ester), or L-11PE. The tank currently contains L-11PE. The tank is located on the northern edge of Yard 2 and is shown on **Figure 12**.

5.1.1.45.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on December 9, 1993 following the principles of the API 653 guidelines. Internal tank inspections are not required for this horizontal tank. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.46 AOC-W-046: Tank 2027

5.1.1.46.1 General Information

Tank 2027 was placed in service in 1917. This tank has a horizontal orientation and historically contained TOTM or DOP. The tank currently contains TOTM. The tank is located on the northern edge of Yard 2 and is shown on **Figure 12**.

5.1.1.46.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 28, 2994 following the principles of the API 653 guidelines. Internal tank inspections are not required for this horizontal tank. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.47 AOC-W-047: Tank 2028

5.1.1.47.1 General Information

Tank 2028 was placed in service in 1917. This tank has a horizontal orientation and historically contained TINTM, TOTM, DOP, or L-11PE. The tank currently contains L-11PE. The tank is located on the northern edge of Yard 2 and is shown on **Figure 12**.

5.1.1.47.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on July 28, 2994 following the principles of the API 653 guidelines. Internal tank inspections are not required for this horizontal tank. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.48 AOC-W-048: Tank 2091

5.1.1.48.1 General Information

Tank 2091 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DHP (1,2-Benzenedicarboxylic acid, di-hexyl ester BR and LIN). DHP is currently stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.48.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on January 7, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was January 7, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.49 AOC-W-049: Tank 2092

5.1.1.49.1 General Information

Tank 2092 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DHP. DHP is currently stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.49.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on March 17, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was March 17, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.50 AOC-W-050: Tank 2093

5.1.1.50.1 General Information

Tank 2093 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DHP or L-911P. L-911P is currently stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete

walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.50.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on November 16, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was November 16, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.51 AOC-W-051: Tank 2094

5.1.1.51.1 General Information

Tank 2094 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DUP (1,2-Benzenedicarboxylic acid, di-Undecyl ester) or TINTM. TINTM is currently stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.51.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on October 16, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was October 16, 1998. Both audible and visual high level alarms are installed on this tank.

On December 26, 1990, a release from Tank 2094 occurred. Approximately 30 gallons of TITM was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.52 AOC-W-052: Tank 2095

5.1.1.52.1 General Information

Tank 2095 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DUP or TINTM. TINTM is currently stored

in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.52.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 28, 2002. The last ultrasonic tank shell thickness measurement was taken on May 28, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was May 28, 2002. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.53 AOC-W-053: Tank 2096

5.1.1.53.1 General Information

Tank 2096 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DIDP. DIDP is currently stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.53.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 12, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was April 12, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.54 AOC-W-054: Tank 2097

5.1.1.54.1 General Information

Tank 2097 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DIDP. DIDP is currently stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.54.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 12, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was April 12, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.55 AOC-W-055: Tank 2098

5.1.1.55.1 General Information

Tank 2098 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DIDP or JAYFLEX-77, also known as DIHP (1,2-Benzenedicarboxylic acid, di-c6-8 KR Alkyl ester). JAYFLEX-77 is currently stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.55.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 12, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was April 12, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.56 AOC-W-056: Tank 2099

5.1.1.56.1 General Information

Tank 2099 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DOA (hexanedioic acid, (2-Ethylhexyl)ester) JAYFLEX-7911 (d1-(Heptyl, Nonyl, Undecyl)Phthalate), JAYFLEX-L9PE, Mixed ester, or DIDP. The tank currently contains DIDP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.56.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on March 19, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was March 19, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.57 AOC-W-057: Tank 2101

5.1.1.57.1 General Information

Tank 2101 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DTDP (1,2-benzenedicarboxylic acid, di-c11-14 Br Alkyl ester). The tank currently contains DTDP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.57.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on March 3, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was March 3, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.58 AOC-W-058: Tank 2102

5.1.1.58.1 General Information

Tank 2102 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX 210 (Distillate (PET) Hydrotreated Light Naphthenic). The tank currently contains DHP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.58.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on August 19, 1998 following the principles of the

API 653 guidelines. The last internal tank inspection was August 19, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.59 AOC-W-059: Tank 2103

5.1.1.59.1 General Information

Tank 2103 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DTDP. The tank currently contains DTDP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.59.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 23, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was April 23, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.60 AOC-W-060: Tank 2104

5.1.1.60.1 General Information

Tank 2104 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-77, also known as DIHP, DIDP, or DIDP (I.O). The tank is currently empty and out of service. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.60.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 19, 1999. The last ultrasonic tank shell thickness measurement was taken on February 25, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was February 25, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.61 AOC-W-061: Tank 2105

5.1.1.61.1 General Information

Tank 2105 was placed in service in 1928 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-77, also known as DIHP or L-11P. The tank currently contains L-11P. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/western portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.61.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on September 22, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was September 22, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.62 AOC-W-062: Tank 2107

5.1.1.62.1 General Information

Tank 2107 was placed in service in 1928 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained Exxsol D-40 Solvent. The tank currently contains Exxsol D-40 Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.62.2 Maintenance and Integrity History

The last external visual inspection of the tank was on January 31, 2002. The last ultrasonic tank shell thickness measurement was taken on January 31, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was January 31, 2002. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.63 AOC-W-063: Tank 2108

5.1.1.63.1 General Information

Tank 2108 was placed in service in 1928 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained DUP and xylene. The tank currently contains xylene. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.63.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14 2004. The last ultrasonic tank shell thickness measurement was taken on December 26, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was December 26, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.63 AOC-W-064: Tank 2109

5.1.1.64.1 General Information

Tank 2109 was placed in service in 1935 and has a capacity of approximately 99,000 gallons. DINA (hexanedioic acid, di-iso-nonyl ester) reportedly is currently and was historically stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.64.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14 2004. The last ultrasonic tank shell thickness measurement was taken on December 8, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was December 8, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.65 AOC-W-065: Tank 2110

5.1.1.65.1 General Information

Tank 2110 was placed in service in 1929 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained Exxsol D-40 Solvent. The tank currently contains Exxsol D-40 Solvent. Secondary containment for this tank is in the Yard 2 earthen dike

with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.65.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on January 12, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.66 AOC-W-066: Tank 2111

5.1.1.66.1 General Information

Tank 2111 was placed in service in 1935 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained Aromatic 100 Solvent. The tank is currently empty and out of service. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.66.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 21, 1999. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.67 AOC-W-067: Tank 2112

5.1.1.67.1 General Information

Tank 2112 was placed in service in 1929 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained xylene. The tank is currently empty and out of service. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.67.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 21, 1999. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.68 AOC-W-068: Tank 2113

5.1.1.68.1 General Information

Tank 2113 was placed in service in 1935 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained Aromatic 100 Solvent. The tank is currently empty and out of service. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.68.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 21, 1999. The last ultrasonic tank shell thickness measurement was taken on January 10, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.69 AOC-W-069: Tank 2114

5.1.1.69.1 General Information

Tank 2114 was placed in service in 1935 and has a capacity of approximately 99,000 gallons. Varsol 1 reportedly is currently and was historically stored in the tank. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.69.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.70 AOC-W-070: Tank 2116

5.1.1.70.1 General Information

Tank 2116 was placed in service in 1936 and has a capacity of approximately 222,000 gallons. Historically the tank contained DIDPE (1,2-Benzenedicarboxylic acid, di-c9-11 Br Alkyl ester). The tank is currently empty. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.70.2 Maintenance and Integrity History

Tank 2116 is currently out of service and requires repairs prior to activation. The last external visual inspection of the tank was on November 18, 1999. The last ultrasonic tank shell thickness measurement was taken on November 18, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was November 18, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.71 AOC-W-071: Tank 2117

5.1.1.71.1 General Information

Tank 2117 was placed in service in 1929 and has a capacity of approximately 222,000 gallons. Historically the tank contained DUP and Isopar G Solvent. The tank currently contains Isopar G Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.71.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on December 15, 2994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.72 AOC-W-072: Tank 2118

5.1.1.72.1 General Information

Tank 2118 was placed in service in 1929 and has a capacity of approximately 222,000 gallons. Historically the tank contained Norpar 13 Solvent. The tank currently contains JAYFLEX-214. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the center of Yard 2 tank farm and is shown on **Figure 12.**

5.1.1.72.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on January 12, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.73 AOC-W-073: Tank 2119

5.1.1.73.1 General Information

Tank 2119 was placed in service in 1935 and has a capacity of approximately 222,000 gallons. Historically the tank contained methyl methacrylate and Exxsol D60 Solvent. The tank currently contains Exxsol D60 Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the southeastern side of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.73.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.74 AOC-W-074: Tank 2120

5.1.1.74.1 General Information

Tank 2120 was placed in service in 1935 and has a capacity of approximately 222,000 gallons. Historically the tank contained methyl methacrylate, NBMM, and Exxsol D-110 Solvent. The tank currently contains Exxsol D-110 Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the southeastern side of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.74.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 21, 1999. The last ultrasonic tank shell thickness measurement was taken on March 21, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.75 AOC-W-075: Tank 2121

5.1.1.75.1 General Information

Tank 2121 was placed in service in 1935 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-210, JAYFLEX-214, and Palatinol 11PE or DUP. The tank is currently empty and out of service. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western side of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.75.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 19, 1999. The last ultrasonic tank shell thickness measurement was taken on September 25, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was September 25, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.76 AOC-W-076: Tank 2122

5.1.1.76.1 General Information

Tank 2122 was placed in service in 1935 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-210, DTDP, and DIOP (1,2-Benzenedicarboxylic acid, di-iso-octyl ester). The tank is currently contains DIOP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western side of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.76.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on August 10, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was August 10, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.77 AOC-W-077: Tank 2123

5.1.1.77.1 General Information

Tank 2123 was placed in service in 1931 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-7911, TOTM, and DIDP. The tank is currently contains JAYFLEX-77, also known as DIHP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western side of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.77.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on September 25, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was September 25, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.78 AOC-W-078: Tank 2124

5.1.1.78.1 General Information

Tank 2124 was placed in service in 1931 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-7911 and TOTM. The tank is currently contains mixed ester PTA. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western side of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.78.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on May 26, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was May 26, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.79 AOC-W-079: Tank 2125

5.1.1.79.1 General Information

Tank 2125 was placed in service in 1931 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-7911, DINPE (1,2-Benzenedicarboxylic acid, di-c8-10 Br Alykl ester), and Mixed ester. The tank is currently empty and out of service. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western side of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.79.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 19, 1999. The last ultrasonic tank shell thickness measurement was taken on July 10, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was July 10, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.80 AOC-W-080: Tank 2126

5.1.1.80.1 General Information

Tank 2126 was placed in service in 1935 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-210, JAYFLEX-L9P, and DIDP. The tank currently contains JAYFLEX-77. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.80.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on September 25, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was September 25, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.81 AOC-W-081: Tank 2127

5.1.1.81.1 General Information

Tank 2127 was placed in service in 1935 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained DIOP. The tank currently contains DIOP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.81.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on September 27, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was September 27, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.82 AOC-W-082: Tank 2128

5.1.1.82.1 General Information

Tank 2128 was placed in service in 1931 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained miscellaneous plasticizer. The tank currently contains miscellaneous plasticizer. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.82.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 22, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was April 22, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.83 AOC-W-083: Tank 2129

5.1.1.83.1 General Information

Tank 2129 was placed in service in 1931 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained JAYFLEX-77 and DIDP. The tank currently contains JAYFLEX-77. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the western edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.83.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on September 25, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was September 25, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.84 AOC-W-084: Tank 2131

5.1.1.84.1 General Information

Tank 2131 was placed in service in 1936 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained naphtha. The tank currently contains SBA. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/southern portion of the Yard 2 tank farm and is shown on **Figure 12.**

5.1.1.84.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.85 AOC-W-085: Tank 2132

5.1.1.85.1 General Information

Tank 2132 was placed in service in 1936 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained 2429 Naphtha. The tank currently contains SBA. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/southern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.85.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.86 AOC-W-086: Tank 2133

5.1.1.86.1 General Information

Tank 2133 was placed in service in 1936 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained Exxsol D-80 Solvent. The tank currently contains Exxsol D-80 Solvent. Secondary containment for this tank is in the Yard 2 earthen dike

with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/southern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.86.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.87 AOC-W-087: Tank 2134

5.1.1.87.1 General Information

Tank 2134 was placed in service in 1936 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained Exxsol D-80 Solvent. The tank is currently empty and out of service. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/southern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.87.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 21, 1999. The last ultrasonic tank shell thickness measurement was taken on January 1, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.88 AOC-W-088: Tank 2135

5.1.1.88.1 General Information

Tank 2135 was placed in service in 1936 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained MIBK (4-Methyl-2-Pentanone) and Isopar M Solvent. The tank currently contains Isopar M Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/southern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.88.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.89 AOC-W-089: Tank 2136

5.1.1.89.1 General Information

Tank 2136 was placed in service in 1936 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained Isopar M Solvent. The tank currently contains Isopar M Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the central/southern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.89.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on January 25, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.90 AOC-W-090: Tank 2138

5.1.1.90.1 General Information

Tank 2138 was placed in service in 1953 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, Keystone C3 and C4, gasoline, MTBE, or Aromatic 150 Solvent. The tank currently contains Aromatic 150 Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the eastern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.90.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 3, 1995 following the principles of the API

653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank.

On July 9, 1986, at the northeast corner of Yard 2, approximately 9,000 barrels of gasoline overflowed from Tank 2138 and caught fire. Three other adjacent tanks (Tank 2139, 2140 and 2148) were also involved. Each of the tanks reportedly contained gasoline. The gasoline was contained within the diked area where it burned itself out. Following the spill, no samples are known to have been collected.

In April 1995, ENSR collected soil samples from around Tank 2138 to assess soil condition associated with this spill. Six soil samples were collected and analyzed for TPH, VOCs, and lead. TPH exceeding the 10,000 mg/kg criteria was detected in a sample at a concentration of 14,400 mg/kg. Benzene above the 1mg/kg criteria was detected in three of the six samples at concentrations of 1.7, 1.5, and 16 mg/kg. One sample had a total xylenes concentration of 180 mg/kg, which exceed the 10 mg/kg criteria. No further investigation was conducted in this area.

5.1.1.91 AOC-W-091: Tank 2139

5.1.1.91.1 General Information

Tank 2139 was placed in service in 1953 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, gasoline, MTBE, or Isopar L Solvent. The tank currently contains Isopar L Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the eastern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.91.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 3, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was April 3, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.92 AOC-W-092: Tank 2140

5.1.1.92.1 General Information

Tank 2140 was placed in service in 1953 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, gasoline, MTBE, or hexane. The tank currently contains hexane. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the eastern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.92.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 3, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was April 3, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.93 AOC-W-093: Tank 2141

5.1.1.93.1 General Information

Tank 2141 was placed in service in 1953 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained naphtha, ECA8583, Lubrizol, ECA11100, off-specification No. 6 oil, Parapol 950, or DINP (1,2-Benzenedicarboxylic acid, di-c8-10 Br Alkyl ester). The tank currently contains DINP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the northern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.93.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on September 25, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.94 AOC-W-094: Tank 2142

5.1.1.94.1 General Information

Tank 2142 was placed in service in 1935 and has a capacity of approximately 302,000 gallons. Historically the tank reportedly contained Crude di-isobutylene, refined di-isobutylene, and xylene. The tank currently contains DINP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the northwestern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.94.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on April 26, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.95 AOC-W-095: Tank 2143

5.1.1.95.1 General Information

Tank 2143 was placed in service in 1935 and has a capacity of approximately 302,000 gallons. Historically the tank reportedly contained DINP. The tank currently contains JAYFLEX L9P. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northwestern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.95.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on October 5, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was October 5, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.96 AOC-W-096: Tank 2144

5.1.1.96.1 General Information

Tank 2144 was placed in service in 1935 and has a capacity of approximately 302,000 gallons. Historically the tank reportedly contained DINP. The tank currently contains DINP.

Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northwestern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.96.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on May 18, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was May 18, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.97 AOC-W-097: Tank 2145

5.1.1.97.1 General Information

Tank 2145 was placed in service in 1936 and has a capacity of approximately 302,000 gallons. Historically the tank reportedly contained DINPE and JAYFLEX-77. The tank currently contains DIDP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.97.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on September 11, 1997 following the principles of the API 653 guidelines. The last internal tank inspection was September 11, 1997. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.98 AOC-W-098: Tank 2146

5.1.1.98.1 General Information

Tank 2146 was placed in service in 1936 and has a capacity of approximately 302,000 gallons. Historically the tank reportedly contained DINPE, JAYFLEX-7911, or JAYFLEX 1.9P. The tank currently contains DIDP. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.98.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on June 11, 1997 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1997. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.99 AOC-W-099: Tank 2147

5.1.1.99.1 General Information

Tank 2147 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, gasoline, No. 2 fuel oil, MTBE, or Isopar H Solvent. The tank currently contains Isopar H Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northeastern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.99.2 Maintenance and Integrity History

The last external visual inspection of the tank was on March 15, 2004. The last ultrasonic tank shell thickness measurement was taken on March 21, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.100 AOC-W-100: Tank 2148

5.1.1.100.1 General Information

Tank 2148 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, gasoline, MTBE, or Heptane Solvent. The tank currently contains Heptane Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the northeastern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.100.2 Maintenance and Integrity History

The last external visual inspection of the tank was on March 15, 2004. The last ultrasonic tank shell thickness measurement was taken on March 21, 1995 following the principles of the

API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.101 AOC-W-101: Tank 2149

5.1.1.101.1 General Information

Tank 2149 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained DIDPE. The tank currently contains DIDPE. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northeastern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.101.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on August 30, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was August 30, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.102 AOC-W-102: Tank 2150

5.1.1.102.1 General Information

Tank 2150 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, gasoline, No. 2 fuel oil, MTBE, or Varsol 1. The tank currently contains Varsol 1. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.102.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on March 21, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.103 AOC-W-103: Tank 2151

5.1.1.103.1 General Information

Tank 2151 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, gasoline, No. 2 fuel oil, MTBE, or xylene. The tank currently contains xylene. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.103.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on March 21, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.104 AOC-W-104: Tank 2152

5.1.1.104.1 General Information

Tank 2152 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained ECA 7550 (fuel oil additive), gasoline, MTBE, or toluene. The tank currently contains toluene. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the northern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.104.2 Maintenance and Integrity History

The last external visual inspection of the tank was on March 15, 2004. The last ultrasonic tank shell thickness measurement was taken on April 3, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.105 AOC-W-105: Tank 2153

5.1.1.105.1 General Information

Tank 2153 was placed in service in 1938 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, crude Di-isobutylene, refined Di-

isobutylene, or toluene. The tank currently contains heptene. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the northwestern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.105.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on May 10, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.106 AOC-W-106: Tank 2154

5.1.1.106.1 General Information

Tank 2154 was placed in service in 1954 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained methanol, gasoline, No. 2 fuel oil, refined di-isobutylene, or toluene. The tank currently contains toluene. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the northwestern portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.106.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on May 10, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.107 AOC-W-107: Tank 2155

5.1.1.107.1 General Information

Tank 2155 was placed in service in 1961 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained ECA7305 (fuel oil additive), gasoline, No. 2 fuel oil, refined Di-isobutylene, or Toluene. The tank currently contains Exxsol D-40. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the northeastern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.107.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on April 5, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was April 5, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.108 AOC-W-108: Tank 2156

5.1.1.108.1 General Information

Tank 2156 was placed in service in 1961 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained Paradyne, gasoline, No. 2 fuel oil, MTBE, or Exxsol D-40. The tank currently contains Gas/Aromatic 100 Solvent. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the northern edge of the Yard 2 tank farm and is shown on **Figure 12.**

5.1.1.108.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on March 21, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.109 AOC-W-109: Tank 2171

5.1.1.109.1 General Information

Tank 2171 was placed in service in 1938 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly empty. The tank is currently empty. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the southeastern edge of the Yard 2 tank farm and is shown on **Figure 12.**

5.1.1.109.2 Maintenance and Integrity History

Tank 2171 is currently out of service and requires the installation of high-level alarms prior to activation. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.110 AOC-W-110: Tank 2172

5.1.1.110.1 General Information

Tank 2172 was placed in service in 1938 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly empty. The tank is currently empty. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the southeastern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.110.2 Maintenance and Integrity History

Tank 2172 is currently out of service and requires the installation of high-level alarms prior to activation. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.111 AOC-W-111: Tank 2173

5.1.1.111.1 General Information

Tank 2173 was placed in service in 1938 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly empty or used for solvent recovery. The tank is currently used for solvent recovery. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located on the southeastern edge of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.111.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 14, 2004. The last ultrasonic tank shell thickness measurement was taken on June 26, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was June 26, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.112 AOC-W-112: Tank 2176

5.1.1.112.1 General Information

Tank 2176 was placed in service in 1938 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained MIBK or was used for vapor recovery. The tank is currently empty. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the southernmost portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.112.2 Maintenance and Integrity History

Tank 2176 is currently out of service and requires the installation of high-level alarms prior to activation. The last external visual inspection of the tank was on April 21, 1999. The last ultrasonic tank shell thickness measurement was taken on December 15, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was December 15, 1994. No tank integrity issues have been reported.

5.1.1.113 AOC-W-113: Tank 2177

5.1.1.113.1 General Information

Tank 2177 was placed in service in 1938 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly empty. The tank is currently empty. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the southernmost portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.113.2 Maintenance and Integrity History

Tank 2177 is currently out of service and requires the installation of high-level alarms prior to activation. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.114 AOC-W-114: Tank 2178

5.1.1.114.1 General Information

Tank 2178 was placed in service in 1938 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly empty. The tank is currently empty. Secondary

containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the southernmost portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.1.114.2 Maintenance and Integrity History

Tank 2178 is currently out of service and requires the installation of high-level alarms prior to activation. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.115 AOC-W-115: Tank 2179

5.1.1.115.1 General Information

Tank 2179 was placed in service in 1938 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly empty. The tank is currently empty. Secondary containment for this tank is in the Yard 2 earthen dike with poured concrete walls. The available capacity of the Yard 2 dike is 82,500 cubic feet or about 617,000 gallons. The tank is located in the southernmost portion of the Yard 2 tank farm and is shown on **Figure 12**.

5.1.1.115.2 Maintenance and Integrity History

Tank 2179 is currently out of service and requires the installation of high-level alarms prior to activation. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

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5.1.1.116 AOC-W-116: Tank 3105

5.1.1.116.1 General Information

Tank 3105 was placed in service in 1929 and has a capacity of approximately 106,000 gallons. Historically the tank reportedly contained Paraflow 501 (ECA7550-fuel oil additive) or was empty. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the northwestern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.116.2 Maintenance and Integrity History

Tank 3105 is currently out of service and requires inspection and/or repairs prior to activation. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on May 12, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was May 12, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.117 AOC-W-117: Tank 3106

5.1.1.117.1 General Information

Tank 3106 was placed in service in 1929 and has a capacity of approximately 106,000 gallons. Historically the tank reportedly contained Paraflow 501, ECA 7305 (fuel oil additive), Paraflow 525, Parabar 9229, or was empty. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the northwestern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.117.2 Maintenance and Integrity History

Tank 3106 is currently out of service and requires inspection and/or repairs prior to activation. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on May 25, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was May 25, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.118 AOC-W-118: Tank 3107

5.1.1.118.1 General Information

Tank 3107 was placed in service in 1929 and has a capacity of approximately 106,000 gallons. Historically the tank reportedly contained ECA 7305 (fuel oil additive), ECA 13058 (fuel oil additive), or secondary butyl alcohol. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about

294,000 gallons. The tank is located in the northwestern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.118.2 Maintenance and Integrity History

Tank 3107 is currently out of service. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on January 5, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was January 5, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.119 AOC-W-119: Tank 3108

5.1.1.119.1 General Information

Tank 3108 was placed in service in 1929 and has a capacity of approximately 106,000 gallons. Historically the tank reportedly contained Paraflow 525 or was empty. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the northwestern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.119.2 Maintenance and Integrity History

Tank 3108 is currently out of service and requires inspection and/or repairs prior to activation. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on June 12, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was June 12, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.120 AOC-W-120: Tank 3110

5.1.1.120.1 General Information

Tank 3110 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Mixed Alcohol (M29), TOTM, PAO-2, or ECA 8509. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the

Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.120.2 Maintenance and Integrity History

Tank 3110 is currently out of service and requires inspection and/or repairs prior to activation. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on June 14, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was June 13, 1991. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.121 AOC-W-121: Tank 3111

5.1.1.121.1 General Information

Tank 3111 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Mixed Alcohol (M89), ECA 1173, ECA 12513, ECA 13038, ECA 12513, and SN150 or was empty. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.121.2 Maintenance and Integrity History

Tank 3111 is currently out of service and requires inspection and/or repairs prior to activation. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on May 7, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1937. Both audible and visual high level alarms are installed on this tank.

On November 27, 1991, approximately 50 gallons of lube oil additive was released from Tank 3111 as a result of a failed steam coil. Details of this spill are provided in Section 5.4.1 of this report.

5.1.1.122 AOC-W-122: Tank 3112

5.1.1.122.1 General Information

Tank 3112 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained ECA 11007, ECA 13058, Paraflow 502 or Infineum R500. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.122.2 Maintenance and Integrity History

Tank 3112 is currently out of service. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on July 14, 1995 following the principles of the API 653 guidelines. The last internal tank inspection was July 14, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.123 AOC-W-123: Tank 3113

5.1.1.123.1 General Information

Tank 3113 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained ECA 11007, Paraflow 518 or Paraflow 500. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.123.2 Maintenance and Integrity History

Tank 3113 is currently out of service and requires inspection and/or repairs prior to activation. The last external visual inspection of the tank was on April 23, 1999. The last ultrasonic tank shell thickness measurement was taken on May 7, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1937. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.124 AOC-W-124: Tank 3114

5.1.1.124.1 General Information

Tank 3114 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained IPA SG1. The tank currently contains IPA. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12.**

5.1.1.124.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.125 AOC-W-125: Tank 3115

5.1.1.125.1 General Information

Tank 3115 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Isopar C Solvent. The tank currently contains Isopar C. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12.**

5.1.1.125.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.126 AOC-W-126: Tank 3116

5.1.1.126.1 General Information

Tank 3116 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Isopar C Solvent. The tank currently contains Isopar C. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.126.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.127 AOC-W-127: Tank 3117

5.1.1.127.1 General Information

Tank 3117 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Isopar E Solvent. The tank currently contains Isopar E. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.127.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.128 AOC-W-128: Tank 3118

5.1.1.128.1 General Information

Tank 3118 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Isopar E Solvent. The tank currently contains Isopar E. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.128.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.129 AOC-W-129: Tank 3119

5.1.1.129.1 General Information

Tank 3119 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Exxprint 588D Solvent or was empty. The tank currently contains Infineum T4012, otherwise known as DHP. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.129.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.130 AOC-W-130: Tank 3120

5.1.1.130.1 General Information

Tank 3120 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Exxprint 588D Solvent or was empty. The tank currently contains Infineum T4012, otherwise known as DHP. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.130.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.131 AOC-W-131: Tank 3121

5.1.1.131.1 General Information

Tank 3121 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Aromatic 200 Solvent. The tank currently contains Aromatic 200 Solvent. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.131.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.132 AOC-W-132: Tank 3122

5.1.1.132.1 General Information

Tank 3122 was placed in service in 1929 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Aromatic 200 Solvent. The tank currently contains Aromatic 200 Solvent. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.132.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.133 AOC-W-133: Tank 3123

5.1.1.133.1 General Information

Tank 3123 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Norpar 15 Solvent. The tank currently contains Norpar 15 Solvent. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.133.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.134 AOC-W-134: Tank 3124

5.1.1.134.1 General Information

Tank 3124 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Norpar 15 Solvent. The tank currently contains Norpar 15 Solvent. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.134.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.135 AOC-W-135: Tank 3125

5.1.1.135.1 General Information

Tank 3125 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly was a recovery tank for off-specification No. 2 and No. 6 fuel oils. The tank also is currently used as a recovery tank. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.135.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 20, 2002. The last ultrasonic tank shell thickness measurement was taken on April 20, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was April 20, 2002. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.136 AOC-W-136: Tank 3126

5.1.1.136.1 General Information

Tank 3126 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Exxate 600 Solvent. The tank currently contains Exxate 600 Solvent. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.136.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.137 AOC-W-137: Tank 3127

5.1.1.137.1 General Information

Tank 3127 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank reportedly contained Exxate 600 Solvent or was empty. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.137.2 Maintenance and Integrity History

Tank 3127 is currently out of service. The last external visual inspection of the tank was on August 1, 2003. The last ultrasonic tank shell thickness measurement was taken on August 1, 2003 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.138 AOC-W-138: Tank 3128

5.1.1.138.1 General Information

Tank 3128 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly empty. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.138.2 Maintenance and Integrity History

Tank 3128 is currently out of service and requires inspection and/or repairs prior to activation. No inspection or ultrasonic tank shell thickness measurement data is available. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.139 AOC-W-139: Tank 3129

5.1.1.139.1 General Information

Tank 3129 was placed in service in 1937 and has a capacity of approximately 55,500 gallons. Historically the tank was reportedly used as a slop tank. The tank is currently used as a recovery tank. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.139.2 Maintenance and Integrity History

The last external visual inspection of the tank was on March 17, 2003. The last ultrasonic tank shell thickness measurement was taken on March 17, 2003 following the principles of the API 653 guidelines. The last internal tank inspection was March 17, 2003. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.140 AOC-W-140: Tank 3179

5.1.1.140.1 General Information

Tank 3179 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. Historically the tank reportedly contained Dilwax, Lubrizol, or No. 6 fuel oil. The tank is currently used as a recovery tank. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.140.2 Maintenance and Integrity History

The last external visual inspection of the tank was on November 28, 2001. The last ultrasonic tank shell thickness measurement was taken on November 28, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was November 28, 2001. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.141 AOC-W-141: Tank 3182

5.1.1.141.1 General Information

Tank 3182 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank is currently used as an oil recovery tank. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.141.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 6, 2002. The last ultrasonic tank shell thickness measurement was taken on May 6, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was May 6, 2002. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.142 AOC-W-142: Tank 3183

5.1.1.142.1 General Information

Tank 3183 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. Historically the tank reportedly contained heptonic acid, nonene, SN100, ECA 15171, or Phase V Gas Additive. The tank is currently empty. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.142.2 Maintenance and Integrity History

Tank 3183 is currently out of service. The last external visual inspection of the tank was on August 12, 1999. The last ultrasonic tank shell thickness measurement was taken on August 12, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was October 12, 2002. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.143 AOC-W-143: Tank 3184

5.1.1.143.1 General Information

Tank 3184 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or solvent blend 114. The tank currently contains nonene. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.143.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on November 28, 1994 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1995. Both audible and visual high level alarms are installed on this tank.

On August 2, 1989, approximately 60 gallons on No. 6 fuel oil was released from Tank 3184 due to a steam coil leak. Details of this release are provided in Section 5.4.1 of this report.

5.1.1.144 AOC-W-144: Tank 3185

5.1.1.144.1 General Information

Tank 3185 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. Historically the tank reportedly contained Lubrizol, or No. 6 fuel oil. The tank currently contains oil or is used as a recovery tank. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.144.2 Maintenance and Integrity History

The last external visual inspection of the tank was on January 10, 2000. The last ultrasonic tank shell thickness measurement was taken on January 10, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was January 10, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.145 AOC-W-145: Tank 3186

5.1.1.145.1 General Information

Tank 3186 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains oil or is used as a recovery tank. Secondary containment for this tank is in Area 3A/B of Yard 3 and consists of an earthen dike with poured concrete walls. The available capacity of the Area 3A/B dike is 39,300 cubic feet or about 294,000 gallons. The tank is located in the western portion of Yard 3 and is shown on **Figure 12**.

5.1.1.145.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 10, 2001. The last ultrasonic tank shell thickness measurement was taken on May 10, 2001 following the

principles of the API 653 guidelines. The last internal tank inspection was May 10, 2001. Both audible and visual high level alarms are installed on this tank.

On August 2, 1989, approximately 300 gallons of slop oil was released from Tank 3186. Details of this release are provided in Section 5.4.1 of this report.

5.1.1.146 AOC-W-146: Tank 3813

5.1.1.146.1 General Information

Tank 3813 was placed in service in 1910 and has a capacity of approximately 53,000 gallons. Historically the tank reportedly contained off-specification No. 6 fuel oil. The tank is currently empty. Tank 3813 is in Area E of Yard 3, which is not in service. The tank is located in the southeastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.146.2 Maintenance and Integrity History

Tank 3813 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.147 AOC-W-147: Tank 3815

5.1.1.147.1 General Information

Tank 3815 was placed in service in 1922 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained off-specification No. 6 fuel oil. The tank is currently empty. Tank 3815 is in Area E of Yard 3, which is not in service. The tank is located in the southeastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.147.2 Maintenance and Integrity History

Tank 3815 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available.

On June 13, 1991, a release from Tank 3815 occurred. Approximately 10 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.148 AOC-W-148: Tank 3816

5.1.1.148.1 General Information

Tank 3816 was placed in service in 1922 and has a capacity of approximately 740,000 gallons. Historically the tank reportedly contained off-specification No. 6 fuel oil or No. 6 Fuel oil. The tank is currently empty. Tank 8316 is in Area E of Yard 3, which is not in service. The tank is located in the southeastern portion of Yard 3 and is shown on **Figure 12.**

5.1.1.148.2 Maintenance and Integrity History

Tank 3816 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.149 AOC-W-149: Tank 3817

5.1.1.149.1 General Information

Tank 3817 was placed in service in 1948 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained off-specification No. 6 fuel oil. The tank is currently empty. Tank 3817 is in Area E of Yard 3, which is not in service. The tank is located in the southeastern portion of Yard 3 and is shown on **Figure 12.**

5.1.1.149.2 Maintenance and Integrity History

Tank 3817 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.150 AOC-W-150: Tank 3818

5.1.1.150.1 General Information

Tank 3818 was placed in service in 1948 and has a capacity of approximately 99,000 gallons. Historically the tank reportedly contained off-specification No. 6 fuel oil. The tank is currently empty. Tank 3818 is in Area E of Yard 3, which is not in service. The tank is located in the southeastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.150.2 Maintenance and Integrity History

Tank 3818 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.151 AOC-W-151: Tank 3819

5.1.1.151.1 General Information

Tank 3819 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. Historically the tank reportedly contained off-specification No. 6 fuel oil. The tank is currently empty. Tank 3819 is in Area E of Yard 3, which is not in service. The tank is located in the southeastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.151.2 Maintenance and Integrity History

Tank 3819 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.152 AOC-W-152: Tank 3820

5.1.1.152.1 General Information

Tank 3820 was placed in service in 1948 and has a capacity of approximately 222,000 gallons. The tank was historically and is currently out of service. Tank 3820 is in Area E of Yard 3, which is not in service. The tank is located in the southeastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.152.2 Maintenance and Integrity History

Tank 3820 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.153 AOC-W-153: Tank 3821

5.1.1.153.1 General Information

Tank 3821 was placed in service in 1930 and has a capacity of approximately 55,500 gallons. The tank was historically and is currently out of service. Tank 3821 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.153.2 Maintenance and Integrity History

Tank 3821 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.154 AOC-W-154: Tank 3822

5.1.1.154.1 General Information

Tank 3822 was placed in service in 1930 and has a capacity of approximately 99,00 gallons. The tank was historically and is currently out of service. Tank 3822 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.154.2 Maintenance and Integrity History

Tank 3822 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.155 AOC-W-155: Tank 3823

5.1.1.155.1 General Information

Tank 3823 was placed in service in 1930 and has a capacity of approximately 99,00 gallons. The tank was historically and is currently out of service. Tank 3823 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12.**

5.1.1.155.2 Maintenance and Integrity History

Tank 3823 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.156 AOC-W-156: Tank 3824

5.1.1.156.1 General Information

Tank 3824 was placed in service in 1930 and has a capacity of approximately 99,00 gallons. The tank was historically and is currently out of service. Tank 3824 is in Area E of Yard 3, which is not in service. The tank is located on the eastern edge of Yard 3 and is shown on **Figure 12.**

5.1.1.156.2 Maintenance and Integrity History

Tank 3824 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.157 AOC-W-157: Tank 3825

5.1.1.157.1 General Information

Tank 3825 was placed in service in 1930 and has a capacity of approximately 99,00 gallons. The tank was historically and is currently out of service. Tank 3825 is in Area E of Yard 3, which is not in service. The tank is located on the eastern edge of Yard 3 and is shown on **Figure 12.**

5.1.1.157.2 Maintenance and Integrity History

Tank 3825 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.158 AOC-W-158: Tank 3826

5.1.1.158.1 General Information

Tank 3826 was placed in service in 1930 and has a capacity of approximately 99,00 gallons. The tank was historically and is currently out of service. Tank 3826 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.158.2 Maintenance and Integrity History

Tank 3826 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.159 AOC-W-159: Tank 3827

5.1.1.159.1 General Information

Tank 3827 was placed in service in 1930 and has a capacity of approximately 25,00 gallons. The tank was historically and is currently out of service. Tank 3827 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.159.2 Maintenance and Integrity History

Tank 3827 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.160 AOC-W-160: Tank 3828

5.1.1.160.1 General Information

Tank 3828 was placed in service in 1930 and has a capacity of approximately 25,00 gallons. The tank was historically and is currently out of service. Tank 3828 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.160.2 Maintenance and Integrity History

Tank 3828 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.161 AOC-W-161: Tank 3829

5.1.1.161.1 General Information

Tank 3829 was placed in service in 1930 and has a capacity of approximately 25,00 gallons. The tank was historically and is currently out of service. Tank 3829 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.161.2 Maintenance and Integrity History

Tank 3829 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.162 AOC-W-162: Tank 3830

5.1.1.162.1 General Information

Tank 3830 was placed in service in 1930 and has a capacity of approximately 222,00 gallons. The tank was historically and is currently out of service. Tank 3830 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.162.2 Maintenance and Integrity History

Tank 3830 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.163 AOC-W-163: Tank 3831

5.1.1.163.1 General Information

Tank 3831 was placed in service in 1930 and has a capacity of approximately 222,00 gallons. The tank was historically and is currently out of service. Tank 3831 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.163.2 Maintenance and Integrity History

Tank 3831 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.164 AOC-W-164: Tank 3832

5.1.1.164.1 General Information

Tank 3832 was placed in service in 1930 and has a capacity of approximately 222,000 gallons. The tank was historically and is currently out of service. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.164.2 Maintenance and Integrity History

Tank 3832 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.165 AOC-W-165: Tank 3833

5.1.1.165.1 General Information

Tank 3833 was placed in service in 1930 and has a capacity of approximately 222,000 gallons. The tank was historically and is currently out of service. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located in the northeastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.165.2 Maintenance and Integrity History

Tank 3833 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.166 AOC-W-166: Tank 3834

5.1.1.166.1 General Information

Tank 3834 was placed in service in 1930 and has a capacity of approximately 222,00 gallons. The tank was historically and is currently out of service. Tank 3834 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.166.2 Maintenance and Integrity History

Tank 3834 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available.

On June 26, 2002, a release from Tank 3834 occurred. Approximately less than 10 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.167 AOC-W-167: Tank 3835

5.1.1.167.1 General Information

Tank 3835 was placed in service in 1930 and has a capacity of approximately 222,00 gallons. The tank was historically and is currently out of service. Tank 3835 is in Area E of Yard 3, which is not in service. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.167.2 Maintenance and Integrity History

Tank 3835 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.168 AOC-W-168: Tank 3836

5.1.1.168.1 General Information

Tank 3836 was placed in service in 1930 and has a capacity of approximately 222,000 gallons. The tank was historically and is currently out of service. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located in the eastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.168.2 Maintenance and Integrity History

Tank 3836 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.169 AOC-W-169: Tank 3837

5.1.1.169.1 General Information

Tank 3837 was placed in service in 1930 and has a capacity of approximately 154,000 gallons. The tank was historically and is currently out of service. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about

116,000 gallons. The tank is located in the northeastern portion of Yard 3 and is shown on **Figure 12.**

5.1.1.169.2 Maintenance and Integrity History

Tank 3837 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.170 AOC-W-170: Tank 3838

5.1.1.170.1 General Information

Tank 3838 was placed in service in 1930 and has a capacity of approximately 154,000 gallons. The tank was historically and is currently out of service. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located on the northeastern edge of Yard 3 and is shown on **Figure 12.**

5.1.1.170.2 Maintenance and Integrity History

Tank 3838 is currently out of service and requires an API-653 inspection and/or repairs prior to activation, including the installation of high-level alarms. No inspection or ultrasonic tank shell thickness measurement data is available. No tank integrity issues have been reported.

5.1.1.171 AOC-W-171: Tank 3841

5.1.1.171.1 General Information

Tank 3841 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained No. 2 fuel oil. The tank currently contains cutter oil. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located in the northeastern portion of Yard 3 and is shown on **Figure 12.**

5.1.1.171.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 31, 2000. The last ultrasonic tank shell thickness measurement was taken on May 31, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was May 31, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.172 AOC-W-172: Tank 3842

5.1.1.172.1 General Information

Tank 3842 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained No. 2 fuel oil. The tank currently contains cutter oil. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located in the northeastern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.172.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 7, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was June 27, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.173 AOC-W-173: Tank 3843

5.1.1.173.1 General Information

Tank 3843 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained No. 2 fuel oil. The tank currently contains cutter oil. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located on the eastern edge of Yard 3 and is shown on **Figure 12**.

5.1.1.173.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2000. The last ultrasonic tank shell thickness measurement was taken on June 1, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was June 1, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.174 AOC-W-174: Tank 3844

5.1.1.174.1 General Information

Tank 3844 was placed in service in 1948 and has a capacity of approximately 395,000 gallons. Historically the tank reportedly contained No. 2 fuel oil. The tank currently contains cutter oil. Secondary containment for this tank is in Area 3D of Yard 3 and consists of an earthen dike where spill containment is directed to the plant sewer system. The available capacity of the Area 3D dike is 15,500 cubic feet or about 116,000 gallons. The tank is located on the northeastern edge of Yard 3 and is shown on **Figure 12**.

5.1.1.174.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 2, 2000. The last ultrasonic tank shell thickness measurement was taken on June 2, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was June 2, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.175 AOC-W-175: Tank 3921

5.1.1.175.1 General Information

Tank 3921 was placed in service in 1962 and has a capacity of approximately 1,015,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 3C of Yard 3 and consists of an earthen dike and poured concrete walls where spill containment is directed to the plant sewer system. The available capacity of the Area 3C dike is 34,200 cubic feet or about 256,000 gallons. The tank is located on the northern edge of Yard 3 and is shown on **Figure 12**.

5.1.1.175.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 7, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1992. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.176 AOC-W-176: Tank 3922

5.1.1.176.1 General Information

Tank 3922 was placed in service in 1962 and has a capacity of approximately 1,015,000 gallons. Historically the tank reportedly contained No. 6 or No. 4 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 3C of Yard 3 and consists of an earthen dike and poured concrete walls where spill containment is directed to the plant sewer system. The available capacity of the Area 3C dike is 34,200 cubic feet or about 256,000 gallons. The tank is located on the northern edge of Yard 3 and is shown on **Figure 12**.

5.1.1.176.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 16, 2000. The last ultrasonic tank shell thickness measurement was taken on May 16, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was May 16, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.177 AOC-W-177: Tank 3923

5.1.1.177.1 General Information

Tank 3923 was placed in service in 1962 and has a capacity of approximately 1,015,000 gallons. Historically, the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 3C of Yard 3 and consists of an earthen dike and poured concrete walls where spill containment is directed to the plant sewer system. The available capacity of the Area 3C dike is 34,200 cubic feet or about 256,000 gallons. The tank is located in the northern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.177.2 Maintenance and Integrity History

The last external visual inspection of the tank was on August 2, 2000. The last ultrasonic tank shell thickness measurement was taken on August 2, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was August 2, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.178 AOC-W-178: Tank 3924

5.1.1.178.1 General Information

Tank 3924 was placed in service in 1962 and has a capacity of approximately 1,015,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 3C of Yard 3 and consists of an earthen dike and poured concrete walls where spill containment is directed to the plant sewer system. The available capacity of the Area 3C dike is 34,200 cubic feet or about 256,000 gallons. The tank is located in the northern portion of Yard 3 and is shown on **Figure 12**.

5.1.1.178.2 Maintenance and Integrity History

The last external visual inspection of the tank was on March 7, 2000. The last ultrasonic tank shell thickness measurement was taken on March 7, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was March 7, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.179 AOC-W-179: Tank 5057

5.1.1.179.1 General Information

Tank 5057 was placed in service in 1929 and has a capacity of approximately 2,227,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, No. 2 fuel oil, , or MTBE. The tank currently contains MTBE. Secondary containment for this tank is in Area 5A of Yard 5 and consists of an earthen dike. The available capacity of the Area 5A dike is 292,104 cubic feet or about 2,185,000 gallons. The tank is located in the southwestern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.179.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1993. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.180 AOC-W-180: Tank 5059

5.1.1.180.1 General Information

Tank 5059 was placed in service in 1926 and has a capacity of approximately 1,778,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, No. 2 fuel oil, or MTBE. The tank currently contains MTBE. Secondary containment for this tank is in Area 5A of Yard 5 and consists of an earthen dike. The available capacity of the Area 5A dike is 292,104 cubic feet or about 2,185,000 gallons. The tank is located in the southwestern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.180.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1993. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.181 AOC-W-181: Tank 5064

5.1.1.181.1 General Information

Tank 5064 was placed in service in 1929 and has a capacity of approximately 2,227,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, or MTBE. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5B of Yard 5 and consists of an earthen dike. The available capacity of the Area 5B dike is 335,600 cubic feet or about 2,510,000 gallons. The tank is located in the central/southwestern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.181.2 Maintenance and Integrity History

The last external visual inspection of the tank was on January 15, 2002. The last ultrasonic tank shell thickness measurement was taken on January 15, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was January 15, 2002. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.182 AOC-W-182: Tank 5070

5.1.1.182.1 General Information

Tank 5070 was placed in service in 1925 and has a capacity of approximately 1,778,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, or MTBE. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5B of Yard 5 and consists of an earthen dike. The available capacity of the Area 5B dike is 335,600 cubic feet or about 2,510,000 gallons. The tank is located in the central portion of Yard 5 and is shown on **Figure 12**.

5.1.1.182.2 Maintenance and Integrity History

The last external visual inspection of the tank was on August 18, 2000. The last ultrasonic tank shell thickness measurement was taken on August 18, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was August 18, 2000. Both audible and visual high level alarms are installed on this tank.

On August 8, 1994, a release from Tank 5070 occurred. Approximately 200 gallons of gasoline was released when a pump broke on Tank 5070. A summary of this spill is included in Section 5.4.1 Areas of Discharge of this report.

In April 1996, ENSR conducted a soil investigation of the area around Tank 5070. Six soil samples were collected and analyzed for TPH, VOCs, and lead. All VOC and lead concentrations detected were below their respective criteria. TPH concentrations exceeding the 10,000 mg/kg criteria were detected in two of the six samples at concentrations of 13,300 and 19,900 mg/kg. The complete results of this investigation

were submitted to the NJDEP in November 1996 in a report by ENSR entitled "Phase I Remedial Investigation Report".

5.1.1.183 AOC-W-183: Tank 5073

5.1.1.183.1 General Information

Tank 5073 was placed in service in 1929 and has a capacity of approximately 3,378,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located in the central/northern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.183.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on September 10, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was September 10, 1998. Both audible and visual high level alarms are installed on this tank.

On March 18, 1990, a release from Tank 5073 occurred. Approximately 40 gallons of gasoline was released. A summary of this spill is included in Section 5.4.1 Areas of Discharge of this report.

On July 3, 1993, a release from Tank 5073 occurred. Approximately 536 barrels of gasoline was discharged to the surface.

In April 1995, ENSR conducted a soil investigation around Tank 5073. Six soil samples were collected and analyzed for TPH, VOCs, and lead. All TPH, VOC and lead concentrations detected were below their respective criteria. Complete details regarding this investigation were provided to the NJDEP in November 1996 (ENSR, November 1996).

5.1.1.184 AOC-W-184: Tank 5076

5.1.1.184.1 General Information

Tank 5076 was placed in service in 2003 and has a capacity of approximately 3,249,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5D of Yard 5 and consists of an earthen dike. The available capacity of the Area 5D dike is 228,200 cubic feet or about 1,707,000 gallons. The tank is located in the central portion of Yard 5 and is shown on **Figure 12.**

5.1.1.184.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 21, 2003. The last ultrasonic tank shell thickness measurement was taken on October 21, 2003 following the principles of the API 653 guidelines. The last internal tank inspection was October 21, 2003. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.185 AOC-W-185: Tank 5077

5.1.1.185.1 General Information

Tank 5077 was placed in service in 2002 and has a capacity of approximately 2,439,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5D of Yard 5 and consists of an earthen dike. The available capacity of the Area 5D dike is 228,200 cubic feet or about 1,707,000 gallons. The tank is located in the southern portion of Yard 5 and is shown on **Figure 12.**

5.1.1.185.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 23, 2003. The last ultrasonic tank shell thickness measurement was taken on October 23, 2003 following the principles of the API 653 guidelines. The last internal tank inspection was October 23, 2003. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.186 AOC-W-186: Tank 5085

5.1.1.186.1 General Information

Tank 5085 was placed in service in 1915 and has a capacity of approximately 2,749,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, or MTBE. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5B of Yard 5 and consists of an earthen dike. The available capacity of the Area 5B dike is 335,600 cubic feet or about 2,510,000 gallons. The tank is located in the central/western portion of Yard 5 and is shown on **Figure 12**.

5.1.1.186.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on September 25, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was September 25, 1996. Both audible and visual high level alarms are installed on this tank.

On November 18, 1993, approximately 100 gallons of gasoline was discharged from Tank 5085 due to overflow during a transfer operation. Details of this release are provided in Section 5.4.1 of this report.

5.1.1.187 AOC-W-187: Tank 5156

5.1.1.187.1 General Information

Tank 5156 was placed in service in 1930 and has a capacity of approximately 3,378,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, No. 2 fuel oil, or MTBE. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the southwestern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.187.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on November 4, 1997 following the principles of the API 653 guidelines. The last internal tank inspection was November

4, 1997. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.188 AOC-W-188: Tank 5161

5.1.1.188.1 General Information

Tank 5161 was placed in service in 1952 and has a capacity of approximately 2,134,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the western edge of Yard 5 and is shown on **Figure 12**.

5.1.1.188.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on October 2, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was October 2, 1999. Both audible and visual high level alarms are installed on this tank.

On August 22, 1989, a release from Tank 5161 occurred. Approximately 150 gallons of gasoline was released from a tank bottom leak. IMTT personnel performed cleanup. No soil samples are known to have been collected at the time of the spill. A summary of this spill is included in Section 5.4.1 Areas of Discharge of this report.

In April 1995, ENSR conducted a soil investigation around Tank 5161. Six soil samples were collected and analyzed for TPH, VOCs, and lead. Total xylenes concentrations in five of the six soil samples collected exceed the 10 mg/kg criteria; these concentrations range from 16 to 73 mg/kg. Lead was detected in one soil sample at a concentration of 3,070 mg/kg; which exceeds the 600 mg/kg criteria. TPH concentrations in four of the six soil samples exceed the 10,000 mg/kg criteria. The complete results of this investigation were submitted to the NJDEP in November 1996 under a report by ENSR entitled "Phase I Remedial Investigation Report". No further investigation of this area was conducted.

5.1.1.189 AOC-W-189: Tank 5162

5.1.1.189.1 General Information

Tank 5162 was placed in service in 1952 and has a capacity of approximately 2,337,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5B of Yard 5 and consists of an earthen dike. The available capacity of the Area 5B dike is 335,600 cubic feet or about 2,510,000 gallons. The tank is located in the western portion of Yard 5 and is shown on **Figure 12**.

5.1.1.189.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 8, 2001. The last ultrasonic tank shell thickness measurement was taken on June 8, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was June 8, 2001. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.190 AOC-W-190: Tank 5163

5.1.1.190.1 General Information

Tank 5163 was placed in service in 1952 and has a capacity of approximately 2,134,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the western edge of Yard 5 and is shown on **Figure 12**.

5.1.1.190.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on October 9, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was October 9, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.192 AOC-W-192: Tank 5164

5.1.1.192.1 General Information

Tank 5164 was placed in service in 1952 and has a capacity of approximately 2,274,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located in the northwestern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.192.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 5, 2002. The last ultrasonic tank shell thickness measurement was taken on July 5, 2002 following the principles of the API 653 guidelines. The last internal tank inspection was July 5, 2002. Both audible and visual high level alarms are installed on this tank.

On September 5, 1991, a release from Tank 5164 occurred. Approximately 30 gallons of gasoline was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.193 AOC-W-193: Tank 5184

5.1.1.193.1 General Information

Tank 5184 was placed in service in 1913 and has a capacity of approximately 1,624,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the northern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.193.2 Maintenance and Integrity History

The last external visual inspection of the tank was on April 4, 2001. The last ultrasonic tank shell thickness measurement was taken on April 4, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was April 4, 2001.

Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.194 AOC-W-194: Tank 5186

5.1.1.194.1 General Information

Tank 5186 was placed in service in 1919 and has a capacity of approximately 3,054,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the northern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.194.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on October 4, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was March 21, 2000. Both audible and visual high level alarms are installed on this tank.

On May 8, 1991, a release from piping associated with Tank 5186 occurred. Approximately 50 gallons of gasoline was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.195 AOC-W-195: Tank 5187

5.1.1.195.1 General Information

Tank 5187 was placed in service in 1919 and has a capacity of approximately 3,419,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the northwestern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.195.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 29, 2003. The last ultrasonic tank shell thickness measurement was taken on October 29, 2003 following the principles of the API 653 guidelines. The last internal tank inspection was October 29, 2003. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.196 AOC-W-196: Tank 5188

5.1.1.196.1 General Information

Tank 5188 was placed in service in 1919 and has a capacity of approximately 3,130,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the northwestern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.196.2 Maintenance and Integrity History

The last external visual inspection of the tank was on May 9, 2001. The last ultrasonic tank shell thickness measurement was taken on May 9, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was May 9, 2001. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.197 AOC-W-197: Tank 5210

5.1.1.197.1 General Information

Tank 5210 was placed in service in 1926 and has a capacity of approximately 888,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5E of Yard 5 and consists of an earthen dike. The available capacity of the Area 5E dike is 143,300 cubic feet or about 1,072,000 gallons. The tank is located in the central/southeastern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.197.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on November 3, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was November 3, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.198 AOC-W-198: Tank 5211

5.1.1.198.1 General Information

Tank 5211 was placed in service in 1901 and has a capacity of approximately 428,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5E of Yard 5 and consists of an earthen dike. The available capacity of the Area 5E dike is 143,300 cubic feet or about 1,072,000 gallons. The tank is located on the southern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.198.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 8, 2004. The last ultrasonic tank shell thickness measurement was taken on October 8, 2004 following the principles of the API 653 guidelines. The last internal tank inspection was October 8, 2004. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.199 AOC-W-199: Tank 5212

5.1.1.199.1 General Information

Tank 5212 was placed in service in 1926 and has a capacity of approximately 888,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5E of Yard 5 and consists of an earthen dike. The available capacity of the Area 5E dike is 143,300 cubic feet or about 1,072,000 gallons. The tank is located in the central/southeastern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.199.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on November 2, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was November 2, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.200 AOC-W-200: Tank 5213

5.1.1.200.1 General Information

Tank 5213 was placed in service in 1926 and has a capacity of approximately 888,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5E of Yard 5 and consists of an earthen dike. The available capacity of the Area 5E dike is 143,300 cubic feet or about 1,072,000 gallons. The tank is located in the central/southeastern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.200.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on October 28, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was October 28, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.201 AOC-W-201: Tank 5214

5.1.1.201.1 General Information

Tank 5214 was placed in service in 1926 and has a capacity of approximately 888,000 gallons. Historically the tank reportedly contained No. 6 fuel oil or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5E of Yard 5 and consists of an earthen dike. The available capacity of the Area 5E dike is 143,300 cubic feet or about 1,072,000 gallons. The tank is located on the southern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.201.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on October 6, 2004 following the principles of the API 653 guidelines. The last internal tank inspection was October 6, 2004. Both audible and visual high level alarms are installed on this tank.

On February 26, 1997, a release occurred from Tank 5214. Approximately, 19,194 gallons of MTBE and naphtha were released. The release was reported to the NJDEP and included in Section 5.4.1 Areas of Discharge in this report.

5.1.1.202 AOC-W-202: Tank 5801

5.1.1.202.1 General Information

Tank 5801 was placed in service in 1922 and has a capacity of approximately 3,108,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, No. 2 fuel oil, or gasoline. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located in the northern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.202.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on April 2, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was April 2, 1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.203 AOC-W-203: Tank 5802

5.1.1.203.1 General Information

Tank 5802 was placed in service in 1922 and has a capacity of approximately 3,108,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, or No. 2 fuel oil. The tank currently contains gasoline. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is

569,700 cubic feet or about 4,262,000 gallons. The tank is located in the northeastern portion of Yard 5 and is shown on **Figure 12**.

5.1.1.203.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on November 22, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was November 22, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.204 AOC-W-204: Tank 5803

5.1.1.204.1 General Information

Tank 5803 was placed in service in 1922 and has a capacity of approximately 3,419,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in Area 5C of Yard 5 and consists of an earthen dike and cement block. The available capacity of the Area 5C dike is 569,700 cubic feet or about 4,262,000 gallons. The tank is located on the northeastern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.204.2 Maintenance and Integrity History

The last external visual inspection of the tank was on March 22, 2004. The last ultrasonic tank shell thickness measurement was taken on March 22, 2004 following the principles of the API 653 guidelines. The last internal tank inspection was March 22, 2004. Both audible and visual high level alarms are installed on this tank.

On February 23, 2003, a release from Tank 5803 occurred. Approximately 210 gallons of No. 2 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.205 AOC-W-205: Tank 5804

5.1.1.205.1 General Information

Tank 5804 was placed in service in 1928 and has a capacity of approximately 3,378,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, No. 2 fuel oil, or gasoline. The

tank currently contains No. 2 fuel oil. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located on the northeastern corner of Yard 5 and is shown on **Figure 12**.

5.1.1.205.2 Maintenance and Integrity History

The last external visual inspection of the tank was on February 10, 2000. The last ultrasonic tank shell thickness measurement was taken on February 10, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was February 10, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.206 AOC-W-206: Tank 5805

5.1.1.206.1 General Information

Tank 5805 was placed in service in 1922 and has a capacity of approximately 3,108,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank is currently out of service. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located on the northeastern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.206.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The internal tank inspection is currently being conducted. Both audible and visual high level alarms are installed on this tank.

On November 18, 1993, a release from Tank 5805 occurred. Approximately 100 gallons of regular unleaded gasoline was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.207 AOC-W-207: Tank 5806

5.1.1.207.1 General Information

Tank 5806 was placed in service in 1922 and has a capacity of approximately 3,418,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located on the eastern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.207.2 Maintenance and Integrity History

The last external visual inspection of the tank was on March 22, 2004. The last ultrasonic tank shell thickness measurement was taken on March 22, 2004 following the principles of the API 653 guidelines. The last internal tank inspection was March 22, 2004. Both audible and visual high level alarms are installed on this tank.

On February 20, 1996, approximately 100 to 150 gallons of an MTBE mixture was released from Tank 5806 from a leaking high suction line. Details of this release are provided in Section 5.4.1 of this report.

5.1.1.208 AOC-W-208: Tank 5808

5.1.1.208.1 General Information

Tank 5808 was placed in service in 1922 and has a capacity of approximately 3,108,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located on the southeastern edge of Yard 5 and is shown on **Figure 12**.

5.1.1.208.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on April 20, 1998 following the principles of the API 653 guidelines. The last internal tank inspection was April 20,

1998. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.209 AOC-W-209: Tank 5809

5.1.1.209.1 General Information

Tank 5809 was placed in service in 1922 and has a capacity of approximately 3,108,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, No. 2 fuel oil, or gasoline. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located on the southeastern corner of Yard 5 and is shown on **Figure 12.**

5.1.1.209.2 Maintenance and Integrity History

The last external visual inspection of the tank was on September 17, 2004. The last ultrasonic tank shell thickness measurement was taken on September 17, 2004 following the principles of the API 653 guidelines. The last internal tank inspection was September 17, 2004. Both audible and visual high level alarms are installed on this tank.

On July 21, 2004, a release from Tank 5809 occurred. Approximately 2,000 gallons of gasoline was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.210 AOC-W-210: Tank 5810

5.1.1.210.1 General Information

Tank 5810 was placed in service in 1926 and has a capacity of approximately 3,297,000 gallons. Historically the tank reportedly contained No. 2 fuel oil or gasoline. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located on the southeastern corner of Yard 5 and is shown on **Figure 12.**

5.1.1.210.2 Maintenance and Integrity History

The last external visual inspection of the tank was on October 20, 2004. The last ultrasonic tank shell thickness measurement was taken on December 8, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was December 8, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.211 AOC-W-211: Tank 5811

5.1.1.211.1 General Information

Tank 5811 was placed in service in 1926 and has a capacity of approximately 3,378,000 gallons. Historically the tank reportedly contained No. 2 fuel oil or gasoline. The tank currently contains No. 2 fuel oil. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located in the southeastern portion of Yard 5 and is shown on **Figure 12.**

5.1.1.211.2 Maintenance and Integrity History

The last external visual inspection of the tank was on January 4, 2000. The last ultrasonic tank shell thickness measurement was taken on January 4, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was January 4, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.212 AOC-W-212: Tank 5812

5.1.1.212.1 General Information

Tank 5812 was placed in service in 1926 and has a capacity of approximately 3,378,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank is currently out of service. Secondary containment for this tank is in Area 5G/H/I of Yard 5 and consists of an earthen dike and concrete walls. The available capacity of the Area 5G/H/I dike is 528,000 cubic feet or about 3,950,000 gallons. The tank is located in the eastern portion of Yard 5 and is shown on **Figure 12.**

5.1.1.212.2 Maintenance and Integrity History

The last external visual inspection of the tank was on June 23, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1986. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.213 AOC-W-213: Tank 6002

5.1.1.213.1 General Information

Tank 6002 was placed in service in 1951 and has a capacity of approximately 6,448,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 6A of Yard 6 and consists of poured concrete. The available capacity of the Area 6A dike is 903,382 cubic feet or about 6,758,000 gallons. The tank is located on the northern edge of Yard 6 and is shown on **Figure 12.**

5.1.1.213.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on July 18, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was July 18, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.214 AOC-W-214: Tank 6003

5.1.1.214.1 General Information

Tank 6003 was placed in service in 1957 and has a capacity of approximately 6,448,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6B of Yard 6 and consists of poured concrete. The available capacity of the Area 6B dike is 460,000 cubic feet or about 3,441,000 gallons. The tank is located on the northwestern edge of Yard 6 and is shown on **Figure 12.**

5.1.1.214.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1992. Both audible and visual high level alarms are installed on this tank.

On February 28, 2003, a release from Tank 6003 occurred. Approximately 42,000 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.215 AOC-W-215: Tank 6004

5.1.1.215.1 General Information

Tank 6004 was placed in service in 1957 and has a capacity of approximately 6,345,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6B of Yard 6 and consists of poured concrete. The available capacity of the Area 6B dike is 460,000 cubic feet or about 3,441,000 gallons. The tank is located on the northwestern corner of Yard 6 and is shown on **Figure 12**.

5.1.1.215.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 18, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1993. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.216 AOC-W-216: Tank 6005

5.1.1.216.1 General Information

Tank 6005 was placed in service in 1957 and has a capacity of approximately 6,448,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6B of Yard 6 and consists of poured concrete. The available capacity of the Area 6B dike is 460,000 cubic feet or about 3,441,000 gallons. The tank is located in the northwestern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.216.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was August 1, 1994. Both audible and visual high level alarms are installed on this tank.

On January 27, 2003, a release from Tank 6005 occurred. Approximately 84 gallons of No. 6 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.217 AOC-W-217: Tank 6006

5.1.1.217.1 General Information

Tank 6006 was placed in service in 1951 and has a capacity of approximately 6,448,000 gallons. Historically the tank reportedly contained gasoline or MTBE. The tank currently contains MTBE. Secondary containment for this tank is in Area 6B of Yard 6 and consists of poured concrete. The available capacity of the Area 6B dike is 460,000 cubic feet or about 3,441,000 gallons. The tank is located in the northwestern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.217.2 Maintenance and Integrity History

The last external visual inspection of the tank was on September 19, 2001. The last ultrasonic tank shell thickness measurement was taken on September 19, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was September 19, 2001. Both audible and visual high level alarms are installed on this tank.

On August 6, 1986, a release from Tank 6006 occurred. Approximately 37,800 gallons of gasoline was released into the tank dike area and a storm gate to the on-site drainage system. It was concluded that a major portion of the gasoline released was trapped in the storm drain system because the flow to the Wemco Separator pond was coincidently shut off to make repairs and reportedly flushed the storm drains to the treatment plant. A summary of this spill is included in Section 5.4.1 Areas of Discharge of this report.

In April 1996, ENSR conduced a soil investigation around Tank 6006. Six soil samples were collected around Tank 6006 and analyzed for TPH, VOC, and lead. All VOC and lead concentrations detected were below their respective criteria. TPH was detected in one of the six soil samples at a concentration above the 10,000 mg/kg criteria (31,400). No additional investigation of this area was conducted (ENSR November 1996).

5.1.1.218 AOC-W-218: Tank 6007

5.1.1.218.1 General Information

Tank 6007 was placed in service in 1949 and has a capacity of approximately 6,678,000 gallons. Historically the tank reportedly contained gasoline, or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 6A of Yard 6 and consists of poured concrete. The available capacity of the Area 6A dike is 903,382 cubic feet or about 6,758,000 gallons. The tank is located in the northern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.218.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank.

On December 28, 1996, approximately 840 gallons of MTBE were released from AST 6007 during a transfer from AST 5184. Details are provided in Section 5.4.1 Areas of Discharge of this report.

5.1.1.219 AOC-W-219: Tank 6008

5.1.1.219.1 General Information

Tank 6008 was placed in service in 1949 and has a capacity of approximately 6,678,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 6A of Yard 6 and consists of poured concrete. The available capacity of the Area 6A dike is 903,382

cubic feet or about 6,758,000 gallons. The tank is located in the northern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.219.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on March 8, 1996 following the principles of the API 653 guidelines. The last internal tank inspection was March 28, 1996. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.220 AOC-W-220: Tank 6009

5.1.1.220.1 General Information

Tank 6009 was placed in service in 1949 and has a capacity of approximately 6,448,000 gallons. Historically the tank reportedly contained No. 6 fuel oil, gasoline, ethyl alcohol, or MTBE. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 6A of Yard 6 and consists of poured concrete. The available capacity of the Area 6A dike is 903,382 cubic feet or about 6,758,000 gallons. The tank is located in the northern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.220.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was December 30, 1995. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.221 AOC-W-221: Tank 6010

5.1.1.221.1 General Information

Tank 6010 was placed in service in 1949 and has a capacity of approximately 6,678,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline and blend. Secondary containment for this tank is in Area 6A of Yard 6 and consists of poured concrete. The available capacity of the Area 6A dike is 903,382 cubic feet or

about 6,758,000 gallons. The tank is located in the northern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.221.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on September 25, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was September 25, 1999. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.222 AOC-W-222: Tank 6011

5.1.1.222.1 General Information

Tank 6011 was placed in service in 1952 and has a capacity of approximately 6,678,000 gallons. Historically the tank reportedly contained gasoline or MTBE. The tank currently contains MTBE. Secondary containment for this tank is in Area 6B of Yard 6 and consists of poured concrete. The available capacity of the Area 6B dike is 460,000 cubic feet or about 3,441,000 gallons. The tank is located in the northwestern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.222.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 3, 2001. The last ultrasonic tank shell thickness measurement was taken on July 3, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was July 3, 2001. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.223 AOC-W-223: Tank 6012

5.1.1.223.1 General Information

Tank 6012 was placed in service in 1957 and has a capacity of approximately 6,448,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6B of Yard 6 and consists of poured concrete. The available capacity of the Area 6B dike is 460,000 cubic feet or about

3,441,000 gallons. The tank is located in the northwestern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.223.2 Maintenance and Integrity History

The last external visual inspection of the tank was on December 31, 2000. The last ultrasonic tank shell thickness measurement was taken on December 31, 2000 following the principles of the API 653 guidelines. The last internal tank inspection was December 31, 2000. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.224 AOC-W-224: Tank 6100

5.1.1.224.1 General Information

Tank 6100 was placed in service in 1997 and has a capacity of approximately 56,000 gallons. Historically the tank reportedly contained gasoline or No. 2 fuel oil. The tank currently contains gasoline. The tank is located in the central/western portion of Yard 6 and is shown on **Figure 12**.

5.1.1.224.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was January 15, 1997. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.225 AOC-W-225: Tank 6101

5.1.1.225.1 General Information

Tank 6101 was placed in service in 1997 and has a capacity of approximately 288,000 gallons. Historically the tank reportedly contained gasoline. The tank currently contains gasoline. The tank is located in the central/western portion of Yard 6 and is shown on **Figure 12**.

5.1.1.225.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the

principles of the API 653 guidelines. The last internal tank inspection was January 15, 1997. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.226 AOC-W-226: Tank 6105

5.1.1.226.1 General Information

Tank 6105 was placed in service in 1950. Historically the tank reportedly contained acetone or gasoline. The tank currently contains No. 2 fuel oil. Tank 6105 is in Area C of Yard 6. The tank is located on the western edge of Yard 6 and is shown on **Figure 12**.

5.1.1.226.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.227 AOC-W-227: Tank 6106

5.1.1.227.1 General Information

Tank 6106 was placed in service in 1950. Historically the tank reportedly contained acetone or gasoline. The tank currently contains No. 2 fuel oil. Tank 6106 is in Area C of Yard 6. The tank is located on the western edge of Yard 6 and is shown on **Figure 12**.

5.1.1.227.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 11, 1999 following the principles of the API 653 guidelines. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.228 AOC-W-228: Tank 6203

5.1.1.228.1 General Information

Tank 6203 was placed in service in 1957 and has a capacity of approximately 6,345,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6D of Yard 6 and consists of an

earthen dike. The available capacity of the Area 6D dike is 1,446,000 cubic feet or about 10,817,000 gallons. The tank is located in the central portion of Yard 6 and is shown on **Figure 12**.

5.1.1.228.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 18, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank.

On February 22, 1993, approximately 8,000 to 10,000 gallons of No. 6 fuel oil were released from Tank 6203. The cause of the release was due to tank failure. A cleanup was conducted in the diked area around the tank.

In April 1995, ENSR conducted a soil investigation of the area around Tank 6203. Five soil samples were collected from around Tank 6203 and analyzed for TPH and PAH. All PAH and TPH concentrations detected were below their respective criteria (ENSR November 1996).

5.1.1.229 AOC-W-229: Tank 6204

5.1.1.230.1 General Information

Tank 6204 was placed in service in 1957 and has a capacity of approximately 10,521,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6D of Yard 6 and consists of an earthen dike. The available capacity of the Area 6D dike is 1,446,000 cubic feet or about 10,817,000 gallons. The tank is located in the central portion of Yard 6 and is shown on **Figure 12**.

5.1.1.229.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 18, 1999 following the

principles of the API 653 guidelines. The last internal tank inspection was July 1, 1994. Both audible and visual high level alarms are installed on this tank.

In April 1995, ENSR conducted a soil investigation of the area around Tank 6204. Five soil samples were collected from around Tank 6204 and analyzed for TPH and PAH. All PAH and TPH concentrations detected were below their respective criteria (ENSR November 1996).

5.1.1.230 AOC-W-230: Tank 6205

5.1.1.230.1 General Information

Tank 6205 was placed in service in 1963 and has a capacity of approximately 4,061,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6D of Yard 6 and consists of an earthen dike. The available capacity of the Area 6D dike is 1,446,000 cubic feet or about 10,817,000 gallons. The tank is located in the southeastern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.230.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 6, 2001. The last ultrasonic tank shell thickness measurement was taken on July 6, 2001 following the principles of the API 653 guidelines. The last internal tank inspection was July 6, 2001. Both audible and visual high level alarms are installed on this tank. No tank integrity issues have been reported.

5.1.1.231 AOC-W-231: Tank 6206

5.1.1.231.1 General Information

Tank 6206 was placed in service in 1963 and has a capacity of approximately 4,061,000 gallons. Historically the tank reportedly contained No. 6 fuel oil. The tank currently contains No. 6 fuel oil. Secondary containment for this tank is in Area 6D of Yard 6 and consists of an earthen dike. The available capacity of the Area 6D dike is 1,446,000 cubic feet or about 10,817,000 gallons. The tank is located in the southeastern portion of Yard 6 and is shown on **Figure 12**.

5.1.1.231.2 Maintenance and Integrity History

The last external visual inspection of the tank was on July 1, 2004. The last ultrasonic tank shell thickness measurement was taken on May 18, 1999 following the principles of the API 653 guidelines. The last internal tank inspection was July 1, 1998. Both audible and visual high level alarms are installed on this tank.

On May 1, 1996, approximately 630 gallons of No. 6 fuel oil was released from Tank 6206 due to a steam coil failure. Details regarding this release are provided in Section 5.4.1 of this report.

On August 29, 2004, a release from Tank 6206 occurred. Approximately 54,180 gallons of No. 2 fuel oil was released. The release was reported to the NJDEP and is included in Section 5.4.1 Areas of Discharge of this report.

5.1.1.232 AOC-W-232: Demolished Tanks

5.1.1.232.1 General Information

The following tanks were reportedly demolished. Details of the former locations, demolition dates, and tank contents are unavailable. Tanks: 2201, 2202, 2226, 2318, 2319, 2351, 2353, 2355, 2356, 2361, 2363, 2365, 2366, 2371, 2373, 2375, and 2376.

5.1.2 Aboveground Piping Network

The aboveground piping network on the IMTT-West Side facility is used to convey product to on-site storage locations as well as various distribution points. The tankage at the terminal is connected to several pump stations and transfer areas (i.e. truck and rail loading racks) through the facility's piping network. The majority of the lines follow shared piping traces and the locations of the lines are depicted **on Figure 13**. Aboveground pipelines run through every yard of the West Side, including all of the piers that extend into the Kill Van Kull.

Typically, the lines are supported above ground by metal framework. In some

cases, lines pass through tank berm walls, or run under service roads. As depicted, the lines are primarily located within other AOCs identified in elsewhere in this report. The aboveground lines are used to convey a wide array of petroleum and chemical products stored at the facility.

5.1.3 Underground Storage Tanks and Associated Piping (Pa Form Question A2)

5.1.3.1 AOC-W-233 Y1-UST-A and AOC-W-234 Y1-UST-B

5.1.3.1.1 General Information

Two 4,000-gallon gasoline, steel USTs were located in the northwest corner of Yard 1, south of the Co-Gen Plant, and east of the White Chemical area. On March 18, 1992, Tank Tech Corp. of Congers, New York, removed these USTs, identified by IMTT as T4 and T5. The USTs were removed in accordance with a NJDEP approved UST Closure Plan (TMS No. C92-0380). Holes were reported on the bottom of UST T5 and on the lower portion of the side of UST T4. As approved by the NJDEP, no post excavation soil samples were collected to evaluate subsurface conditions since an RI was proposed for the area. The location of the former USTs are shown on **Figure 14**.

5.1.3.1.2 Maintenance and Integrity History

No information pertaining to tank maintenance and integrity testing were found.

5.1.3.1.3 Environmental History

A detailed description of the field activities and findings can be reviewed in the ENSR Phase I Remedial Investigation Report dated November 1996. A summary is provided below.

On March 1 and 2, 1995, three test pits were completed using a backhoe at the former UST locations. Goldstar, Inc. of Middlesex, New Jersey performed excavation activities under the supervision of an ENSR geologist. Following the completion of the

excavation activities, the test pits were lined with plastic and backfilled with the excavated soil.

All soil samples were field screened for volatile organic vapors using a PID. Because the USTs were used to store gasoline, all soil samples were analyzed for volatile organic compounds plus a library search of the next 10 highest peaks, total petroleum hydrocarbons, and lead. IEA of Whippany, New Jersey, completed the sample analysis.

Benzene, toluene, ethylbenzene, and xylenes were detected in each soil sample collected. Benzene was detected at concentrations above the 1,000 ug/kg New Jersey Impact to Groundwater Soil Cleanup Criteria (NJIGWSC) in six of the eleven samples collected. A maximum concentration of 68,000 ug/kg was detected. Total xylenes were detected at concentrations exceeding the 10,000 ug/kg NJIGWSC in nine of the eleven samples collected, with a maximum detected concentration of 610,000 ug/kg. Ethylbenzene was detected at concentrations exceeding the 100,000 ug/kg NJIGWSC in one of the eleven samples collected at a concentration of 180,000 ug/kg. Total petroleum hydrocarbons were detected at concentrations above the 10,000 mg/kg total organic compound soil cleanup criteria in two of the eleven samples collected. Lead was detected at concentrations above the 600 mg/kg New Jersey Non-Residential Soil Cleanup Criteria in one of the eleven samples collected at a concentration of 1,760 mg/kg.

5.1.3.2 AOC-W-235 Y6-UST-A, AOC-W-236 Y6-UST-B, and AOC-W-237 Y6-UST-C

5.1.3.2.1 General Information

On March 17 and 1, 1992, three 1,000-gallon, steel, gasoline USTs (T1, T2, T3) were excavated and removed from the southwest corner of Yard 6 in accordance with a NJDEP approved closure plan. Upon removal, holes were reported on the sides and bottom of all three USTs. No post-excavation soil samples were collected to evaluate subsurface conditions since they would be collected as part of the RI. Three test pits

were dug to evaluate subsurface conditions in the area of the former USTS during the Phase I RI performed by ENSR. The locations of the former USTs are shown on Figure 14.

5.1.3.2.2 Maintenance and Integrity History

No information pertaining to tank maintenance and integrity testing were found.

5.1.3.2.3 Environmental History

A detailed description of the field activities and findings can be reviewed in the ENSR Phase I Remedial Investigation Report dated November 1996. A summary is provided below.

On April 6 and 7, 1995, three test pits were completed using a backhoe at the former UST locations. Goldstar, Inc. of Middlesex, New Jersey performed excavation activities under the supervision of an ENSR geologist. In addition, on April 18, 1995, Advanced Drilling Inc. of New Holland, Pennsylvania performed four soil borings.

No BTEX compounds were detected in the 15 soil samples collected. All lead concentrations detected were below the NJNRSCC for lead. All TPH concentrations were below the 10,000 mg/kg total organic compound soil cleanup criteria.

5.1.4 Silos (PA Form Question A3)

There are no silos at the West Side facility.

5.1.5 Rail Cars (PA Form Question A4)

Rail cars are used for the transportation of product stored at the West Side facility. Rail car operations are addressed under Section 5.1.6 Loading and Unloading Areas. Currently, East Jersey Rail Road operates at the West Side facility. Rail cars are

occasionally staged at the facility. The layout of the rail tracks on the West Side property is shown on **Figure 15**.

5.1.6 Loading and Unloading Areas (PA Form Question A5)

There are thirty-one loading racks at the West Side facility. Each is described below and the locations are shown on **Figure 16**.

5.1.6.1 AOC-W-238 Y1-LR-C

5.1.6.1.1 General Information

AOC-W-238 Y1-LR-C is an asphalt loading rack located on the west side of ASTs 1704 and 1703 in Yard 1. IMTT currently uses the rack for petroleum/bulk oil products.

5.1.6.1.2 Site Inspection

In October 2004, a visual inspection of AOC-W-238 Y1-LR-C was conducted. Staining was observed during the site inspection of the area. The area north, south, and west of the loading rack is paved without a secondary containment system. A railroad track is located on the east side of the rack.

5.1.6.2 AOC-W-239 Y1-LR-D

5.1.6.2.1 General Information

AOC-W-239 Y1-LR-D is an asphalt loading rack located west of ASTs 1703 and 1702 in Yard 1. It is currently not being used and is idle.

5.1.6.2.2 Site Inspection

In October 2004, a visual inspection of AOC-W-239 Y1-LR-D was conducted. Staining was observed during the site inspection of the area. The area around the loading rack is unpaved without a secondary containment system.

5.1.6.3 AOC-W-240 Y1-LR-E

5.1.6.3.1 General Information

AOC-W-240 Y1-LR-E is an asphalt loading rack that is located on southwest of AST 1702 in Yard 1.

5.1.6.3.2 Site Inspection

In October 2004, a visual inspection of AOC-W-240 Y1-LR-E was conducted. Staining was observed during the site inspection of the area. The area around the loading rack is unpaved without a secondary containment system.

5.1.6.4 AOC-W-241 Y1-LR-O2

5.1.6.4.1 General Information

AOC-W-241 Y1-LR-O2 is a former No. 2 oil truck loading area located west of AST 1011. This loading area is currently idle.

5.1.6.4.2 Site Inspection

In October 2004, a visual inspection of AOC-W-241 Y1-LR-O2 was conducted. Staining was observed during the site inspection of the area.

5.1.6.5 AOC-W-242 Y1-LR-8

5.1.6.5.1 General Information

AOC-W-242 Y1-LR-8 is located west of ASTs 1710 and 1119 in Yard 1. It is currently used as a diisobutylene (Accuload II) loading rack.

5.1.6.5.2 Site Inspection

In October 2004, a visual inspection of AOC-W-242 Y1-LR-8 was conducted. Minor staining was observed during the inspection. A concrete secondary containment

was observed around the loading rack. There is asphalt surrounding the rack on three sides, with a railroad track on the fourth side (east side).

5.1.6.6 AOC-W-243 Y1-LR-5R

5.1.6.6.1 General Information

AOC-W-243 Y1-LR-5R is a rail loading rack that is located south of ASTs 1220 and 1123 in Yard 1. It is currently used as a loading rack for caustic soda and petroleum products.

5.1.6.6.2 Site Inspection

In October 2004, a visual inspection of AOC-W-243 Y1-LR-5R was conducted. No staining was observed during the inspection. There is a concrete secondary containment system around the rack and it is located within a bermed area.

5.1.6.7 AOC-W-244 Y1-LR-2R

5.1.6.7.1 General Information

AOC-W-244 Y1-LR-2R is a rail loading rack that is located south of AST 1700 in Yard 1. It is currently used as an unloading rack for solvents and petroleum products (Accuload II).

5.1.6.7.2 Site Inspection

In October 2004, a visual inspection of AOC-W-244 Y1-LR-2R was conducted. No staining was observed near the rail rack during the inspection. The rack is metal with a secondary containment system and is located within a bermed area.

5.1.6.8 AOC-W-245 Y1-LR-G

5.1.6.8.1 General Information

AOC-W-245 Y1-LR-G is truck loading rack located on the shore northwest of the Mobil Pier in Yard 1. It is currently used as a petrolite (Accuload II) loading rack.

5.1.6.8.2 Site Inspection

In October 2004, a visual inspection of AOC-W-245 Y1-LR-G was conducted. No staining was observed near the loading rack during the inspection. The loading area consists of a concrete pad that is contained on three sides. One side is open to allow access to drive down a ramp to the transfer equipment.

5.1.6.9 AOC-W-246 Y2-LR-2

5.1.6.9.1 General Information

AOC-W-246 Y2-LR-2 is located southwest of the AST row 2176-2179 in Yard 2. It is currently used for the loading of miscellaneous liquids.

5.1.6.9.2 Site Inspection

In October 2004, a visual inspection of AOC-W-246 Y2-LR-2 was conducted. No staining was observed near the loading rack during the inspection. The loading area was concrete with a secondary containment system and is surrounded by pavement on all sides.

5.1.6.10 AOC-W-247 Y2-LR-4

5.1.6.10.1 General Information

AOC-W-247 Y2-LR-4 is a loading rack that is located west of ASTs 2132, 2134, and 2136 in Yard 2. It is currently idle and not being used to transfer products.

5.1.6.10.2 Site Inspection

In October 2004, a visual inspection of AOC-W-247 Y2-LR-4 was conducted. Minor staining was observed near the loading rack during the inspection. The loading area is concrete with a secondary containment system and is surrounded by pavement on all sides.

5.1.6.11 AOC-W-248 Y2-LR-1A

5.1.6.11.1 General Information

AOC-W-248 Y2-LR-1A is a loading rack that is located south of the Platty Kill Pond in Yard 2. It is currently used as a plasticizer loading rack.

5.1.6.11.2 Site Inspection

In October 2004, a visual inspection of AOC-W-248 Y2-LR-1A was conducted. There was staining present near the loading rack during the inspection conducted. The loading area and the surrounding area are paved. The rack is positioned within a bermed area.

5.1.6.12 AOC-W-249 Y2-LR-1B

5.1.6.12.1 General Information

AOC-W-249 Y2-LR-1B is a loading rack that is located west of AST 2153 in Yard 2. This loading rack is currently used to transfer plasticizers.

5.1.6.12.2 Site Inspection

In October 2004, a visual inspection of AOC-W-229 Y2-LR-1B was conducted. Staining was observed during the inspection. The loading area and the surrounding area are paved. The rack is positioned within a bermed area.

5.1.6.13 AOC-W-230 Y2-LR-3R

5.1.6.13.1 General Information

AOC-W-230 Y2-LR-3R is a rail loading rack that is located south of the former Platty Kill Pond in Yard 2. This loading rack is currently used to transfer plasticizers.

5.1.6.13.2 Site Inspection

In October 2004, a visual inspection of AOC-W-230 Y2-LR-3R was conducted. Slight staining was observed near the loading area. The rack is constructed of metal and has a secondary containment system and concrete around it.

5.1.6.14 AOC-W-231Y2-LR-19

5.1.6.14.1 General Information

AOC-W-231 Y2-LR-19 is an unloading area for trucks that is located in Yard 2. This loading rack is currently used to transfer miscellaneous liquids.

5.1.6.14.2 Site Inspection

In October 2004, a visual inspection of AOC-W-231 Y2-LR-19 was conducted. Slight staining was observed near the loading area. The rack is constructed of metal and has a secondary containment system and concrete around it.

5.1.6.15 AOC-W-232 Y2-LR-20

5.1.6.15.1 General Information

AOC-W-232 Y2-LR-20 is a vac truck connection that is located in Yard 2. This loading rack is currently used to transfer mixed plasticizers.

5.1.6.15.2 Site Inspection

In October 2004, a visual inspection of AOC-W-232 Y2-LR-20 was conducted. Slight staining was observed near the loading area.

5.1.6.16 AOC-W-233 Y3-LR-9

5.1.6.16.1 General Information

AOC-W-233 Y3-LR-9 is a loading rack hat is located on the southeast corner of the lagoon in Yard 3. It is currently used to transfer petroleum products and miscellaneous liquids.

5.1.6.16.2 Site Inspection

In October 2004, a visual inspection of AOC-W-233 Y3-LR-9 was conducted. Minor staining was observed near the loading rack during the inspection. The loading area is concrete and is positioned inside of a bermed area. The area around the rack is unpaved.

5.1.6.17 AOC-W-234 Y3-LR-10

5.1.6.17.1 General Information

AOC-W-234 Y3-LR-10 is a loading rack that is located east of ASTs 3182 and 3183 in Yard. The loading rack is currently idle and is not being used to transfer products.

5.1.6.17.2 Site Inspection

In October 2004, a visual inspection of AOC-W-234 Y3-LR-10 was conducted. The loading area is on concrete with pavement around it and it is positioned within a bermed area.

5.1.6.18 AOC-W-235 Y3-LR-11R

5.1.6.18.1 General Information

AOC-W-235 Y3-LR-11R is a rail loading rack that is located on the west side of AST 3179 in Yard 3. This loading rack is used for the transfer of petroleum products and miscellaneous liquids.

5.1.6.18.2 Site Inspection

In October 2004, a visual inspection of AOC-W-235 Y3-LR-11R was conducted. Staining was observed near the rail loading rack during the inspection. The rack is constructed of metal and has a secondary containment system around it. There is pavement on the west side of the rack (a roadway). The rack is located outside of a bermed area.

5.1.6.19 AOC-W-236 Y3-LR-3

5.1.6.19.1 General Information

AOC-W-236 Y3-LR-3 is a loading rack that is located north of ASY 3105 in Yard 3. This loading rack is used for the transfer of solvents (Accuload II).

5.1.6.19.2 Site Inspection

In October 2004, a visual inspection of AOC-W-236 Y3-LR-3 was conducted. The loading rack is constructed of concrete and is located within a bermed area, with pavement surrounding it on all sides.

5.1.6.20 AOC-W-237 Y3-LR-12R

5.1.6.20.1 General Information

AOC-W-237 Y3-LR-12R is a rail unloading rack that is located in Yard 3. It is currently used as a loading rack for solvents (Accuload II).

5.1.6.20.2 Site Inspection

In October 2004, a visual inspection of AOC-W-237 Y3-LR-12R was conducted. The unloading area is equipped with a metal secondary containment system and is surrounded by pavement on all sides.

5.1.6.21 AOC-W-238 Y3-LR-VT3

5.1.6.21.1 General Information

AOC-W-238 Y3-LR-VT3 is a vac truck unloading area that is located in Yard 3 that is located near ASTs 3185 thru 3179. It is currently used for unloading product from vac trucks.

5.1.6.21.2 Site Inspection

In October 2004, a visual inspection of AOC-W-238 Y2-LR-VT3 was conducted. Slight staining was observed near the loading area.

5.1.6.22 AOC-W-239 Y3-LR-21

5.1.6.22.1 General Information

AOC-W-239 Y3-LR-21 is a truck loading rack that is located in Yard 3.

5.1.6.22.2 Site Inspection

In October 2004, a visual inspection of AOC-W-239 Y3-LR-21 was conducted. Slight staining was observed near the loading area.

5.1.6.23 AOC-W-240 Y4-LR-J

5.1.6.23.1 General Information

AOC-W-240 Y4-LR-J is a tank, truck and rail loading rack that is located on the west side of the rail lines that run north-south in Yard 4. The loading rack is currently used to transfer butane.

5.1.6.23.2 Site Inspection

In October 2004, a visual inspection of AOC-W-240 Y4-LR-J was conducted. The loading rack is located outside of a bermed area and the area around it is unpaved. There is no secondary containment system around the loading area and no concrete was incorporated into its construction.

5.1.6.24 AOC-W-241 Y5-LR-H

5.1.6.24.1 General Information

AOC-W-241 Y5-LR-H is a loading rack that is located southeast of AST 5161 in Yard 5. It is currently idle and is not used to transfer product.

5.1.6.24.2 Site Inspection

In October 2004, a visual inspection of AOC-W-241 Y5-LR-H was conducted. The rack appeared rusted but no oil staining was visible. It is located on a paved area but there is no secondary containment system around the rack.

5.1.6.25 AOC-W-242 Y5-LR-VT2

5.1.6.25.1 General Information

AOC-W-242 Y5-LR-VT2 is a vac truck unloading rack that is located south of AST 5211 in Yard 5. It is currently used to transfer product from vac trucks.

5.1.6.25.2 Site Inspection

In October 2004, a visual inspection of AOC-W-242 Y2-LR-VT2 was conducted. Slight staining was observed near the loading area.

5.1.6.26 AOC-W-243 Y5-LR-PB2

5.1.6.26.1 General Information

AOC-W-243 Y5-LR-PB2 is a former truck unloading area that is located between ASTs 5184 and AST 5186 in Yard 5. This loading area is currently idle, but was formerly used to unload butane.

5.1.6.26.2 Site Inspection

In October 2004, a visual inspection of AOC-W-243 Y2-LR-PB2 was conducted. Slight staining was observed near the loading area.

5.1.6.27 AOC-W-244 Y6-LR-PB1

5.1.6.27.1 General Information

AOC-W-244 Y6-LR-PB1 is a former truck unloading rack that is located north of AST 6003 in Yard 6. This unloading area is currently idle, but was formerly used to unload butane.

5.1.6.27.2 Site Inspection

In October 2004, a visual inspection of AOC-W-244 Y2-LR-PB1 was conducted. Slight staining was observed near the loading area. This unloading area is located outside of the diked area for AST 6003.

5.1.6.28 AOC-W-245 Y6-LR-VT1

5.1.6.28.1 General Information

AOC-W-245 Y6-LR-VT1 is a vac truck unloading rack that is located near ASTs 6105 and 6106 in Yard 6. It is currently used to transfer product from vac trucks.

5.1.6.28.2 Site Inspection

In October 2004, a visual inspection of AOC-W-245 Y2-LR-VT1 was conducted. Slight staining was observed near the loading area.

5.1.6.29 AOC-W-246 Y6-LR-TM

5.1.6.29.1 General Information

AOC-W-246 Y6-LR-TM is a loading rack that is located near ASTs 6100 and 6101 in Yard 6. It is currently used to transfer transmix products.

5.1.6.29.2 Site Inspection

In October 2004, a visual inspection of AOC-W-246 Y2-LR-TM was conducted. Slight staining was observed near the loading area.

5.1.6.30 AOC-W-247 Y6-LR-A

5.1.6.30.1 General Information

AOC-W-247 is a tank, truck and rail unloading rack that is located in Yard 6 east of ASTs 6008 and 6009. It is currently used as a butane unloading rack.

5.1.6.30.2 Site Inspection

In October 2004, a visual inspection of AOC-W-247 was conducted. Staining was observed during the site inspection of the area. The area around the loading rack is unpaved without a secondary containment system.

5.1.6.31 AOC-W-248 Y6-LR-B

5.1.6.31.1 General Information

AOC-W-248 Y6-LR-B is an asphalt loading racks located in Yard 6 east of AOC-W-247 Y6-LR-A. It is currently being used for bulk oil/asphalt loading and unloading.

5.1.6.31.2 Site Inspection

In October 2004, a visual inspection of AOC-W-248 Y6-LR-B was conducted. Staining was observed during the site inspection of the area. The area immediately beneath the rack is paved without a secondary containment system.

5.1.7 Piping, Pumping Stations, Sumps, and Pits (PA Form Question A6)

There are sixty-six pump pads at the east side facility. The locations of the pump pads are shown on **Figure 17**.

5.1.7.1 AOC-W-249 PU-1

5.1.7.1.1 General Information

AOC-W-249 PU-1 is a concrete pump pad with a secondary containment system around the pump. The pad is located adjacent to AST 6105 in Yard 6. The pump is identified as the sphere TKS pump.

5.1.7.1.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.2 AOC-W-250 PU-2

5.1.7.2.1 General Information

AOC-W-250 PU-2 is a concrete pump pad with a secondary containment system around the pad. The pad is located inside an earthen berm near ASTs 6003, 6004, 6005, and 6006 in Yard 6. The pump pad is referred to by IMTT as the Shell pump and the new big pump.

5.1.7.2.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed near this pump pad.

5.1.7.3 AOC-W-251 PU-3

5.1.7.3.1 General Information

AOC-W-251 PU-3 is a concrete pump pad with a secondary containment system around the pump. The pad is located inside of the earthen berm near ASTs 6005, 6006, 6011, and 6012 in Yard 6. IMTT personnel refer to the pump as a circ pump.

5.1.7.3.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed near this pump pad.

5.1.7.4 AOC-W-252 PU-4

5.1.7.4.1 General Information

AOC-W-252 PU-4 does not have a concrete pad underneath the pumps. It is located outside of the diked area that contains ASTs 6003, 6004, 6005, 6006, 6011 and 6012 in Yard 6. The pumps associated with PU-4 are identified as the Pit 2 pumps referred to by IMTT personnel as Ethyl II and Big Wally.

5.1.7.4.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.5 AOC-W-253 PU-5

5.1.7.5.1 General Information

AOC-W-253 PU-5 is a concrete pad that is located in Yard 6. The pumps associated with PU-5 are identified as pipeline transmix and gas set-up pumps.

5.1.7.5.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.6 AOC-W-254 PU-6

5.1.7.6.1 General Information

AOC-W-254 PU-6 is a concrete pad that is located in Yard 6. The pumps associated with PU-6 are identified as pipeline booster pumps.

5.1.7.6.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.7 AOC-W-255 PU-7

5.1.7.7.1 General Information

AOC-W-255 PU-7 is a concrete pad with minimal secondary containment. This pump pad is located outside of the diked area on the east side of ASTs 6003 and 6006 in Yard 6. The pump associated with PU-7 is identified as MET pump.

5.1.7.7.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed near this pump pad.

5.1.7.8 AOC-W-256 PU-8

5.1.7.8.1 General Information

AOC-W-256 PU-8 is a concrete pad that is located within a concrete berm on the east side of AST 6011 in Yard 6. The pump associated with PU-8 is identified as a jet pump.

5.1.7.8.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.9 AOC-W-257 PU-9

5.1.7.9.1 General Information

AOC-W-257 PU-9 is located inside of the diked area that contains ASTs 6007, 6008, 6009, and 6010 in Yard 6. The pumps associated with PU-9 are identified as a circ pumps. One pump is located near AST 6008 and another pump is located near AST 6007.

5.1.7.9.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.10 AOC-W-258 PU-9A

5.1.7.10.1 General Information

AOC-W-258 PU-9A is located inside of the diked area that contains ASTs 6007, 6008, 6009, and 6010 in Yard 6. The pumps associated with PU-9A are identified as jet pumps that are located west of AST 6010.

5.1.7.10.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.11 AOC-W-259 PU-10

5.1.7.11.1 General Information

AOC-W-259 PU-10 does not have a concrete pad underneath the pumps. It is located outside of the diked area that contains AST's 6002, 6007, 6008, 6009, and 6010, on the south side of ASTs 6009 and 6010 in Yard 6. The pumps associated with PU-10 are identified as the Pit 1 pumps and are referred to by IMTT personnel as JP-4 Pump and Flying A Pump.

5.1.7.11.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.12 AOC-W-260 PU-10A

5.1.7.12.1 General Information

AOC-W-260 PU-10A is located inside of the diked area that contains ASTs 6007, 6008, 6009, and 6010 in Yard 6. The pumps associated with PU-9A are identified as jet pumps that are located east of AST 6009.

5.1.7.12.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.13 AOC-W-261 PU-11

5.1.7.13.1 General Information

AOC-W-261 PU-11 is located within an earthen berm area, adjacent to ASTs 6203 and 6204 in Yard 6. There is no secondary containment system around the pumps.

The pumps associated with PU-11 are identified as pumps for ASTs 6203 and 6204, E & W, and one big pump.

5.1.7.13.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed near this pump pad.

5.1.7.14 AOC-W-262 PU-12

5.1.7.14.1 General Information

AOC-W-262 PU-12 is located within an earthen berm area, next to ASTs 6205 and 6206 in Yard 6. The pumps associated with PU-12 are identified as pumps for ASTs 6205 and 6206, N & S, and one big pump.

5.1.7.14.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.15 AOC-W-263 PU-13

5.1.7.15.1 General Information

AOC-W-263 PU-13 is a concrete pad with a secondary containment system around the pump. The pad is located inside of the earthen berm area on the west side of ASTs 1703 and 1704 in Yard 1. The pump associated with PU-13 is identified as the 1703 large pump.

5.1.7.15.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed near this pump pad.

5.1.7.16 AOC-W-264 PU-14

5.1.7.16.1 General Information

AOC-W-264 PU-14 is a concrete pad with a secondary containment system around the pumps. The pad is located inside of the earthen berm area north of AST 1704 in Yard 1. The pumps associated with PU-14 are identified as the Asphalt rack pumps for Racks 1 and 2.

5.1.7.16.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed near this pump pad.

5.1.7.17 AOC-W-265 PU-15

5.1.7.17.1 General Information

AOC-WW-265 PU-15 is a concrete pad with a secondary containment system around the pump. The pad is located inside of the earthen berm area on the east side of ASTs 1703 and 1704 in Yard 1. The pump associated with PU-15 is identified as the asphalt heat exchanger pump.

5.1.7.17.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed on the pump pad upon inspection.

5.1.7.18 AOC-W-266 PU-15A

5.1.7.18.1 General Information

AOC-W-266 PU-15A is a concrete pad with a secondary containment system around the pump. The pad is located inside of the earthen berm area southeast of AST 1704 in Yard 1. The pump is used as an asphalt cargo pump for AST 1704, as well as a hot oil transfer pump.

5.1.7.18.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.19 AOC-W-267 PU-16

5.1.7.19.1 General Information

AOC-W-267 PU-16 is a concrete pad with a secondary containment system around the pumps. The pad is located inside of the bermed area on the east side of ASTs 1702 and 1703 in Yard 1. The pumps associated with PU-16 are identified as the hot oil tracing pumps and truck pumps for Racks 3, 4, and 5.

5.1.7.19.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed on the pump pad upon inspection.

5.1.7.20 AOC-W-268 PU-17

5.1.7.20.1 General Information

AOC-W-268 PU-17 is a concrete pad that is located within the earthen berm and is southwest of AST 1702 in Yard 1. The pump associated with PU-17 is identified as the 1702 small 6 oil pump.

5.1.7.20.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.21 AOC-W-269 PU-18

5.1.7.21.1 General Information

AOC-W-269 PU-18 is a concrete pad with a secondary containment system around the pump. The pad is located inside of the bermed area southeast of AST 1702 in Yard 1. The pump associated with PU-18 is identified as the 1702 asphalt cargo pump.

5.1.7.21.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed on the pump pad upon inspection.

5.1.7.22 AOC-W-270 PU-19

5.1.7.22.1 General Information

AOC-W-270 PU-19 is a concrete pad that is located within the earthen berm on the west side of ASTs 1159 and 1161 in Yard 1. The area around the pump is unpaved. The pump associated with PU-19 is identified as the 1058/1161 pump.

5.1.7.22.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.23 AOC-W-271 PU-19A

5.1.7.23.1 General Information

AOC-W-271 PU-19A is a concrete pad that is located within the earthen berm on the west side of AST 1161 in Yard 1. The area around the pump is unpaved. The pump is used for #2 fuel oil.

5.1.7.23.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No

evidence of obvious staining or releases was observed.

5.1.7.24 AOC-W-272 PU-20

5.1.7.24.1 General Information

AOC-W-272 PU-20 is located southwest of AST 1708 in Yard 1. The pump associated with PU-20 is identified as the 1708 pump.

5.1.7.24.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.25 AOC-W-273 PU-21

5.1.7.25.1 General Information

AOC-W-273 PU-21 is located on the west side of AST 1709 in Yard 1. The pump associated with PU-21 is identified as the 1709 pump.

5.1.7.25.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.26 AOC-W-274 PU-22

5.1.7.26.1 General Information

AOC-W-274 PU-22 is located on the east side of AST 1120 in Yard 1. The pump associated with PU-22 is identified as the caustic pier pump.

5.1.7.26.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.27 AOC-W-275 PU-23

5.1.7.27.1 General Information

AOC-W-275 PU-23 is located on the west side of ASTs 1120 and 1121 in Yard 1. The pump associated with PU-23 is identified as the 1120 pump/1124 truck loading pump.

5.1.7.27.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.28 AOC-W-276 PU-24

5.1.7.28.1 General Information

AOC-W-276 PU-24 is located south of AST 1124 in Yard 1. The pumps associated with PU-24 are identified by IMTT personnel as the 1121 pumps.

5.1.7.28.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.29 AOC-W-277 PU-25

5.1.7.29.1 General Information

AOC-W-277 PU-25 is a concrete pad with a secondary containment system around the pump. The pad is located south of AST 1220 in Yard 1. The pump associated with PU-25 is identified as the 1706 pump.

5.1.7.29.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No

evidence of obvious staining or releases was observed.

5.1.7.30 AOC-W-278 PU-26

5.1.7.30.1 General Information

AOC-W-278 PU-26 is located on asphalt outside of the diked area, near AST 1122 in Yard 1. The pump associated with PU-26 is the 1122 lube oil pump.

5.1.7.30.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.31 AOC-W-279 PU-27

5.1.7.31.1 General Information

AOC-W-279 PU-27 is a concrete pad with a secondary containment system. The pad is located outside of a diked area. It is south of AST 1700 and runs parallel to the shoreline on the west side of the Compound Building in Yard 1. The pumps associated with PU-27 are identified as the Yard 1 rail pumps and are used for solvents.

5.1.7.31.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.32 AOC-W-280 PU-28

5.1.7.32.1 General Information

AOC-W-280 PU-28 is located on the west side of AST 1700 in Yard 1. The pumps associated with PU-28 are identified as the 1700 pumps.

5.1.7.32.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.33 AOC-W-281 PU-29

5.1.7.33.1 General Information

AOC-W-281 PU-29 is located within a concrete berm area on the southwest side of AST 1701 in Yard 1. The pumps associated with PU-29 are identified as the 1701 pumps.

5.1.7.33.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.34 AOC-W-282 PU-30

5.1.7.34.1 General Information

AOC-W-282 PU-30 consists of concrete pads that are located within a concrete berm area, on the north side of ASTs 1173 and 1174 in Yard 1. The pumps associated with PU-30 are identified as the 1173 and 1174 pumps.

5.1.7.34.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No obvious staining was observed on the pump pads upon inspection.

5.1.7.35 AOC-W-283 PU-31

5.1.7.35.1 General Information

AOC-W-283 PU-31 pumps are located on concrete pads with secondary containment systems around the pumps. The pads are located within a concrete berm

area on the north side of ASTs 1175 and 1176 in Yard 1. The pumps associated with PU-31 are identified as the 1175 and 1176 pumps.

5.1.7.35.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed on the pump pads upon inspection.

5.1.7.36 AOC-W-284 PU-32

5.1.7.36.1 General Information

AOC-W-284 PU-32 is a concrete pad with a secondary containment system. The pad is located within an earthen berm area east of AST 1109 in Yard 1. The pumps associated with PU-32 are the Yard 1 #2 oil pumps.

5.1.7.36.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.37 AOC-W-285 PU-33

5.1.7.37.1 General Information

AOC-W-285 PU-33 is a concrete pad with a secondary containment system. The pad is located within a bermed area south of AST 1105 in Yard 1. The pump associated with PU-33 is referred to as the 1105 pump.

5.1.7.37.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining was observed on the pump pad upon inspection.

5.1.7.38 AOC-W-286 PU-34

5.1.7.38.1 General Information

AOC-W-286 PU-34 is a concrete pad with a secondary containment system. The pad is located within an earthen berm area on the east side of AST 1104 in Yard 1. The pump associated with PU-34 is identified as the 1104 #6 fuel oil pump.

5.1.7.38.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.39 AOC-W-287 PU-35

5.1.7.39.1 General Information

AOC-W-287 PU-35 is a concrete pad with a secondary containment system. The pad is located outside a diked area, on the south side of AST 1034 in Yard 1. The pump associated with PU-35 is identified as the 1034 pump.

5.1.7.39.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.40 AOC-W-288 PU-36

5.1.7.40.1 General Information

AOC-W-288 PU-36 is a concrete pad with a secondary containment system. The pad is located outside a diked area, on the south side of tank 1210 in Yard 1. The pump associated with PU-36 is identified as the hot oil tracing pump.

5.17.40.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Staining

was observed on the pump pad upon inspection.

5.1.7.41 AOC-W-289 PU-37

5.1.7.41.1 General Information

AOC-W-289 PU-37 is located on the west side of the Boiler House in Yard 2. The pumps associated with PU-37 are the Hot Oil House circ pumps.

5..7.41.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.42 AOC-W-290 PU-38

5.1.7.42.1 General Information

AOC-W-290 PU-38 is a concrete pad with a secondary containment system. The pad is located outside of a diked area north of the P&S Building and south of ASTs 2176, 2177, 2178, and 2179 in Yard 2. The pumps associated with PU-38 are identified as the Blue 2 filters and pumps.

5.1.7.42.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.43 AOC-W-291 PU-39

5.1.6.43.1 General Information

AOC-W-291 PU-39 is a concrete pad with a secondary containment system. The pad is located outside of a diked area west of ASTs 2132, 2134, and 2136 in Yard 2. The pump associated with PU-39 is identified as the Yard 2 pump.

5.1.7.43.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.44 AOC-W-292 PU-40

5.1.7.44.1 General Information

Pump pad PU-40 is a concrete pad with a secondary containment system. The pad is located within an earthen berm in Yard 2. The pad contains several pumps and runs parallel and between 2 tank rows, ASTs 2121-2125 on the west side and 2101-2105 on the east side.

5.1.7.44.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. Evidence of staining was observed on the pump pad upon inspection.

5.1.7.45 AOC-W-293 PU-41

5.1.7.45.1 General Information

AOC-W-293 PU-41 is constructed of a metal bottom positioned on an unpaved area. There is no concrete pad underneath the pumps. PU-41 is located south of ASTs 2143, 2144, and 2145 in Yard 2.

5.1.7.45.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.46 AOC-W-294 PU-42

5.1.7.46.1 General Information

AOC-W-294 PU-42 is a concrete pad that is located within an earthen berm south of the tank row containing ASTs 2153, 2154, 2151, 2150, 2149, and 2155 in Yard 2. The pumps on this pad are used for solvents.

5.1.7.46.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.47 AOC-W-295 PU-43

5.1.7.47.1 General Information

AOC-W-295 PU-43 is a concrete pad with a secondary containment system. The pad is located within an earthen berm south of ASTs 2141, 2152, and 2156.

5.1.7.47.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.48 AOC-W-296 PU-44

5.1.7.48.1 General Information

AOC-W-296 PU-44 is a concrete pad with a secondary containment system. The pad is located south of the former Platty Kill Pond in Yard 2. The pumps associated with PU-44 are identified as the plasticizer pumps.

5.1.7.48.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. There was evidence of staining on the pump pad upon inspection.

5.1.7.49 AOC-W-297 PU-44A

5.1.7.49.1 General Information

AOC-W-297 PU-44A is a concrete pad with a secondary containment system. The pad is located south of the former Platty Kill Pond in Yard 2. The pumps associated with PU-44 are identified as the plasticizer pumps for the rail car unloading rack.

5.1.7.49.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.50 AOC-W-298 PU-45

5.1.7.50.1 General Information

AOC-W-298 PU-45 is located on the northeast corner of AG19 in Yard 3. The pumps associated with PU-45 are identified as the 3100s pumps.

5.1.7.50.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.51 AOC-W-299 PU-46

5.1.7.51.1 General Information

AOC-W-299 PU-46 is a concrete pad with a secondary containment system around the pumps. The pad is located outside of a diked area, east of ASTs 3105 and 3107 in Yard 3. The pumps associated with PU-46 are identified as the Green 3 pumps.

5.1.7.51.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No

evidence of obvious staining or releases was observed.

5.1.7.52 AOC-W-300 PU-47

5.1.7.52.1 General Information

AOC-W-300 PU-47 is a concrete pad with a secondary containment system around the pumps. The pad is located outside of a diked area, northwest of ASTs 3118 and 3119 and adjacent to loading rack #12R in Yard 3. The pumps associated with PU-47 are identified as the Green 3 pumps, along with those pumps on PU-46.

5.1.7.52.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.53 AOC-W-301 PU-48

5.1.7.53.1 General Information

AOC-W-301 PU-48 is a concrete pad with a secondary containment system around the pumps. The pad is located within a diked area that is partially earthen and partially concrete. It is east of ASTs 3922 and 3924 in Yard 3. The pumps associated with PU-48 are identified as the 3900s pumps.

5.1.7.53.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. There was evidence of staining on the pump pad upon inspection.

5.1.7.54 AOC-W-302 PU-49

5.1.7.54.1 General Information

AOC-W-302 PU-49 is a concrete pad with a secondary containment system around the pumps. The pad is located within an earthen berm, east of ASTs 3843 and 3844 in Yard 3. The pumps associated with PU-49 are identified as the 3800s pumps.

5.1.7.54.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.55 AOC-W-303 PU-50

5.1.7.55.1 General Information

AOC-W-303 PU-50 is a concrete pad that is located outside of a diked area, west of AST 5810 in Yard 5. The pumps associated with PU-50 are identified as the Pit 4 pumps.

5.1.7.55.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.56 AOC-W-304 PU-51

5.1.7.56.1 General Information

AOC-W-304 PU-51 is a concrete pad that is located within an earthen berm, which is partially brick. It is positioned south of ASTs 5211 and 5214 in Yard 5. The pumps associated with PU-51 are identified as the 6 Pack circulation pumps.

5.1.7.56.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No

evidence of obvious staining or releases was observed.

5.1.7.57 AOC-W-305 PU-52

5.1.7.57.1 General Information

Pump pad PU-52 is a concrete pad that is located with an earthen berm, southeast of AST 5059 in Yard 5. The pumps associated with PU-52 are identified as the Pit 3 pumps.

5.1.7.57.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.58 AOC-W-306 PU-53

5.1.7.58.1 General Information

AOC-W-306 PU-53 is a concrete pad with a secondary containment system around the pumps. The pad is located within an earthen berm, on the northeast corner of AST 5057 in Yard 5. The pumps associated with PU-53 are identified as the 5057/5059 circ pumps.

5.1.7.58.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.59 AOC-W-307 PU-54

5.1.7.59.1 General Information

AOC-W-307 PU-54 is a concrete pad that is located with a concrete diked area, northeast of AST 5156 in Yard 5. The pumps associated with PU-54 are identified as the 5156 circ pumps.

5.1.7.59.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.60 AOC-W-308 PU-55

5.1.7.60.1 General Information

AOC-W-308 PU-55 is a concrete pad that is located within an earthen diked area, north of AST 5064 in Yard 5. The pumps associated with PU-55 are identified as the 5085/5064 circ pumps.

5.1.7.60.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.61 AOC-W-309 PU-55A

5.1.7.61.1 General Information

AOC-W-309 PU-55A is a concrete pad that is located within an earthen diked area, south of AST 5070 in Yard 5. The pump associated with PU-55A is identified as the 5070 circ pump.

5.1.7.61.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.62 AOC-W-310 PU-56

5.1.7.62.1 General Information

AOC-W-310 PU-56 is a concrete pad that is located within an earthen diked area, north of AST 5077 in Yard 5. The pump associated with PU-55 identified as the 5077/5076 circ pump.

5.1.7.62.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.63 AOC-W-311 PU-57

5.1.7.63.1 General Information

AOC-W-311 PU-57 is a concrete pad that is located within a concrete diked area, northwest of AST 5808 in Yard 5. The pumps associated with PU-57 are identified as the Pit 5 pumps.

5.1.7.63.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.64 AOC-W-312 PU-58

5.1.7.64.1 General Information

AOC-W-312 PU-58 is a concrete pad that is located within an earthen berm in the center of the four ASTs 5186, 5801, 5802, and 5803 in Yard 5. The pump associated with PU-58 is identified as the 5801/5802 circ pump.

5.1.7.64.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No

evidence of obvious staining or releases was observed.

5.1.7.65 AOC-W-313 PU-59

5.1.7.65. 1 General Information

AOC-W-313 PU-59 is a concrete pad that is located within a diked area that is partially earthen and partially concrete. It is positioned southeast of AST 5164 in Yard 5. The pump associated with PU-59 is a circ pump.

5.1.7.65.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.1.7.66 AOC-W-314 PU-60

5.1.7.66.1 General Information

AOC-W-314 PU-60 is a concrete pad that is located within an earthen berm, north of ASTs 5187 and 5188 in Yard 5. There is no secondary containment system around the pumps. The pumps associated with PU-60 are identified as Pit 6 pumps.

5.1.7.66.2 Site Inspection

On October 12, 2004, a site inspection of the pump pad was conducted. No evidence of obvious staining or releases was observed.

5.2 Storage and Staging Areas (PA Form Question B)

5.2.1 Storage Pads (PA Form Question B1)

5.2.1.1 AOC-W-315 Y1-SP

A small storage area is located inside of the Round House in Yard 1. Lubricant oil is stored in two 55-gallon drums with five-gallon drip buckets set up adjacent to them.

Bluestone inspected the storage area and no evidence of leaks was observed. The drums are located on a paved area.

5.2.2 Surface Impoundments, Lagoons (PA Form Question B2)

The following surface impoundment locations are shown on **Figure 18**.

5.2.2.1 AOC-W-316 Y1-FSI

In November 1996, ENSR conducted a review of aerial photographs as part of a Phase I Remedial Investigation Report (ENSR, 1996). As previously reported during the review of the 1970 aerial photograph, the presence of a possible surface impoundment was identified in Yard 1. This impoundment would have been located south of AST 1700 and on the west side of the building that is presently identified as the Electrical Building. This area was not present on the 1963 aerial photograph, nor was present in the 1977 aerial photograph. Other than the 1970 aerial photograph, there is no other documentation that indicated the presence of this impoundment.

5.2.2.2 AOC-W-317 Y1-FSI-B

Based on a review of a 1913 site plan entitled "Revised Map of Tide Water Oil Co. Refinery and Adjacent Property at Bayonne, New Jersey", an area denoted as

"Settling Ponds" was shown along the western boundary of Yard 1. Other than the 1913 site plan, there is no other documentation that indicated the presence of this impoundment.

5.2.2.3 AOC-W-318 Y1-FSI-C

Based on a review of a 1912 site plan entitled "Map of Tide Water Oil Co. Refinery and Adjacent Property at Bayonne, New Jersey", an area denoted as the "Green Sea" was shown in the north-west corner of Yard 1. Other than the 1912 site plan, there is no other documentation that indicated the presence of this impoundment.

5.2.2.4 AOC-W-319 Y3-SI

Currently, a lined wastewater treatment lagoon is located in Yard 3. This lagoon is part of the present wastewater treatment system and holds storm water after it exits the oil/water separator prior to treatment by induced air floatation and carbon adsorption. Based on the aerial photograph review, this impoundment was constructed some time between 1977 and 1984. Further review of a construction drawing dated May 30, 1978 indicates the impoundment was constructed between 1978 and 1979. This lagoon has a capacity of approximately 900,000 gallons, is elevated approximately 6 feet above grade level, and is approximately 116 feet wide and 194 feet long. This impoundment is incorporated into the site's contemporaneous NJPDES permitted treatment train.

5.2.2.5 AOC-W-320 Y3-FSI-A

5.2.2.5.1 General Information

An L-shaped former surface impoundment, identified on the 1921 site plan was located in the area of the existing wastewater treatment plant. This former impoundment was not present on the 1947 aerial photograph or the 1948 site plan. Sanborn fire maps from 1898 and 1912 do not indicate the presence of this former surface impoundment. However, a 1950 Sanborn indicates a relatively square-shaped area identified as a

Settling Pond "Black Sea" on the same location as the L-shaped impoundment identified on the 1921 site plan. Most likely the impoundment identified on the 1950 Sanborn map represents a structure that had been constructed at that location some time between 1912 and 1947, as the 1947 aerial photograph indicates the presence of buildings and tanks in this area. No additional information concerning the history of this surface impoundment was available at this time.

5.2.2.5.2 Environmental History

Soil borings were performed and soil samples collected and analyzed to determine if this impoundment was present in the location indicated on the 1921 site plan. The detailed results of these activities were provided to the NJDEP in the ENSR Phase I Remedial Investigation Report dated November 1996 (ENSR, 1996).

Results from ENSR soil samples collected at this AOC indicate the presence of total xylenes and TPH above their respective impact to groundwater soil clean-up criteria. The presence of what appeared to be a residual sludge layer was observed at a depth of 2 to 4 feet below ground surface. No measurable thickness of free-phase product was detected in the monitoring well installed at this AOC. Results from two rounds of groundwater sampling conducted indicate the presence of benzene, chlorobenzene, and xylenes above their respective groundwater quality criteria.

5.2.2.6 AOC-W-321 Y3-FSI-B

Based on a review of a 1912 site plan entitled "Map of Tide Water Oil Co. Refinery and Adjacent Property at Bayonne, New Jersey" and a 1913 site plan entitled "Revised Map of Tide Water Oil Co. Refinery and Adjacent Property at Bayonne, New Jersey", an area denoted as the "Black Sea" is shown in the area south of the wastewater treatment lagoon in Yard 3. Other than the 1912 and 1913 site plans, there is no other documentation that indicated the presence of this impoundment.

5.2.2.7 AOC-W-322 Y4-FSI

5.2.2.7.1 General Information

One surface impoundment, identified as a separator in the 1921 site plan, is known to have been present in the northwest corner of Yard 4. The separator was present in all aerial photographs reviewed between 1947 and 1977. Based on the aerial photographs, the separator was removed at some point between 1977 and 1984. The former location of the separator is no longer part of the IMTT property, as the northwest corner of Yard 4 was sold to the New Jersey Department of Transportation for the construction of Route 169.

5.2.2.7.2 Environmental History

As part of an RI, one monitoring well and soil boring was installed in the northwest corner of Yard 4 to evaluate the separator as a potential AOC. The complete results of these activities were provided to the NJDEP in the ENSR Phase I Remedial Investigation Report dated November 1996.

Results from soil samples collected from a soil boring associated with the installation of a monitoring well downgradient of a former surface impoundment (separator) located in the northwest corner of Yard 4 indicates no VOCs above the detectable limits, and TPH concentrations above the soil clean-up criteria in one of the samples. No measurable thickness of free-phase product was detected in the monitoring well installed in this AOC during the June 1995 groundwater sampling event. A free-phase product thickness was detected during the November 1995 groundwater sampling event. Groundwater sample results from the sample collected in June 1995 indicated the presence of 1,1,2,2-tetrachloroethane and benzene at concentrations slightly higher than their groundwater quality criteria. The appearance of free-phase product in the monitoring well at some point between the June and the November 1995 groundwater sampling events indicates a source other than the former separator.

Yard 4 was investigated as an area of concern with a cone penetrometer and pilot scale free oil recovery work has been proposed for the area.

5.2.2.8 AOC-W-323 Y5-SI

5.2.2.8.1 General Information

One existing surface impoundment has been identified in the northwest corner of Yard 5. This surface impoundment is a stormwater drainage basin, which currently drains stormwater from the Yard 5 dike areas, prior to being pumped to the on-site water treatment facility. This surface impoundment dates back to at least the 1920's. Reportedly, in 1981/1982 an unsuccessful attempt was made to fill in this drainage basin with fly ash. No other historical information concerning this drainage basin was discovered during the file review process.

5.2.2.8.2 Environmental History

As part of an RI, one monitoring well and soil boring was installed in the northwest corner of Yard 4 to evaluate the separator as a potential AOC. The complete results of these activities were provided to the NJDEP in the ENSR Phase I Remedial Investigation Report dated November 1996.

Results from soil samples collected from the soil boring associated with the installation of a monitoring well downgradient of this AOC indicates the presence of TPH above soil clean-up criteria. A measurable free-product thickness, identified as No. 2 fuel oil with a trace of gasoline, was detected in the monitoring well at the time of the June and November 1995 groundwater sampling events.

Yard 5 was investigated as an area of concern with a cone penetrometer and pilot scale free oil recovery work has been proposed for the area.

5.2.2.9 AOC-W-324 Y6-FSI-A

A possible former surface impoundment was noted on the aerial photographs in the northeast portion of Yard 6. This impoundment was noted on the 1959 aerial photograph east of AST 6008 and AST 6009. This area was noted on all aerial photographs from 1959 through 1977.

5.2.2.10 AOC-W-325 Y6-FSI-B

A drainage area was first noted in the 1959 aerial photograph in Yard 6 going from the dike area surrounding ASTs 6002, 6007, 6008, 6009, and 6010, into the vacant area north of Yard 6. This drainage area was much larger and more apparent in the 1963 aerial photograph and absent in the 1970 and subsequent aerial photographs.

5.2.2.11 AOC-W-326 Y6-FSI-C

A large area of ponded water was first noted on the extreme northeast corner of Yard 6 in the 1970 aerial photograph. Remnants of the pond were apparent on the 1977 aerial photograph and a small pond in the same area on the 1984 aerial photograph was also noted.

5.2.2.12 AOC-327 Y6-FSI-D, AOC-328 Y6-FSI-E, AOC-329 Y6-FSI-F

Three rectangular areas were first noted in the 1970 aerial photograph along the east border of Yard 6. These three areas were also present on the 1977 aerial photograph, but no longer present in the 1984 and subsequent aerial photographs.

5.2.3 Dumpsters (PA Form Question B3)

IMTT maintains several solid waste disposal units through out the West Side. These units are broken down into two main groups: 1) dumpster and 2) satellite collection areas. A description of each dumpster and collection area is provided below. The locations of these areas are shown on **Figure 19**.

Various waste streams are managed on-site by temporary storage in dumpster containers. Some of the containers are relatively permanent for solid waste refuse containers associated with office buildings.

IMTT retains Waste Management to service their trash and co-mingle recyclable dumpsters. Waste Management collects the solid waste from the IMTT facility and transports it to a transfer and sorting station in Newark, New Jersey. From there the material is transported to specific landfills or recycling centers.

IMTT retains Joe Torre Scrap Metals of North Bergen, New Jersey to service their recycling dumpsters. Joe Torre Scrap Metals collects the metal recyclables from the dumpsters and transports it to a transfer and sorting facility in North Bergen, New Jersey.

IMTT retains Clean Earth of North Jersey to service their sandblast and oil debris/soil dumpsters. Clean Earth collects the material from the IMTT dumpsters and transports it to a Clean Earth facility in South Kearny, New Jersey.

All records and manifests for solid waste disposal are carefully maintained by IMTT and are available upon request. In all cases, licensed haulers and disposal facilities handle wastes.

5.2.3.1 AOC-W-330 Y2-D-A

5.2.3.1.1 General Information

AOC-W-330 is a 6 cubic yard dumpster that is located on the northeast corner of the Old Main Building in Yard 2. The dumpster is used for general trash.

5.2.3.1.2 Environmental History and Site Inspection

On October 4, 2004, a site inspection was conducted of the AOC-W-330. The area is paved with no staining or evidence of a discharge associated with the use of the dumpsters. The dumpster was covered with a hard plastic hinged lid.

5.2.3.2 AOC-W-331 Y2-D-B

5.2.3.2.1 General Information

AOC-W-331 is a 20 cubic yard roll-off dumpster that is located in Yard 2, south of AST 2173. The dumpster is lined and is used for the storage of oily debris such as used sampling materials, rags, used sorbent material, used personal protective equipment, absorbent pads, etc.

5.2.3.2.2 Environmental History and Site Inspection

On October 4, 2004, a site inspection was conducted of the AOC-W-331 area. The dumpster is located in an unpaved area that is surrounded by a berm. The top of the container is covered with a poly tarp, which is held down with straps. The dumpster is lined.

5.2.3.3 AOC-W-332 Y6-D-A

5.2.3.3.1 General Information

AOC-W-332 is a 20 cubic yard roll-off located on an unpaved area east of AST 6009 in Yard 6. It is used for the storage of mixed non-hazardous soil. It may also contain non-hazardous oily debris.

5.2.3.3.2 Environmental History and Site Inspection

On October 4, 2004, a site inspection was conducted of the AOC-W-332 area. The top of the container is covered with a poly tarp, which is held down with straps. The dumpster is lined.

5.2.3.4 AOC-W-333 Y10-D-A and AOC-W-334 Y10-D-B

5.2.3.4.1 General Information

AOC-W-333 and AOC-W-334 includes two 20 cubic yard roll-offs that are located on an unpaved area in the northeast corner of Yard 6. The roll-offs are from Clean Earth New Jersey and are used to store sandblast material.

5.2.3.4.2 Environmental History and Site Inspection

On October 4, 2004, a site inspection was conducted of the AOC-W-333 area. The area is unpaved with no staining or evidence of a discharge associated with the use of the dumpsters. The dumpster is lined.

5.2.3.5 AOC-W-335 Y10-D-C and AOC-W-336 Y10-D-D

5.2.3.5.1 General Information

AOC-W-335 and AOC-W-336 are two roll-off dumpsters located on the eastern boundary of Yard 6. AOC-W-335 is used to store mixed metals and AOC-W-336 is for iron materials.

5.2.3.5.2 Environmental History and Site Inspection

On October 4, 2004, a site inspection was conducted of the AOC-W-335 and AOC-W-336 area. The area is unpaved with no staining or evidence of a discharge associated with the use of the dumpsters.

5.2.3.6 AOC-W-337 Y10-CA-A

5.2.3.6.1 General Information

AOC-W-337 is a universal waste collection area that is located in the northeast corner of the Co-Gen plant in Yard 10. Universal waste includes spent light bulbs/lamps, batteries, computers, electronics, etc.

5.2.3.6.2 Environmental History and Site Inspection

On October 4, 2004, a site inspection was conducted of the AOC-W-337. The area is paved with no staining or evidence of a discharge associated with the use of the dumpsters.

5.2.4 Chemical Storage Cabinets/Closets (PA Form Question B4)

There are three chemical storage areas located at the West Side facility. These are described below and are shown on **Figure 20**. On March 31, 2005, Bluestone personnel inspected the chemical storage cabinets.

Flammable cabinets (CSC-1) are present inside of the Bennett Testing Lab located in the Chem West Traffic building. The cabinets contain chemicals such as weak acids (i.e. hydrochloric acid and sodium hydroxide), methyl alcohol, methanol, and ethanol samples. The floor of the lab was tiled and did not contain floor drains. All samples and wastes are moved off site to the laboratory's Carteret facility every other day. There was no evidence of any or spills in the storage areas upon inspection.

One small chemical storage cabinet (1.5 ft x 4 ft x 2 ft) is located inside of the West Side Maintenance building and contains chemicals such as PVC primer, WD 40, and degreasers. The cabinet, which is labeled CSC-2 on Figure 14, is positioned on the concrete floor of the building. The floor does not contain any floor drains. There were no noticeable cracks in the concrete flooring or evidence of spills near the storage cabinets upon inspection.

Another cabinet (2 ft x 4 ft x 5 ft), located inside a trailer behind the West Side Maintenance, contains products such as gasoline, MEK, gear lube, oil, primer, and PVC glue. The trailer is elevated on metal beams over pavement. There was no evidence of leaks under the trailer upon inspection. This cabinet is labeled CSC-3 on Figure 14.

5.3 Drainage Systems and Areas (PA Form Question C)

5.3.1 Floor Drains, Trenches, Piping, Sumps (PA Form Question C1)

A survey of floor drains, trenches, piping, and sumps will be conducted as part of the proposed SI Building survey.

5.3.2 Process Area Sinks And Piping Which Receive Process Waste (PA Form Question C2)

There are no process area sinks or piping that receive process waste at the West Side facility. There are no liquid waste streams generated at the facility. There was no evidence of prior process sinks or piping revealed during the historic file review.

5.3.3 Roof Leaders Where Process Operations Vent To Roof (PA Form Question C3)

There are no roof leaders where process operations vent to the roof at the West Side facility.

5.3.4 Drainage Swales and Culverts (PA Form Question C4)

Stormwater runoff from all potential areas of concern is directed to a stormwater drain system. The system layout is shown on **Figure 21**.

This system directs the stormwater to an on-site water treatment plant in Yard 3, where it passes through an oil/water separator, an induced air flotation unit, and carbon adsorption as treatment before being discharged to the Platty Kill Canal. The stormwater treatment system is operating under NJPDES Surface Water Discharge Permit No. NJ0002089.

Stormwater runoff originating at IMTT-West Side is collected in storm sewers and treated at the on-site treatment facility. Isolation valves are located at key points in the storm sewer system, which would be closed in the event of a catastrophic tank failure. To the maximum extent possible, these valves are maintained in a closed position and only opened to facilitate drainage of the secondary containment areas. However, due to the age of the facility and the potential for flooding in low-lying areas, it is not possible to maintain all of the isolation valves in a closed position.

In the event of a catastrophic tank failure, product will be diverted to the sewer system prior to reaching the groundwater table. Upon discovery of a spill, operations at the wastewater treatment plant are suspended until an evaluation is made relative to the ability of the plant to properly treat the expected accumulations of spilled product. Should the volume of spilled product exceed the treatment capacity, the accumulated product will be pumped to dedicated tanks for storage prior to treatment. Pumping of spilled product from the sewers will enable quick removal of the product and prevent contamination of the groundwater.

Operation of the on-site wastewater treatment plant started in May 1978. Prior to this time, all collected wastewater and stormwater from the site was discharged to the old separator pond (former Platty Kill Pond) located at the head of the Platty Kill Canal.

An on-going remedial investigation regarding the storm sewer collection system is currently being conducted. Complete details regarding the storm sewer investigation are provided quarterly to the NJDEP.

The purpose of the investigation is to evaluate the integrity of subsurface piping used to transport or collect contaminated stormwater runoff, recovered groundwater and/or spills of hazardous substances. A Remedial Investigation Workplan was prepared in response to the NJDEP letter dated January 8, 2004, where the NJDEP expressed concerns that the transport of recovered groundwater to the wastewater treatment plant

via the facility sewer system might constitute a discharge of contaminants to soil and/or groundwater.

A main goal of the investigation is to prepare a map of the active sewer system in ARCVIEW format that shows the location of structural defects and hydraulic leaks found during a video inspection. Overlays of known product plumes, spills, soil borings, and monitoring wells will be developed and included in the final report. Based on these findings, recommendations for additional soil borings and/or monitoring wells will be coordinated with the facility wide Free Product Investigation Workplan. Further details of the proposed Remedial Investigation Workplan were submitted to the NJDEP in April 2004.

5.3.5 Storm Sewer Collection System (PA Form Question C5)

Stormwater runoff from all potential areas of concern is directed to a stormwater drain system. The system layout is shown on Figure 21.

This system directs the stormwater to an on-site water treatment plant in Yard 3, where it passes through an oil/water separator, an induced air flotation unit, and carbon adsorption as treatment before being discharged to the Platty Kill Canal. The stormwater treatment system is operating under NJPDES Surface Water Discharge Permit No. NJ0002089.

Stormwater runoff originating at IMTT-West Side is collected in storm sewers and treated at the on-site treatment facility. Isolation valves are located at key points in the storm sewer system, which would be closed in the event of a catastrophic tank failure. To the maximum extent possible, these valves are maintained in a closed position and only opened to facilitate drainage of the secondary containment areas. However, due to the age of the facility and the potential for flooding in low-lying areas, it is not possible to maintain all of the isolation valves in a closed position.

In the event of a catastrophic tank failure, product will be diverted to the sewer system prior to reaching the groundwater table. Upon discovery of a spill, operations at the wastewater treatment plant are suspended until an evaluation is made relative to the ability of the plant to properly treat the expected accumulations of spilled product. Should the volume of spilled product exceed the treatment capacity, the accumulated product will be pumped to dedicated tanks for storage prior to treatment. Pumping of spilled product from the sewers will enable quick removal of the product and prevent contamination of the groundwater.

Operation of the on-site wastewater treatment plant started in May 1978. Prior to this time, all collected wastewater and stormwater from the site was discharged to the old separator pond (former Platty Kill Pond) located at the head of the Platty Kill Canal.

An on-going remedial investigation regarding the storm sewer collection system is currently being conducted. Complete details regarding the storm sewer investigation are provided quarterly to the NJDEP.

The purpose of the investigation is to evaluate the integrity of subsurface piping used to transport or collect contaminated stormwater runoff, recovered groundwater and/or spills of hazardous substances. A Remedial Investigation Workplan was prepared in response to the NJDEP letter dated January 8, 2004, where the NJDEP expressed concerns that the transport of recovered groundwater to the wastewater treatment plant via the facility sewer system might constitute a discharge of contaminants to soil and/or groundwater.

A main goal of the investigation is to prepare a map of the active sewer system in ARCVIEW format that shows the location of structural defects and hydraulic leaks found during a video inspection. Overlays of known product plumes, spills, soil borings, and monitoring wells will be developed and included in the final report. Based on these findings, recommendations for additional soil borings and/or monitoring wells will be coordinated with the facility wide Free Product Investigation Workplan. Further details

of the proposed Remedial Investigation Workplan were submitted to the NJDEP in April 2004.

5.3.6 Storm Water Detention Ponds And Fire Ponds (PA Form Question C6)

Storm water accumulates in several areas at the West Side. A description of these areas is provided in Section 5.2.2 Surface Impoundments, Lagoons of this report.

5.3.7 Surface Water Bodies (PA Form Question C7)

The closest surface water body to the Site is the Kill van Kull, which borders the Site to the south. The location of the Kill van Kull is shown on **Figure 1**.

The Platty Kill Canal borders the site to the east and is shown on **Figure 1**.

5.3.8 Septic Systems Leachfields or Seepage Pits (PA Form Question C8)

During the investigation of past and present septic tanks at the IMTT West Side facility, several inconsistencies were detected. Several sources of information were relied upon to develop the most accurate assessment of past and current septic tanks. The major sources of information regarding the septic systems include the following:

1. An IMTT Bayonne map titled "Septic Tank Locations" dated March 1, 1993.
2. An IMTT Bayonne map titled "Septic Tank Locations" dated December 19, 2000.
3. An ENSR Phase I Remedial Investigation Report dated November 1996
4. A Waldemar S. Nelson and Company Preliminary Site Assessment dated October 15, 1992.
5. Interviews with IMTT site personnel familiar with the current operations of on-site septic tanks.

Currently, there are no active septic leach fields at the IMTT West Side facility. The septic systems have been modified so that the septic tanks currently act as holding tanks that do not feed into a leach field. The holding tanks are pumped out on an as needed basis.

Based on a review of available information, the following is a summary of present, past, and potential septic tanks existing on the West Side. The locations of the septic tanks are shown on **Figure 22.**

5.3.8.1 AOC-W-338 Y1-ST-A

A septic tank located southeast of AST 1700 has been identified in Yard 1. Based on the aerial photographs and the 1921 and 1948 site plans, septic tank AOC-W-338 Y1-ST-A appears to be associated with the former "Old Phenol Building" that was located south of AST 1700. According to IMTT records, this septic tank is still in use as a holding tank and has a capacity of 1,000 gallons.

5.3.8.2 AOC-W-339 Y1-ST-B

A septic tank located south and southeast of AST 1700, has been identified in Yard 1. Based on the ENSR RIR (November 1996), the Nelson Preliminary Site Assessment (October 1992), and the IMTT 1993 Septic Tank Location map, a former septic tank, AOC-W-339 Y1-ST-B appears to be associated with a former locker room. It is unknown if this septic tank is still present at the identified location. According to IMTT site personnel, no septic holding tank is currently in use at this location. No other information concerning this septic tank is available.

5.3.8.3 AOC-W-340 Y2-ST-A

A septic tank located northwest of AST 2153 has been identified in Yard 2.

According to IMTT site personnel, the septic is currently in use as a holding tank and has a capacity of 1,000 gallons.

5.3.8.4 AOC-W-341 Y2-ST-B

Based on the 1948 Site Plan, AOC-W-341 Y2-ST-B, which is reportedly located somewhere in the vicinity of the building immediately west of the main office, may have been associated with the Research Laboratory building.

According to IMTT site personnel, this tank operates as a lift station and has never been associated with or operated as a septic tank or leach field system.

5.3.8.5 AOC-W-342 Y2-ST-C

Septic tank AOC-W-342 Y2-ST-C is located in Yard 2, just south of the main office building. This building has always been an office building based on the 1921 and 1948 Site Plans and its most recent history. According to IMTT records, the septic holding tank has a capacity of 300 gallons and is currently in use.

There is no reason to believe any wastes, other than normal septic waste has been present in this septic tank. No other information concerning the septic tank was found.

5.3.8.6 AOC-W-343 Y2-ST-D

A former septic tank AOC-W-343 Y2-ST-D was identified in Yard 2. According to the Nelson Preliminary Assessment Report (October 1992) and the 1993 Septic Tank Location map, the former septic is located south of the Hot Oil House and boiler House.

According to IMTT site personnel, no septic tank is currently in use at this location. It is unknown if this septic tank is still present at the identified location. No other information concerning the septic tank was found.

5.3.8.7 AOC-W-344 Y2-ST-E

A septic tank, AOC-W-344 Y2-ST-E has been identified in Yard 2. According to IMTT site personnel, AOC-W-344 Y2-ST-E services the P&S Warehouse. According to IMTT records, the septic holding tank has a capacity of 500 gallons.

5.3.8.8 AOC-W-345 Y3-ST-A

According to the Nelson Preliminary Assessment Report (October 1992), AOC-W-345 Y3-ST-A is a septic tank that was located in the northeast corner of Yard 3, near the former "Fish Meal" Building. According to IMTT site personnel, no septic is currently in use in this area. No other information is available for this septic tank.

5.3.8.9 AOC-W-346 Y3-ST-B

According to the Nelson Preliminary Assessment Report (October 1992), AOC-W-346 Y3-ST-B is a septic tank that was located in the northwest area of Yard 3, near the Inspection Rack. According to IMTT site personnel, no septic is currently in use in this area. No other information is available for this septic tank.

5.3.8.10 AOC-W-347 Y4-ST-A

According to the Nelson Preliminary Assessment Report (October 1992), AOC-W-347 Y4-ST-A is a septic tank that was located in the northwest corner of Yard 4, near the West Gate. According to IMTT site personnel, no septic is currently in use in this area. No other information is available for this septic tank.

5.3.8.11 AOC-W-348 Y8-ST-A

According to IMTT site personnel, AOC-W-348 Y8-ST-A is a septic holding tank currently in use servicing the former Rona building in Yard 8. According to IMTT records, the septic tank has a capacity of 1,000 gallons.

5.3.8.12 AOC-W-349 Y10-ST-A

Septic holding tank AOC-W-349 Y10-ST-A is an active 1,0000-gallon tank located south of the "West Side Maintenance" Building.

5.3.8.13 AOC-W-350 Y10-ST-B

Septic holding tank AOC-W-350 Y10-ST-B is located near the Wash Locker Room building in the northeast corner of Yard 10. This building has been identified as a Wash and Locker Room dating back to 1948. Septic tank AOC-W-350 Y10-ST-B is an active 500-gallon holding tank.

5.3.8.14 AOC-W-351 Y10-ST-C

Septic holding tank AOC-W-351 Y10-ST-C is located in the northeast corner of Yard 10. According to IMTT site personnel, this tank operates as a lift station and has never been associated with a septic system or leach field.

5.3.9 Drywells and Sumps (PA Form Question C9)

There are no drywells or sumps at the Site.

5.4 Discharge and Disposal Areas (PA Form Question D)

5.4.1 Areas of Discharge (PA Form Question D1)

IMTT maintains a discharge database of NJDEP Reportable (Hotline) and DPCC recorded spills. IMTT currently addresses spills in accordance with N.J.A.C. 7:1E5.3(e)1iii while communicating the spills to the Site Remediation Program. **Tables 4** and **5** provide a list of releases divided into two categories based on a review of available records; spills to water and spills on land. The locations of the spills are shown on **Figure 23**.

Waterborne spills are generally of minimum quantity and are immediately addressed with US Coast Guard reporting and oversight. The waterborne spills occur in areas that are boomed in by regulations and are promptly remediated. Therefore, impacts to water quality are minimized.

The following is a summary of releases in chronological order that occurred on land that were of quantities greater than 50 gallons.

Case #: 04-08-29-2110-41 –No. 6 fuel oil spill of 54,432 gallons

On August 29, 2004, IMTT personnel were conducting the second of three successive tank transfers of No. 6 fuel oil into Tank 6206. At the completion of the second transfer, approximately 54,432 gallons had overfilled the tank. Upon discovery the supervisor immediately initiated agency notification after assessing that cleanup operations would exceed 24-hours. Total quantity released was estimated to be 54,432 gallons. An environmental consultant prepared a site investigation. The site investigation determined that the release had been remediated and groundwater was not affected by this contemporary spill. However, residual historic petroleum contamination exists. No further action is planned for this release as it remained within the secondary containment and was addressed under the DPCC Plan.

Case #: 04-07-21-1027-00 - Gasoline spill of 2,000 gallons

On July 21, 2004, approximately 2,000 gallons of gasoline and water were observed in the secondary containment of Tank 5809. The area was immediately foamed to suppress the vapors. Vacuum trucks were used to remove free product while operations personnel began transferring product to other storage tanks. IMTT created a water bottom in the tank once there was enough room to pump water into the tank. The water bottom prevented gasoline from escaping the tank. Once the tank was emptied of all free liquids and all free liquids were removed from the secondary containment, soil was excavated. The extent of the excavation was determined by visible indicators and was estimated to be 4-inches in depth. Excavated soils were stockpiled on-site. Post excavation samples were collected and a monitoring well was installed.

In general, the results indicate that the soil remediation was successful for the gasoline product. However, the monitoring well contains a light non-aqueous phase liquid (LNAPL). Soil screening during the monitoring well installation and the physical characteristics of the product in the monitoring well indicate that the product is not directly related to this release. A site investigation report will be provided to the Department upon completion.

Case #: 04-07-05-1804-00 - No. 6 fuel oil spill of 16,800 gallons.

An employee discovered oil leaking from a flange on the block valve within the secondary containment of Tank 6003 on July 5, 2004. No. 6 fuel oil leaked into the earthen containment and into the plant storm sewer system. The line was immediately isolated by a DPCC containment valve and bolts tightened to slow the leak. The maintenance department responded and replaced the gasket, which ultimately stopped the leak. Product that was recoverable was removed by vacuum trucks and placed in Recovery Tanks 3179 and 3185. Grossly contaminated soil was removed with an excavator and stock piled on-site. The impacted sewers were jet-rodded and flushed, any

residue oil and soil was removed. The total quantity released was estimated at 16,800 gallons.

Potential free product impacts from this spill were investigated during the site grid-screening program as additional points. Free product greater than 0.1 feet was detected. Additional monitoring wells will be installed and product delineated as part of the site wide program.

Case #: 04-07-02-1420-02- Infineum T4012 Plasticizer spill of 860 gallons.

Infineum T4012 plasticizer was released from a blown gasket on a filter housing associated with Tanks 3119 and 3120 on July 2, 2004. Post release inventory reconciliation showed that 860 gallons leaked from the filter. The product sprayed liquid within both the containment pads and the surrounding area. Approximately 3,700 square feet was affected. Upon determining impacted soils remain at the location, the NJDEP was notified. IMTT has performed three post remedial actions and based on the results of the sampling completed to date, no further action is planned for this release.

Case #: 04-03-29-0828-11 – Sodium Hydroxide spill of 50,722 gallons.

A 50% solution of sodium hydroxide was released from a pipeline near the caustic loading rack on Burma Road on March 29. 2004. The volume released is estimated to be 50,722 gallons.

NJDEP specified the requirements in a June 2004 comment letter and additional activities were completed on August 4, 2004. A RI Report was prepared to document the specific information regarding the chemical release and submitted to NJDEP on August 30, 2004.

A review of available historic documents and performance of a geophysical investigation to assist in locating any preferential flow pathways were completed. In

addition, a soil and groundwater investigation was also completed, which consisted of:

- The installation and sampling of 21 soil borings;
- The installation and sampling of 13 temporary well points for pH analysis;
- The installation and sampling of six discrete well points for pH analysis;
- The installation, development and sampling of seven permanent monitoring wells for pH, total chromium and hexavalent chromium analysis; and
- The sampling of three existing monitoring wells for pH, total chromium and hexavalent chromium analysis.

The results of the investigation succeeded in completing the following:

- Determining that mobilization of hexavalent chromium under the caustic conditions at the site is not occurring;
- Delineating the horizontal extent of the NaOH source area and NaOH plume in groundwater;
- Identifying appropriate additional remedial measures; and
- Ensuring that the recovered product is being handled in accordance with appropriate regulations.

Based on the results of the investigation, the following additional remedial measures were developed. These remedial measures are specific to the NaOH release and do not address any other site conditions. The additional measures are:

- Continue operations of the existing recovery well operation (with slight modifications);
- Conversion of MW-25 to a recovery well and installation and initiation of recovery operations from MW-25; and
- Initiate a quarterly monitoring program for all existing monitoring wells in the area of the release to ensure the plume does not migrate. It is anticipated that all recoverable NaOH product will be recovered in approximately one year.

Further details regarding these proposed remedial measures and the specifics of the investigation are provided in the RI Report.

Case#: 03-11-05-1500-04 – Caloria HT-43 spill of 200 gallons

A seal failed on the circulating pump within the hot oil house on November 5, 2003. The seal failure allowed product to be release from the pump onto the cement floor of the building. The product leaked out of the building by traveling along the concrete and beneath the rear corrugated steel wall. Product leaked from the rear corner of the building toward the railroad storage tracks. IMTT contained and conducted an emergency cleanup which was completed within 8-hours that included free-liquid removal and soil removal. IMTT documented the release per NJAC 7:1E 5.3 (e) 1 iii. Upon receipt of the final analytical results the Department was notified per NJAC 7:1E 5.3 (e) 2. Estimated quantity of the discharge was 200 gallons.

Case #: 03-02-24-1019-37 – No. 2 fuel oil spill of 210 gallons

On February 23, 2003, a tank-cleaning contractor removed the man way-head on Tank 5803 in preparation to clean the tank. The contactor did not secure the man way-head. During the evening hours a torrential rainstorm occurred that flooded the secondary containment causing the storm water to enter the tank, which allowed oil to float out. The next day the contractor returned to find oil on top of the storm water. The contractor used vacuum trucks to remove the oil and deployed absorbent sweep to contain and remove the oil sheen. The NJDEP was notified on February 24, 2003 because IMTT could not meet the 24-hour cleanup requirement under NJAC 7:1E 5.3 (e) ii. No further action is planned for this release as it was addressed under the DPCC Plan.

Case#: 03-02-18-1725-47- No. 6 oil spill of 20,000 gallons

On February 18, 2003, an employee from Caleb Brett Services was working at Tank 6012 when he heard a loud bang. He immediately went to investigate the source and witnessed large icicles falling from Tank 6003. He observed a large quantity of oil at the base. It appeared that one of icicles had struck and damaged a section of ¾-inch pressure relief piping at the tank. Approximately 20,000 gallons were discharged. Free liquids were removed by vacuum trucks and placed in spill recovery tanks. Soils were excavated and stock piled on site. A report was submitted to the NJDEP, however a second spill occurred on top of the remediation efforts prior to completion of delineation (see above Case #: 04-07-05-1804-00).

Case#: 03-01-27-1433-33 - No. 6 fuel oil spill of 84 gallons

An IMTT employee discovered fuel oil at the base of Tank 6005 on January 27, 2003. Upon closer examination, the employee determined that the source of the leak was the tank's steam traps for the tank's internal steam coil. The employee immediately isolated the steam coil and notified the supervisor. IMTT and response contractor personnel immediately began removal activities that included removal of free-liquids and soil to odor and visual indicators. At approximately 1415 hours, IMTT determined that the severe cold weather was hampering the cleanup to the point that IMTT could not meet the 24-hour cleanup criteria for a major facility under NJAC 7:1E-5.3 (e), 1, ii, (2). 84 gallons of fuel oil were discharged. No further action is planned for this release as it was addressed under the DPCC Plan.

Case #: 00-01-18-1327-37 - No. 2 fuel oil spill of 84 gallons

On January 18, 2000, No. 2 fuel oil was being transferred to the Curries Yard. A crack in a miter joint weld caused the product to spray onto the ground. The product migrated off IMTT property from Yard 4 onto Conrail property. When the leak was

discovered, the pipeline was secured. Vacuum trucks cleaned up the oil. The stained soil was removed from the site.

Case #: 97-02-26-2025-37 – MTBE and Naphtha spill of 19,194 gallons

On February 26, 1997, approximately 19,194 gallons of MTBE and naphtha were released from Tank 5214. The tank overflowed during a marine to shore transfer. Free liquids were removed using a vacuum truck. No further information pertaining to this spill was discovered during the file review.

96-12-28: MTBE spill of 840 gallons

Approximately 840 gallons of MTBE were released from a leak in Tank 6007 during a transfer from Tank 5184 on December 28, 1996. The release may have occurred due to a loose handle on the valve stem. A vacuum truck was called to the area and was used to remove product from contaminated areas. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

96-11-21: No. 6 oil spill of approximately 126 gallons

A release of approximately 126 gallons of No. 6 fuel oil occurred at Tank 1705 on November 21, 1996. The source of the spill was a loose pipeline flange connection for the tank. The flange connection was tightened and a vacuum truck was used for the removal of product. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

96-05-14: Off spec oil release of 50 gallons

Approximately 50 gallons of off-spec oil were released from Tank 1013 on May 14, 1996. The tank was overfilled, resulting in the release of oil to the surrounding area. The spill was cleaned up and the product was transferred to Tank 1022 by vacuum truck. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

96-05-07: Asphalt release of 100 gallons

Approximately 100 gallons of asphalt were released from Asphalt Rack #4 on May 7, 1996. A puddle of product was identified on the paved area beneath the rack. IMTT personnel responded to the scene to clean up the spilled area. The contaminated area was removed by backhoe. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

96-05-02: Asphalt release of 125 gallons

An asphalt release of 125 gallons occurred at Asphalt Rack #5 on May 2, 1996. Sand was spread over the spill area and the contaminated area was removed by backhoe. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

96-05-01: No. 6 fuel oil release of 630 gallons

Approximately 630 gallons of No. 6 fuel oil were released from Tank 6206 on May 1, 1996. The steam coil on the eastside of the tank failed causing the spill. The steam was shut off and the recoverable free product was removed by vacuum truck. A

NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

96-02-20: MTBE mixture release of 100 to 150 gallons

A release occurred at Tank 5806 on February 20, 1996 as a result of a leaking 12-inch suction line. A total of 100 to 150 gallons of a MTBE mixture was spilled. The released product was recovered by vacuum truck. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

Case #: 95-10-25-0419-56 – No. 6 fuel oil spill of 1,500 gallons

A release of 1,500 gallons of No. 6 fuel oil occurred at Tank 1705 on October 25, 1995. The source of the release was Tank 1705. Free liquids were recovered by vacuum truck. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

95-07-03: Oil release of 84 gallons

Approximately 84 gallons of oil were released from a leak in Tank 6205's south pump on July 3, 1995. The product was recovered by vacuum truck. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

Case #: 94-08-01-0420-53 –No. 2 fuel oil spill of 2,660 gallons

No. 2 fuel oil spill occurred at Tank 1124 on August 1, 1994. During a tank transfer, the tank overflowed because the tank valve failed to fully close. Approximately 1,022 barrels was released and 958 barrels were recovered. Approximately 64 barrels of product remains unaccounted. Free liquids were removed by vacuum truck. No further information pertaining to this spill was discovered during the file review.

Case #: 93-11-18-1117-10 – Regular unleaded gasoline spill of 100 gallons

On November 18, 1993, 100 gallons of regular unleaded gasoline was discharged from Tank 5085. The tank overflowed during a transfer operation. Free liquids were recovered by vacuum truck. No further information pertaining to this spill was discovered during the file review.

Case #: 93-02-22-0178- No. 6 fuel oil release of 8,000 to 10,000 gallons

Failure of Tank 6203 resulted in a release of approximately 8,000 to 10,000 gallons of #6 fuel oil into the surrounding diked area. The spill occurred on February 22, 1993. The product from the tank was transferred from Tank 6203 to Tank 6206. Three vacuum trucks were on the scene and used to recover the released product. No further information pertaining to this spill was discovered during the file review.

91-11-27: Lube Oil Additive release of 50 gallons

On November 27, 1991, approximately 50 gallons of lube oil additive were released from Tank 3111 as a result of a failed steam coil. The product was released in the cement containment and was recovered by vacuum truck. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

91-11-01: Asphalt spill of 60 gallons

On November 1, 1991, 60 gallons of asphalt were released from Asphalt Rack #3. The spill was covered with sand and removed by backhoe. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

91-09-22: No. 6 fuel oil spill of 100 gallons

Approximately 100 gallons of No. 6 fuel oil were released from Tank 1702 on September 22, 1991. Failure of a hi-line flange gasket was reported as the source of the discharge. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

91-08-28: Kero spill of 100 gallons

On August 28, 1991, approximately 100 gallons of Kero were released from the 8" Kero line by the jumper valve for Tanks 1123 and 1124. Maintenance workers were working on the line and removed the valve while there was still pressure and product in the line, causing the release. A vacuum truck was used to recover the spill from the diked area. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

91-05-08: Gasoline spill of 50 gallons

A line failure near Tank 5186 resulted in a 50-gallon release of gasoline on May 8, 1991. A NJDEP case number was not assigned to this release, but IMTT personnel

provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

Case # 90-08-08-0345-00: Gasoline spill of 200 gallons

A release of 200 gallons of gasoline occurred near Tank 5070 on August 8, 1990. The spill was a result of a broken pump gauge for Tank 5070. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

90-03-29: No. 6 oil of approximately 420 gallons

On March 29, 1990, approximately 420 gallons of No. 6 fuel oil was released from Tank 1704. The release was the result of a failed hose on the electric pump during a tank-to-tank transfer. The product was contained to the diked area on the north side of the tank. The spill was cleaned up by vacuum truck. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

90-02-23: Asphalt spill of 100 gallons

On February 23, 1990, 100 gallons of asphalt were released from Asphalt Rack #2. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

Case #: 89-12-25-0832 – No. 6 fuel oil spill of 504,000 gallons

A release from Tank 1701 occurred on December 15, 1989. The oil was observed around Tanks 1013 and 1011. The leak was caused from stress on the tank's bottom plate welds caused by radical differential settlement below the floor resulting in weld separations. Oil remained mostly on the surface and work was planned for May 1990 to remove remaining oil from the dike walls and floors. The soil surrounding the tank was hot water washed and the resulting free liquids recovered by vacuum truck. No further information is available at this time.

89-12-25: Gasoline spill of 150 gallons

Approximately 150 gallons of gasoline were discharged on the eastside of Tank 6204 on December 25, 1989. The source of the release was a leak in a nearby pipeline. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

89-12-15: No. 6 fuel oil spill of 1,050,000 gallons

A release from Tank 1701 occurred on December 15, 1989 as a result of tank bottom failure. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

89-11-17: Asphalt release of 300 gallons

On November 17, 1989, 300 gallons of asphalt were released from Asphalt Rack #3. The spill was a result of water in the trailer, which caused the product to spill out. A NJDEP case number was not assigned to this release, but IMTT personnel provided

information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

Case #: 89-10-31-2000 – Unknown product release of 10 to 420 gallon spill

On October 31, 1989, approximately 10 to 420 gallons of product were released from the Shell line at Pit 1 in Yard 6. No further information is available at this time.

Case #: 89-10-28-1232-00 – No. 6 oil spill of 250 gallons

On October 28, 1989, approximately 250 gallons of No. 6 fuel oil was released from a pipeline in Yard 6. No further information is available at this time.

89-09-05: No. 6 fuel oil spill of 1,000 gallons

A discharge event occurred at Tank 1703 on September 5, 1989. The release was due to a leak in the tank's bottom. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

89-08-22: Gasoline spill of 150 gallons

A release occurred from Tank 5161 on August 22, 1989 due to a tank bottom leak. Foam was spread over the spill and product was transferred from Tank 5161 to Tank 6007. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

89-08-02: No. 6 fuel oil spill of 60 gallons

On August 2, 1989, approximately 60 gallons of No. 6 fuel oil were released from Tank 3184. The release was caused by a steam coil leak. A vacuum truck was used to recover released product. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

89-08-02: Slop oil spill of 300 gallons

On August 2, 1989, approximately 300 gallons of slop oil were discovered surrounding Tank 3186 and inside the diked area by the Exxon fence line. It was noted in the report that the tank had two wooden plugs in it. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

89-08-01: Asphalt spill of 50 to 60 gallons

On August 1, 1989, approximately 50 to 60 gallons of asphalt were released near Asphalt Rack #3. The driver of an asphalt truck overfilled his trailer, causing the release. The release was cleaned up by backhoe. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

89-07-22: Asphalt release of 50 to 60 gallons

On July 22, 1989, approximately 50 to 60 gallons of asphalt were released from Asphalt Rack #3. A NJDEP case number was not assigned to this release, but IMTT

personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

88-11-12: Asphalt release of 75 gallons

On November 12, 1988, approximately 75 gallons of asphalt were released from Asphalt Rack #2. The release occurred due to a surge at the pump while filling a truck. The spill was cleaned up by backhoe. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

88-10-26: Asphalt release of 150 gallons

On October 26, 1988, approximately150 gallons of asphalt were released from Asphalt Rack #1. A trailer was overfilled resulting in the release. The spill was cleaned up by backhoe. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

88-05-20: Asphalt release of 200 gallons

On May 20, 1988, approximately 200 gallons of asphalt were released from the South Asphalt Rack. The spill was cleaned up by backhoe. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

88-02-01: Phenol release of 50 gallons

On February 1, 1988, approximately 50 gallons of phenol were released from a failed hose connection of a railcar. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

Case #: 86-08-06-0500-00 – Gasoline spill of 37,800 gallons

On August 6, 1986, Tank 6006 released approximately 900 barrels of gasoline from a water draw off valve. Gasoline accumulated in an area in Yard 6 and foam applied. Most of the gasoline was diverted to the storm sewer system. Free liquids were recovered by vacuum truck. A NJDEP case number was not assigned to this release, but IMTT personnel provided information regarding the occurrence during the discharge review process at the Terminal. No further information is available at this time.

Case #: 86-07-09-0400-00 – Unleaded gasoline blending stock spill of 5,460 gallons

On July 9, 1986, approximately 5,460 gallons of unleaded gasoline blending stock was released from Tanks 2138, 2139, 2140, and 2148. There was a fire at Tank 2138 as a result of overfilling the tank. It was concluded that potential sources of ignition could have been from a truck, static electricity, or paint compressor. The Coast Guard deployed a boom in the Platty Kill where the bulkhead had caught fire. Approximately 407,431 gallons of gasoline were lost due to the incident. No further information is available at this time.

5.4.2 Waste Piles (PA Form Question D2)

A soil stockpile inventory was created for all soil staging areas located in the West Side. On March 16, 2005, Bluestone personnel measured and identified each stockpile at the West Side. At this time, stockpiles were situated in various locations throughout the West Side, with the main staging area positioned north of the aboveground storage tanks in Yard 6. After the initial stockpile inventory was taken, IMTT transferred all stockpiles to the Yard 6 staging area. On May 23, 2005, Bluestone re-surveyed the stockpiles and updated the measurement calculations and identifications for each stockpile. Dimensions were taken for all of the piles, even if they were not moved. There are currently 33 soil stockpiles, totaling approximately 15,112 cubic yards, located in Yard 6. This number is subject to change pending unforeseen remedial activities in the event of future impact to soil releases. IMTT's objective is to reuse the soil in the closure of the North Cell of Platty Kill Canal and provide a Beneficial Soil Reuse Plan corresponding to the program. The current surveying results are summarized in **Table 6**. Comments are also included in the table pertaining to the changes made to the stockpiles between the March 16, 2005 survey and the May 23, 2005 survey. **Figure 24** shows the locations of the soil stockpiles on site at the May 23, 2005 survey.

5.4.3 Waste Water Collection Systems Including Septic Systems, Seepage Pits, And Dry Wells (PA Form Question D3)

There is no process waste water generated at the West Side facility. Storm water is collected through a system described in Section 5.3.5 Storm Sewer Collection System of this report. Sanitary wastes collected through septic holding tanks are discussed in Section 5.3.8 Septic Systems Leachfields or Seepage Pits of this report.

5.4.4 Landfills or Landfarms (PA Form Question D4)

There are no landfills or landfarms at the Site.

5.4.5 Spray fields (PA Form Question D5)

There are no spray fields at the Site.

5.4.6 Incinerators (PA Form Question D6)

There are no incinerators at the Site.

5.4.7 Historic Fill or Fill Material (PA Form Question D7)

5.4.7.1 Historic Fill

Historical topographic maps were obtained of the area for years 1900, 1905, 1947, 1955, and 1967. A review of these maps concludes significant filling has occurred on the West Side property.

A summary of the observations made from the historical topographic maps is provided in Section 2.7 Historic USGS Topographic Maps, a summary of fill observations is discussed below; copies of the maps are provided in Appendix B.

The earliest available topographic maps include the 1900 Staten Island Quadrangle and the 1900 Passaic Quadrangle. In 1900, the area of Constable Hook was an island that was separated from the mainland by a marsh that was approximately 6,000 feet by 2,000 feet. Constable Hook is shown as an island with marshes and waterways. Four bridges connected Constable Hook to the mainland. The Platty Kill Canal is shown with its mouth to the Kill van Kull, feeding the marsh (tidal flats) between Constable Hook and the mainland.

The 1905 Passaic Quadrangle shows little difference between 1900 and 1905.

The 1947 Jersey City Quadrangle shows significant filling has occurred. The marsh area that was between Constable Hook and the mainland is filled. The marshes that existed on Constable Hook are also filled. The Platty Kill Canal is shown as ending at the former Platty Kill Pond. Constable Hook is shown as being connected to the mainland by solid land. The area of Constable Hook has approximately doubled in size due to filling activities.

The 1955 Jersey City Quadrangle shows filling has continued on surrounding areas, including the Naval Reservation Bayonne Supply Depot and Constable Hook.

The 1967 and 1981 Jersey City Quadrangles shows filling continued in the northern section of Constable Hook, between Constable Hook and the US Naval Reservation.

Based on review of the historic topographic maps, Constable Hook is approximately three times its original size due to historic fill activities.

Geologic logs collected for the West Side show the fill is comprised of slag, cinders, concrete debris, wood, metal fragments, glass fragments, bricks, etc. Over the years, quality data has been collected for the fill used at the West Side facility. There are concerns regarding the quality of the fill used during historic fill activities. The NJDEP conducted an investigation of the use of chromium slag as fill material in the area (see Section 5.4.7.2 Chromium Fill) and identified several areas. Soil quality data collected on-site indicate various constituents of concern such as arsenic, may exist in the fill materials as they are considered to be ubiquitous across Constable Hook.

5.4.7.2 Chromium Fill

IMTT has several orphan chromium contaminated areas on site. These sites are the result of chromium-contaminated slag being used for fill construction purposes at the site in the 1960's. These chromium-contaminated sites are identified by the NJDEP in

the Hudson County Chromate Sites Survey. The chromium is reportedly from chromate chemical production waste commonly used in the Hudson County area for construction fill and development projects, backfilling of demolition sites, preparation for building foundations, tank berm construction, roadway construction, and the filling of wetlands. The areas of chromium contamination located on site are shown on **Figure 25.**

Yard	NJDEP Site	Description of Location
1	139-3	The tank dike areas of Tanks 1710, 1119, 1120, 1121, and 1124.
2	139-1	Northwest corner of Yard 2.
5	139-6	The berm along the east side of the main entrance road to the facility and the stormwater basin.
6	139-2	Located at the Waterfront at the head of Pier A and south of the Saltwater Pump House.
6	139-4	A portion of the east dike berm of Tank 6204 and the west dike berm of Tanks 6203 and 6204.
6	139-5	The area surrounding the two spherical tanks in the northwest corner of Yard 6, west of Tank 6012.
6	139-5a	An area south of Tank 6011.

In addition to the NJDEP identified locations, IMTT has identified other areas. All of these areas are shown on **Figure 25**.

5.4.8 Open Pipe Discharges (PA Form Question D8)

The on-site stormwater treatment plant operated under NJPDES Permit, which includes an open pipe discharge to the Platty Kill Canal. This open pipe discharge is operated under an approved and monitored NJPDES permit. The stormwater treatment plant and the open pipe discharge point are shown on **Figure 21**.

5.5 Other Areas of Concern (PA Form Question E)

5.5.1 Electrical Transformers And Capacitors (PA Form Question E1)

IMTT maintains a transformer oil sampling and retrofit program to document transformers that contained PCB transformer oil. All transformers currently on site have been sampled and classified. Based on oil sample results, each transformer was identified based on the following results:

- PCB transformer if oil results were greater than 500 ppm
- PCB-contaminated if oil results were greater than 50 and less than 500 ppm
- Non-PCB if oil sample results were less than 50 ppm.

According to IMTT personnel, there have been no releases of PCB oil at the site. The locations of the transformers are shown on **Figure 26**.

5.5.1.1 AOC-W-352: TRANS-3

AOC-W-352 TRANS-3 is the former location of three 33 KVA transformers. The transformers were located west of AST-6203 and south of AST-6010. The transformers were sampled as part of an IMTT sampling program and were classified as non-PCB transformers.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.2 AOC-W-353: TRANS-5

AOC-W-353 TRANS-5 is the former location of three 167 KVA transformers. The transformers were located northeast of AST-6203. The transformers were sampled and classified as non-PCB transformers.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.3 AOC-W-354: TRANS-7

AOC-W-354 TRANS-7 is the former location of two transformers:

- One GE PCB transformer,
- One Westinghouse PCB-contaminated transformer.

The transformers were located north of Pier A. The transformers were sampled and were classified as PCB and PCB-contaminated transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.4 AOC-W-355: TRANS-8

AOC-W-355 TRANS-8 is the former location of three 200 KVA transformers. The transformers were located north of Pier A. The transformers were sampled and were classified as non-PCB transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.5 AOC-W-356: TRANS-9

AOC-W-356 TRANS-9 is the former location of twelve transformers:

- Three GE PCB-contaminated transformers
- Three GE oil switched PCB-contaminated
- Three 75 KVA transformers PCB-contaminated
- Three 15 KV oil circuit breaker PCB-contaminated.

The transformers were located south of AST-1220 and AST-1123. The transformers were sampled and were classified as PCB-contaminated transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.6 AOC-W-357: TRANS-12

AOC-W-357 TRANS-12 is the former location of four transformers. The transformers were located south of the Boiler House building. The transformers were sampled and were classified as PCB-contaminated transformers. The transformers were removed from service.

5.5.1.7 AOC-W-358: TRANS-13

AOC-W-358 TRANS-13 is the former location of 19 transformers:

- Seven GE PCB-contaminated oil circuit breakers
- Eleven 35 KV non-PCB oil circuit breakers
- 600 V PCB-contaminated switch gear

The transformers were located on the west side of the Boiler House building. The transformers were sampled and were classified as PCB-contaminated and non-PCB transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.8 AOC-W-359: TRANS-14

AOC-W-359 TRANS-14 is the former location of seven transformers:

- One GE PCB-contaminated transformer
- Three 667 KVA PCB-contaminated transformer
- Two 250 KVA non-PCB transformers
- One 250 KVA PCB-contaminated transformer

The transformers were located on the east side of the Boiler House building. The transformers were sampled and were classified as PCB-contaminated and non-PCB transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were

disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.9 AOC-W-360: TRANS-15

AOC-W-360 TRANS-15 is the former location of three 333 KVA transformers. The transformers were located east of AST-1701. The transformers were sampled and were classified as non-PCB transformers. The transformers were removed from service.

5.5.1.10 AOC-W-361: TRANS-16

AOC-W-361 TRANS-16 is the former location of six transformers:

- Three GE PCB-contaminated transformers
- Three 100 KVA PCB-contaminated transformer

The transformers were located south-east of the Lagoon. The transformers were sampled and were classified as PCB-contaminated transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.11 AOC-W-362: TRANS-17

AOC-W-362 TRANS-17 is the former location of three transformers:

- Two PCB-contaminated transformers
- One 500 KVA non-PCB transformer

The transformers were located east of the Lagoon. The transformers were sampled and were classified as PCB-contaminated and non-PCB transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.12 AOC-W-363: TRANS-18

AOC-W-363 TRANS-18 is the former location of 46 transformers:

- Four PCB transformers
- 42 PCB-contaminated transformers

The transformers were located north of AST-3842. The transformers were sampled and were classified as PCB and PCB-contaminated transformers. The transformers were removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.13 AOC-W-364: TRANS-19

AOC-W-364 TRANS-19 is the former location of six transformers:

- Three GE PCB transformers
- Three 150 KVA PCB-contaminated transformers

The transformers were located in Yard 5 south of AST 5810. The transformers were sampled and were classified as PCB and PCB-contaminated transformers. The transformers were removed from service.

5.5.1.14 AOC-W-365: TRANS-20

AOC-W-365 TRANS-20 is the former location of one GE transformer. The transformer was located in Yard 5. The transformer was sampled and was classified as a PCB-contaminated transformer. The transformer was removed from service.

There were no known leaks or discharges associated with these transformers. The transformers have been decommissioned and removed. The transformers and oil were disposed of in a properly documented process. IMTT maintains a certificate of determination on file.

5.5.1.15 AOC-W-366: TC 4, 5, 6, 7, 8, 9, 10, and 11

AOC-W-366 TC 4, 5, 6, 7, 8, 9, 10, and 11 is the location of five 833-KVA transformers and three oil circuit breakers.

The transformers are located in the southeast corner of Yard 6 south of AST 6012. The transformers were sampled and were classified as non-PCB transformers. There were no known leaks or discharges associated with these transformers.

5.5.1.16 AOC-WFF-367: TC-22

AOC-W-367 TC-22 is the location of a 750 KVA cabinet transformer. The transformer is located in Yard 6 southwest of AST 6011. The transformer was sampled on June 26, 1997 and classified as a non-PCB transformer.

There are no known leaks or discharges associated with this transformer.

5.5.1.17 AOC-W-368: TC-23

AOC-W-368 TC-23 is the location of a 1,000 KVA transformer. The transformer is located in the southeast corner of Yard 6 south of AST 6010 and AST 6009. The transformer was sampled and classified as a non-PCB transformer. There are no known leaks or discharges associated with this transformer.

5.5.1.18 AOC-W-369: TC-24

AOC-W-369 TC-24 is the location of a 4,160 KVA cabinet transformer. The transformer is located in Yard 1 southeast of AST 1702. The transformer was sampled on June 26, 1997 and was classified as a non-PCB transformer. There are no known leaks or discharges associated with this transformer.

5.5.1.19 AOC-W-370: TC-25

AOC-W-370 TC-25 is the location of a 2,400 KVA transformer. The transformer is located east of AST 1122. The transformer was sampled on June 26, 1997 and classified as a non-PCB transformer. There are no known leaks or discharges associated with this transformer.

5.5.1.20 AOC-W-371: TC-26

AOC-W-371 TC-26 is the location of one 750 KVA transformer. The transformer is located in Yard 1 north of the Compound Building. The transformer was sampled on June 26, 1997 and was classified as a non-PCB transformer. There are no known leaks or discharges associated with this transformer.

5.5.1.21 AOC-W-372: TC-27

AOC-W-372 TC-27 is the location of a 1,500 KVA cabinet transformer. The transformer is located east of the Boiler House. The transformer was sampled on March 14, 2002 and classified as a non-PCB transformer. There are no known leaks or discharges associated with this transformer.

5.5.1.22 AOC-W-373: TC-28

AOC-W-373 TC-28 is the location of a 1,500 KVA cabinet transformer. The transformer is located in Yard 3 east of AST 3110. The transformer was manufactured on April 1, 1995 and does not contain PCBs. There are no known leaks or discharges associated with this transformer.

5.5.1.23 AOC-W-374: TC-130

AOC-W-374 TC-130 is the location of a 1,500 KVA cabinet transformer. The transformer is located in Yard 5 east of AST 5156. The transformer was manufactured on September 1, 1998 and does not contain PCBs. There are no known leaks or discharges associated with this transformer.

5.5.1.24 AOC-W-375: TC-131

AOC-W-375 TC-131 is the location of a 1,500 KVA cabinet transformer. The transformer is located in Yard 5 between ASTs 5803 and 5804. The transformer was manufactured on September 1, 1998 and does not contain PCBs. There are no known leaks or discharges associated with this transformer.

5.5.2 Hazardous Material Storage or Handling Areas (PA Form Question E2)

Hazardous material is stored at the Chem South facility. A detailed description of the hazardous material storage area is described in Section 5.5.2 Hazardous Material Storage or Handling Areas in Volume II Chem South Facility.

5.5.3 Waste Treatment Areas (PA Form Question E3)

The only waste treated at the West Side facility is storm water. Details regarding the storm water treatment plant are provided in Section 5.3.5 Storm Sewer Collection System of this report.

5.5.4 Discolored or Spill Areas (PA Form Question E4)

Surficial staining was observed at a number of locations throughout the West Side during site inspections conducted in 2004 and 2005. The locations at which staining were observed are within AOCs identified and described in this report.

5.5.5 Open Areas Away From Production Areas (PA Form Question E5)

Based on a review of current and historical operations conducted at the site, at one time or another the entire site has been used as a production area. There are no open areas away from previous and current production areas at the West Side facility.

5.5.6 Areas of Stressed Vegetation (PA Form Question E6)

Almost the entire area of the West Side at one time or another was used for industrial purposes. The growth of vegetation (mostly weeds) is controlled by IMTT

personnel. No areas of obviously stressed vegetation due to operations conducted at the site were observed during site inspections in 2004 and 2005.

5.5.7 Underground Piping Including Industrial Process Sewers (PA Form Question E7)

A review of the following available historical plans was conducted to determine potential historical pipelines:

- 1985 Map for the Main Pipelines in Terminal
- 1960 Interamerican Refining Corporation Product Lines
- 1957 Pipelines for Yards 1 and 6
- 1954 Oil Piping Map for Yard 2
- 1952 Curries Product Line Connection to Piers
- 1948 Tankage Product Lines in Yard 3
- 1916 Standard Oil Co. Pipelines Map for Terminal
- 1992 Nelson & Co. Inactive Underground Pipelines

The historical plans show pipeline locations but do not differentiate between aboveground or belowground piping. Potential Historical Pipeline Locations are shown on **Figure 27**.

A description of the underground product lines at the West Side is presented below by yard.

YARD 1

Several underground product lines are reportedly located in Yard 1 including 11 active and 18 inactive. As of 1983, only petroleum products have reportedly been transported through these pipelines. The active lines in Yard 1 currently transport No. 2 oil, No. 6 oil, gasoline, and ethanol.

YARD 2

All underground product lines in Yard 2 are inactive. Four inactive product lines identified as B1, C, and FF reportedly transported gasoline and MTBE. Inactive product line 22 historically carried No. 4 and No. 6 fuel oil and was last used in 1974. Product line No. 33 carried No. 6 fuel oil and was last used in 1986. It is unknown what product line G was used to transport. All of these inactive product lines in Yard 2 were reportedly installed when Tidewater Oil Company owned the property.

YARD 3

All underground pipelines in Yard 3 are inactive. Several of these product lines are located along the southern, eastern, and western boundaries of Yard 3. Product line No. 17 reportedly carried No. 4 and No. 6 fuel oil and was last used in 1982. Product line No. 22 reportedly carried No. 4 and No. 6 fuel oil and was last used in 1974. Seven additional inactive product lines in Yard 3 reportedly carried No. 2 fuel oil, No. 6 fuel oil, and MTBE.

YARD 4

All underground pipelines in Yard 4 are inactive. Four of these product lines used for No. 2 fuel oil are located along the western boundary of Yard 4 and several others are located throughout Yard 4. The inactive lines were installed on various dates between the 1930's and 1958. Their use was discontinued at various times between 1958 and 1982. These product lines reportedly carried only petroleum products.

YARD 5

All underground product lines in Yard 5 are inactive. Three of these lines (No. 19, 20, and 21) are located along the eastern boundary of Yard 5. Installation of these lines was between the 1930's and 1968. They were last used between 1978 and 1984 for the transport of No. 6 fuel oil. No additional information concerning the history of these product lines is available at this time.

YARD 6

Seven active product lines have been identified in Yard 6. Six of these lines are used to transport No. 6 fuel oil and one is used to transport MTBE.

YARD 10 (Co-Gen)

Seven inactive product lines have been reported in Yard 10. These product lines reportedly transferred No. 2 fuel oil and No. 6 fuel oil. Two of the product lines were installed in the 1930's and two others were installed prior to 1956. All product lines in Yard 10 were reportedly last used in 1982. No other information is currently available for product lines in Yard 10.

5.5.8 Compressor Vent Discharges (PA Form Question E8)

There are no compressor vent discharges at the West Side Facility.

5.5.9 Non-Contact Cooling Water Discharges (PA Form Question E9)

There are no non-contact cooling water discharges at the West Side Facility.

5.5.10 Areas Which Receive Floor Or Storm Water From Potentially Contaminated Areas (PA Form Question E10)

The West Side operates under an approved DPCC Plan; see Section 5.3.5 Storm Water Sewer Collection System of this report for further details.

5.5.11 Active or Inactive Production Wells (PA Form Question E11)

There are no active or inactive production wells at the West Side Facility.

5.6 Building Interior Areas With A Potential For Discharge To The Environment (PA Form Question F)

5.6.1 Loading or Transfer Areas (PA Form Question F1)

There are no building loading or transfer areas at the West Side Facility.

5.6.2 Waste Treatment Areas (PA Form Question F2)

The Storm Water Treatment Plant is the only treatment area at the West Side Facility (see Section 5.3.5).

5.6.3 Boiler Rooms (PA Form Question F3)

Recently, it was discovered that a boiler room exists on site. IMTT is in the process of compiling the boiler information and will submit it to the NJDEP under separate cover.

5.6.4 Air Vents and Ducts (PA Form Question F4)

Air vents and ducts will be investigated, as appropriate, as part of the site-wide Site Investigation Work Plan in preparation for the IMTT sites.

5.6.5 Hazardous Material Storage or Handling Areas (PA Form Question F5)

See Section 5.5.2 Hazardous Material Storage and Handling Areas.

5.7 Any Other Site-Specific Area of Concern (PA Form Question G)

5.7.1 Indoor Air Quality

Based on the findings of the Free Product Investigation conducted in October 2004, a plume exists at the West Side facility. As such, a potential for exterior contamination to migrate inward to occupied buildings exists at the site. Therefore, a survey of buildings currently occupied has been completed for the West Side facility. **Table 7** identifies the buildings at the West Side facility, the number of occupants, dimensions, and building use. The locations of the buildings are shown on **Figure 28**.

IMTT proposes to conduct an air quality survey of occupied buildings as part of the SI Work Plan being submitted to the NJDEP in July 2005.

CERTIFICATIONS - NJ.A.C. 7:26-1.2 et. seq.

Any person making a submission to the Department required by this chapter and pursuant to N.J.A.C. 7:26E, shall include the following signature and notarized certification, for each technical submittal. Additionally, the certification shall indicate the case name and address, case number, type of documents submitted, e.g. Remedial Action Report, for each technical submittal.

TYPE OF DOCUMENT Preliminary Assessment Report – Westside

CASE NAME _____

CASE ADDRESS _____

CASE NUMBER _____

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge. I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

PRINTED NAME Richard R. Fisette TITLE Vice President

SIGNATURE _____ DATE 7-27-05

NOTARY SIGNATURE _____ DATE 7/27/05

LYNN MARIE SHEEHAN
NOTARY PUBLIC OF NEW JERSEY
Commission Expires 3/31/2009

Table 1: Summary of Violations at the West Side Facility

Company Cited for Violation/Case #	Program Description	Program Interest ID	Date of Discovery/Violation	Section of Statute, Rule or Permit Violated	Violation Description	Resolution or Status
IMTT-Bayonne	Air	10084	11/6/2002	[N.J.A.C. 7:27-8.3(e)]	Failed to fulfill all conditions and provisions of PCP010001 by exceeding the 735,000 gallons per hour maximum gasoline loading rate on September 27, 2002.	Satisfied
IMTT-Bayonne	Air	10084	3/19/2001	[N.J.S.A. 26:2C-19(e).e]	Caused the release of an air contaminant, sulfuric acid, resulting from a spill from a 1,000 gallon capacity sulfuric acid tank, in a quantity or concentration which posed a potential threat to the public health, welfare, or the environment or may have reasonably resulted in citizen complaints and failed to notify the Department immediately, in violation of N.J.S.A 26:2C-19e.	Satisfied
IMTT-Bayonne	Air	10084	8/22/2002	[N.J.A.C. 7:27-8.3(e)]	During the second quarter of 2002, the concentration of emissions of total hydrocarbons from the AvGas Vapor Recovery Unit, PCP960330, exceeded the maximum allowable concentration of 5000 ppm on June 26, 2002	Satisfied
IMTT-Bayonne	Air	10084	11/7/2002	[N.J.A.C. 7:27-8.3(e)]	Company failed to fulfill all conditions and provisions of Permit/Certificate #064948 (PCP960330) by operating the AvGas Vapor Recovery Unit, while aviation gasoline vapors were emitted into the outdoor atmosphere and therefore bypassing the control. Company's affirmative defense has been granted; NOV with AD granted.	Satisfied
IMTT-Bayonne	Air	10084	12/12/2002	[N.J.S.A. 26:2C-19(e).e]	Caused a release of an air contaminant, methyl acrylate, in a quantity or concentration which posed a potential threat to the public health, welfare or the environment or may have reasonably resulted in citizen complaint and failed to notify the Department immediately	Pending

Table 1: Summary of Violations at the West Side Facility

IMTT-Bayonne	DPCC Major Facilities	90100126000	4/7/2004	[N.J.A.C. 7:1E-4.4(a)]	Failed to demonstrate financial responsibility for cleanup and removal activities and for the removal of any abandoned structure they own or operate. The Certificate of Insureance must be worded per Appendix B(3) of the regulations	Satisfied
IMTT-Bayonne	Hazardous Waste	NJDO48809487	3/6/2000	[40 CFR 262.34(a)]	Failed to clearly mark container with date when accumulation period begins or to make mark visible for inspection. Specifically, failed to mark two full 55-gallon drums of D002 hazardous waste with an accumulation start date.	Satisfied
IMTT-Bayonne	Hazardous Waste	NJDO48809487	3/6/2000	[40 CFR 262.34(a)(2)]	Failed to ship waste off site within 90 days or to place it in an on-site authorized facility. Secifically, the company failed to ship two full 55-gallon drums of F003 hazardous waste, which were stored since August 9, 1999, to an authorized TSD facility	Satisfied
IMTT-Bayonne			12/23/2002		Failure to immediately notify the Dept of Methyl Acrylate ReleaseEA ID# PEA020006-10084	
IMTT-Bayonne			8/4/2002		Discharge of oil in navigable waters; Case # 1656903	
IMTT-Bayonne			5/27/2003		Garden hose left on and water from hose ran into oil containment pan, overflowing into the waterway causing a sheen; Case # 1746458	
IMTT-Bayonne			1/10/2003		3 Gallon release; result of a cold spill in which the termianl lost power and some lines froze; Case #1737200	
IMTT-Bayonne			9/22/2003		5 Gallons waste oil-malfunctioning waste treatment plant; Activity #1843066	
IMTT-Bayonne			6/1/2003		3 Gallon discharge of #6 fuel oil-leak in steam line- Case file 1816736	
IMTT-Bayonne			7/1/2004		DMR Quarterly Report not complete; NJPDES # NJ0002119, P.I. #46986	
IMTT-Bayonne			5/3/2004		Dripped residual oil from transfer hose into the Kill Van Kull; TK00135903	
IMTT-Bayonne			6/14/2004		1 pt #6 Black Oil into the Kill Van Kull; TK 00136367	
IMTT-Bayonne			9/16/2004		Leak of .5 gallons of oil; TK 00136368	

Ta : Summary of Violations at the West Side Facility

IMTT-Bayonne			4/14/2005		IMTT Interterminal Pipeline failed to submit an Annual Compliance Certification and also violated the Air Pollution Act; AONOCAPA EA ID# PEA050001-12195	

Table 2: Hazardous Substance Inventory - 2003 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
02055 Startex Antifreeze Coolant	Mixture/Liquid	N/A	TA	12625, 12636, 12661, 12662, 12664, 14104, 14352	17
02055 Startex Antifreeze Coolant	Mixture/Liquid	N/A	RC	TGOX100005, TILX21011, TILX21014, UTLX85848	14
02355 Texaco Antifreeze/Coolant JC-86	Mixture/Liquid	N/A	TA	11667	18
07958 Texaco Formulated Antifreeze/Coolant 1	Mixture/Liquid	N/A	TA	11688, 12619	18
07965 Texaco OEM ETX-628OD3 Blend	Mixture/Liquid	N/A	TA	11674, 12618	17
1,2 Butylene Oxide (in Neu-Tri)	Mixture/Liquid	106-88-7	TA	11672, 11675	13
1,4 Butanediol	Pure/Liquid	110-63-4	RC	GATX72627, GATX72628, GATX72629	18
1,4 Butanediol	Pure/Liquid	110-63-4	TA	14106, 14200, 14201	16
2-Ethyl Hexyl Acrylate	Mixture/Liquid	103-11-7	TA	14363	18
2-Propenoic Methyl Ester (in Methyl Methacry)	Mixture/Liquid	96-33-3	TA	14364	19
2790 Concentrate	Mixture/Liquid	N/A	TA	12623	15
2792 Concentrate	Mixture/Liquid	N/A	TA	12643	16
2797 Concentrate	Mixture/Liquid	N/A	TA	14108	14
Acetone	Pure/Liquid	67-64-1	RC	DCIU 74937	13
Aerothene MM	Mixture/Liquid	Unknown	TA	12630	16
Aminoethanolamine	Pure/Liquid	111-41-1	TA	12659	16
AMP 95	Mixture/Liquid	Proprietary	TA	12627	16
Antifreeze	Mixture/Liquid	N/A	BP	Packaging	16
Antifreeze	Mixture/Liquid	N/A	DS	Packaging	16
Butyl Acrylate	Mixture/Liquid	141-32-2	TA	14351, 14357	18
Cashew Nut Oil	Pure/Liquid	8007-24-7	TA	14350	19
Caustic Soda 50%	Pure/Liquid	1310-73-2	TA	11687, 11689, 12300, 12400, 12401, 12402, 12403, 12604	20
Cobrate TT 50S	Mixture/Liquid	N/A	TA	12616	14
D.E.R. 592-a80 Epoxy Resin	Mixture/Liquid	Unknown	TA	12654	15
D.E.R. 331 Epoxy Resin	Pure/Liquid	25085-99-8	TA	12656	16
Diethanolamine	Pure/Liquid	111-42-2	RC	TILX21013, TILX21016	14
Diethanolamine (in Triethanolamine 99)	Mixture/Liquid	111-42-2	RC	GATX88664, UTLX660602, UTLX660647, UTLX664523	12
Diethylene Glycol	Pure/Liquid	111-46-6	TA	14009, 14353, 14354, 14369	19
Dimethyl Formamide	Pure/Liquid	68-12-2	TA	14365	17
Dioctyl Phthalate	Pure/Liquid	117-84-0	TA	14050, 8032	19
Dipotassium Phospahte	Pure/Liquid		TA	12617	15
Dipropylene Glycol	Pure/Liquid	25265-71-8	TA	11670, 12612, 14368	19
Dipropylene Glycol Ind/lo	Pure/Liquid	25265-71-8	TA	14101	17

Table 2. Hazardous Substance Inventory - 2003 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Dowanol DB	Pure/Liquid	Unknown	TA	12412	16
Dowanol DM	Pure/Liquid	111-73-3	TA	14111	16
Dowanol EB	Pure/Liquid	111-76-2	TA	14367	18
Dowfrost HD	Mixture/Liquid	N/A	TA	12615	16
Dowfrost HTF	Mixture/Liquid	N/A	TA	12624	16
Dowper Solvent	Pure/Liquid	127-18-4	TA	11672, 11682	19
DWS 4002.01 Development Polyol	Mixture/Liquid	009082-00-2	TA	12653	16
Ethylene Diamine	Pure/Liquid	107-15-3	TA	14370	19
Ethylene Glycol (All Grades)	Pure/Liquid	107-21-1	TA	11676, 11677, 11678, 11684, 12500, 14073, 14074	19
Ethylene Glycol (in 02055 Startex Antifreeze)	Mixture/Liquid	107-21-1	RC	TGOX100005, TILX21011, TILX21014, UTLX85848	13
Ethylene Glycol (in 02055 Startex Antifreeze)	Mixture/Liquid	107-21-1	TA	12625, 12636, 12661, 12662, 12664, 14104, 14352	14
Ethylene Glycol (in 02355 Texaco Antifreeze)	Mixture/Liquid	107-21-1	TA	11667	18
Ethylene Glycol (in 07958 Texaco Formulated...)	Mixture/Liquid	107-21-1	TA	11688, 12619	18
Ethylene Glycol (in 07965 Texaco OEM ETX 6)	Mixture/Liquid	107-21-1	TA	11674, 12618	16
Ethylene Glycol (in Antifreeze)	Mixture/Liquid	107-21-1	DS	Packaging	16
Ethylene Glycol (in Antifreeze)	Mixture/Liquid	107-21-1	BP	Packaging	16
Ethylene Glycol (in Glycol Ether DE)	Mixture/Liquid	107-21-1	TA	14110	13
Ethylene Glycol (in Glycol Ether DE)	Mixture/Liquid	107-21-1	RC	UTLX48112	13
Ethylene Glycol (in Infineum C9394)	Mixture/Liquid	107-21-1	TA	14001	15
Ethylene Glycol (in N-217)	Mixture/Liquid	107-21-1	TA	11000, 11668, 12649, 12650	18
Ethylene Glycol (in Permanent Antifreeze and ...)	Mixture/Liquid	107-21-1	TA	12642	16
Ethylene Glycol (in Texaco Havoline DEX-COO...)	Mixture/Liquid	107-21-1	TA	12620, 12647	16
Ethylene Glycol (in Wintrex)	Mixture/Liquid	107-21-1	TA	14103	15
Exxate 600	Pure/Liquid	88230-35-7	TA	14365	17
Furfuryl Alcohol	Pure/Liquid	98-00-0	TA	14011, 14020, 14024	19
Glycerine, USP 96%	Pure/Liquid	56-81-5	TA	12655	16
Glycerine, USP 97.7%	Pure/Liquid	56-81-5	TA	11669	18
Glycol Ether DE	Mixture/Liquid	Unknown	RC	UTLX48112	16
Glycol Ether DE	Mixture/Liquid	Unknown	TA	14110	16
Hexanediol	Mixture/Liquid	629-11-8	TA	12613	18
Infineum C9394	Mixture/Liquid	Unknown	TA	14001	19
Infineum C9417 (Parabar 9417)	Mixture/Liquid	N/A	TA	14022, 14362	19

Table 2 - Hazardous Substance Inventory - 2003 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Isobutyl Methacrylate	Mixture/Liquid	97-86-9	TA	14359	18
Isononanoic Acid	Mixture/Liquid	N/A	TA	14051	18
Methanol	Pure/Liquid	67-56-1	TA	11680, 11681, 12601, 12602	20
Methyl Acrylate	Mixture/Liquid	96-33-3	TA	14356	18
Methyl Methacrylate	Mixture/Liquid	80-62-6	TA	14364	19
Methylene Chloride UG	Mixture/Liquid	101-77-9	TA	12631	12
Methylene Chloride (in Aerothene MM)	Mixture/Liquid	75-09-2	TA	12630	16
Methylene Chloride (in Methylene Chloride...)	Mixture/Liquid	75-09-2	TA	12631	12
Methylene Chloride FCC/NF Cyclohexane Inhi...	Pure/Liquid	75-09-2	TA	11675, 12631	16
Methylene Chloride, Technical	Pure/Liquid	75-09-2	TA	11685	18
Mono Ethylene Glycol	Pure/Liquid	N/A	TA	12301, 12603, 14006, 14021, 14023, 14025, 14052, 14355	19
MP Diol-Glycol	Mixture/Liquid	N/A	TA	12622	14
N-217	Mixture/Liquid	N/A	TA	11000, 11668, 12649, 12650	18
n-Methyl Pyrrolidone	Pure/Liquid	872-50-4	TA	12621, 14202	16
N-Paraffin	Pure/Liquid	64771-72-8	TA	14003	17
Naxomate 4L	Mixture/Liquid	N/A	TA	12665	16
Neu-Tri	Mixture/Liquid	79-01-6	TA	11672, 11675	18
o-Toluidine	Mixture/Liquid	95-53-4	TA	11673	17
OLOA 219M	Mixture/Liquid	N/A	TA	14008	17
Palatinol 711P	Mixture/Liquid	N/A	TA	11679	17
Palatinol 79P	Mixture/Liquid	N/A	TA	14360	17
Perchloroethylene	Pure/Liquid	127-18-4	TA	14358	19
Permanent Antifreeze and Summer Coolant (...)	Mixture/Liquid	N/A	TA	12642	16
Propylene Glycol	Pure/Liquid	57-55-6	TA	11671, 11686, 14100, 14102	19
Propylene Glycol	Pure/Liquid	57-55-6	RC	Pipeline	16
Propylene Oxide (in Aerothene MM)	Mixture/Liquid	75-56-9	TA	12630	12
Puradd FD100	Pure/Liquid	PMN92-0410	TA	14351, 14361	19
S Quata	Mixture/Liquid	Unknown	TA	12614	16
Safewing MP IV Anti-icing Fluid	Pure/Liquid	Unknown	TA	12657, 12658, 14073	17
Tebol 99	Pure/Liquid	75-65-0	TA	12646	16
Tetrahydrofuran	Pure/Liquid	109-99-9	TA	12635	16
Texaco Havoline DEX-COOL	Mixture/Liquid	Unknown	TA	12620, 12647	16
Trichloroethylene	Pure/Liquid	79-01-6	TA	12607, 14366	18
Triethanolamine 99	Mixture/Liquid	N/A	RC	GATX88664, UTLX660602, UTLX660647, UTLX664523	15

Table 2 - Hazardous Substance Inventory - 2003 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Triethanolamine 99	Mixture/Liquid	N/A	TA	12663	16
Triethylene Glycol	Pure/Liquid	112-27-6	RC	OPIX21054, OPIX82012, PLCX220503, PLCX221882, RACX51765, RACX51788, SHPX203209, SHPX203258, SHPX203260, UTLX48021, UTLX48061, UTLX660636	15
TRILON R BX LIQUID	Mixture/Liquid	Unknown	TA	12628	16
Versene 100	Mixture/Liquid	N/A	TA	12608	17
Versene 100	Mixture/Liquid	N/A	RC	GATX 32267, GATX 43121	15
Versene 100EP Chelating Agent	Pure/Liquid	000064-02-8	TA	12633	16
Versene 100XL	Mixture/Liquid	N/A	TA	12639	16
Versene 80	Mixture/Liquid	N/A	TA	12640, 12641	16
Voralux HL 430 Polyol	Mixture/Liquid	Unknown	TA	12660	16
Voranol 2070	Pure/Liquid	25791-96-2	TA	12666	15
Voranol 3010 Polyol	Mixture/Liquid	9082-00-2	TA	12605	16
Voranol 3943A	Mixture/Liquid	N/A	TA	12660	16
Wintrex	Mixture/Liquid	N/A	TA	14103	15
Zinc Compounds (in Infineum C9417 (Parabar...))	Mixture/Liquid	N982	TA	14022, 14362	19

Container Codes/Descriptions	Inventory Range Codes	
TA Aboveground storage tank	20- Greater than 10 million pounds	14- 10,001 to 50,000 pounds
RC Railcar	19- 1,000,001 to 10 million pounds	13- 1,001 to 10,000 pounds
BP Bottles or jugs (plastic)	18- 500,001 to 1 million pounds	12- 101 to 1,000 pounds
DS Steel Drum	17- 250,001 to 500,000 pounds	11- 11 to 100 pounds
	16- 100,001 to 250,000 pounds	10- 1 to 10 pounds
	15- 50,001 to 100,000 pounds	

Table 1. Hazardous Substance Inventory - 2004 Right-to-Know Survey.

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
02055 Startex Antifreeze Coolant	Mixture/Liquid	N/A	TA	12613, 12636, 12661, 12662, 12663, 12664, 14051, 14052, 14104, 14352	18
02055 Startex Antifreeze Coolant	Mixture/Liquid	N/A	RC	SHPX203063, SHPX203066, TILX21011, TILX21017, TILX21015, TILX21019, UTLX85846, UTLX85848	15
07958 Texaco Formulated Antifreeze/Coolant 1	Mixture/Liquid	N/A	TA	11688, 12619	17
07965 Texaco OEM ETX-628OD3 Blend	Mixture/Liquid	N/A	TA	11674, 12618	18
1,2 Butylene Oxide (in Neu-Tri)	Mixture/Liquid	106-88-7	TA	11675	13
1,2,4 Trimethylbenzene (in Aromatic 100)	Mixture/Liquid	95-63-6	TA	2156	17
1,2,4 Trimethylbenzene (in Reformate)	Mixture/Liquid	95-63-6	TA	4009, 4014, 5057, 5064, 5085, 5156, 5209, 5210, 5212, 6007, 6008, 6011	19
1,2,4 Trimethylbenzene (in G-Tab ...	Mixture/Liquid	95-63-6	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	
1,2,4-Trimethylbenzene (in Aromatic 150)	Mixture/Liquid	95-63-6	TA	2138	14
1,2,4-Trimethylbenzene (in Solvent Blend 128)	Mixture/Liquid	95-63-6	TA	2151, 2156	13
1,2,4-Trimethylbenzene (in T500-100)	Mixture/Liquid	95-63-6	TA	2151, 2156	14
1,2,4-Trimethylbenzene (in Varsol 1)	Mixture/Liquid	95-63-6	TA	2114, 2150	14
1,2,4-Trimethylbenzene (in Varsol 18)	Mixture/Liquid	95-63-6	TA	2107, 2150, 2155	12
124 Trimethylbenzene (in Slop Oil)	Mixture/Liquid	95-63-6	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	15
1,4 Butanediol	Pure/Liquid	110-63-4	TA	14106, 14200, 14201	16
2-Ethyl Hexyl Acrylate	Mixture/Liquid	103-11-7	TA	14363	18
4249 Naphtha	Mixture/Liquid	64742-89-8	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5808, 5809, 5810, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 9916, 9918, 9919, 9920, 9921	20
2790 A/F	Mixture/Liquid	N/A	TA	12623, 14108	15
2792 Fuschia A/F	Mixture/Liquid	N/A	TA	12643	16

Table 3: Hazardous Substance Inventory - 2004 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Actrel PC 95	Mixture/Liquid	Unknown	TA	2118, 2120, 2133	14
Aerothene MM	Mixture/Liquid	Unknown	TA	12630, 12631	16
Alkylate	Pure/Liquid	Unknown	TA	5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5188, 5209, 5210, 5212, 5213, 6006, 6011	
Aminoethanolamine	Pure/Liquid	111-41-1	TA	12659	16
AMP 95	Mixture/Liquid	Proprietary	TA	12627	15
Antifreeze	Mixture/Liquid	N/A	BP	Packaging	16
Antifreeze	Mixture/Liquid	N/A	DS	Packaging	16
Ap-105-10	Mixture/Liquid	7.05	TA	9743, 9771	14
Ap-205-20	Mixture/Liquid	N/A	TA	9771, 9773	17
AP-5000	Mixture/Liquid	N/A	TA	9811	17
AP-97-33	Mixture/Liquid	Proprietary	TA	9773	14
AP-97-AX35	Mixture/Liquid	N/A	TA	9771	14
AP-NGDM	Mixture/Liquid	Unknown	TA	9812	16
Aromatic 100	Mixture/Liquid	64742-95-6	TA	2156	19
Aromatic 150	Mixture/Liquid	64742-94-5	TA	2138	19
Aromatic 200	Mixture/Liquid	64742-94-5	TA	3121, 3122	17
Av Gas	Mixture/Liquid	N/A	TA	4017, 9816	19
Benzene (in AV Gas)	Mixture/Liquid	71-43-2	TA	4017, 9816	17
Benzene (in G-Tab Conventional)	Mixture/Liquid	71-43-2	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	19
Benzene (in Reformate)	Mixture/Liquid	71-43-2	TA	4009, 4014, 5057, 5064, 5085, 5156, 5209, 5210, 5212, 6007, 6008, 6011	19
Benzene (in Slop Oil)	Mixture/Liquid	71-43-2	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	14
Butane (in Slop Oil)	Mixture/Liquid	106-97-8	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	16
Butyl Acrylate	Mixture/Liquid	141-32-2	TA	14357	18
Cashew Nut Oil	Pure/Liquid	8007-24-7	TA	14350	19
Caustic Soda	Pure/Liquid	1310-73-2	TA	1121, 1706, 11687, 11689, 12300, 12400, 12401, 12402, 12403, 12604	20
Cobrate TT 50S	Mixture/Liquid	N/A	TA	12616	14
Crude Coke Oven Tar	Pure/Liquid	N/A	TA	8028	19

Table 3: Hazardous Substance Inventory - 2004 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Cumene (in Aromatic 100)	Mixture/Liquid	98-82-8	TA	2156	14
Cumene (in Slop Oil)	Mixture/Liquid	98-82-8	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	14
Cumene (in Solvent Blend 128)	Mixture/Liquid	98-82-8	TA	2151, 2156	13
Cyclohexane (in G-Tab Convention)	Mixture/Liquid	110-82-7	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	18
Cyclohexane (in Slop Oil)	Mixture/Liquid	110-82-7	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	16
Cyclohexane (in Exxsol Hexane)	Mixture/Liquid	110-82-7	TA	2140	14
D.E.R. 331 Epoxy Resin	Pure/Liquid	25085-99-8	TA	12656	17
Diesel Fuel No. 2 (in Transmix)	Mixture/Liquid	2444	TA	6100, 7640	15
Diethanolamine (DEA)	Pure/Liquid	111-42-2	RC	TILX21013, UTLX660603, UTLX660642, UTLX660645	14
Diethanolamine (in Triethanolamine 99)	Mixture/Liquid	111-42-2	TA	12663	13
Diethanolamine (in Triethanolamine 99)	Mixture/Liquid	111-42-2	RC	PLCX220505, UTLX660601, UTLX660662	13
Diethylene Glycol	Pure/Liquid	111-46-6	TA	14009, 14353, 14354, 14369	19
Diisobutylene	Pure/Liquid	25167-70-8	TA	1710, 8033	19
Dimethylbenzene (in Puradd AP-205-30)	Mixture/Liquid	1330-20-7	TA	9743, 9771, 9778	14
Dimethylbenzene (in Puradd AP-205-AX)	Mixture/Liquid	1330-20-7	TA	9771	13
Dimethylbenzene (in Puradd AP-205M2)	Mixture/Liquid	1330-20-7	TA	9753	14
Dimethylbenzene (in Puradd AP-NA4M)	Mixture/Liquid	1330-20-7	TA	9750, 9812	14
Dioctyl Phthalate (DOP)	Pure/Liquid	117-84-0	TA	8032	19
Dipotassium Phospahte	Pure/Liquid	7758-11-4	TA	12617	14
Dipropylene Glycol (DPG)	Pure/Liquid	25265-71-8	TA	11670, 12612, 12628, 14050	19
Dowanol DB	Pure/Liquid	Unknown	TA	12412, 12622	16
Dowanol DM	Pure/Liquid	111-73-3	TA	14111	16
Dowanol DPM	Pure/Liquid	34590-94-8	TA	12647	16
Dowanol EB	Pure/Liquid	111-76-2	TA	14367	18
Dowper Solvent	Pure/Liquid	127-18-4	TA	11672	19
Eastman PM Acetate	Pure/Liquid	12648	TA	12648	16
Ethylbenzene (in AP-205-20)	Mixture/Liquid	100-41-4	TA	9771, 9773	14
Ethylbenzene (in AP-5000)	Mixture/Liquid	100-41-4	TA	9811	14
Ethylbenzene (in AP-97-AX35)	Mixture/Liquid	100-41-4	TA	9771	13

Table 2 Hazardous Substance Inventory - 2004 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Ethylbenzene (in AP-NGDM)	Mixture/Liquid	100-41-4	TA	9812	13
Ethylbenzene (in G-Tab Convention)	Mixture/Liquid	100-41-4	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	19
Ethylbenzene (in L-0720-C)	Mixture/Liquid	100-41-4	TA	9778	14
Ethylbenzene (in Slop Oil)	Mixture/Liquid	100-41-4	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	15
Ethylbenzene (in Xylene (Aromatic Hydrocarbon	Mixture/Liquid	100-41-4	TA	2108, 2151, 9781	16
Ethylbenzene (in 2429 Naphtha)	Mixture/Liquid	100-41-4	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5808, 5809, 5810, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 9916, 9918, 9919, 9920, 9921	18
Ethylbenzene (in AP-105-10)	Mixture/Liquid	100-41-4	TA	9743, 9771	12
Ethylbenzene (in AP-97-33)	Mixture/Liquid	100-41-4	TA	9773	13
Ethylbenzene (in Puradd AP-205-30)	Mixture/Liquid	100-41-4	TA	9743, 9771, 9778	14
Ethylbenzene (in Puradd AP-205-49)	Mixture/Liquid	100-41-4	TA	9743	15
Ethylbenzene (in Puradd AP-205-AX SP)	Mixture/Liquid	100-41-4	TA	9771	13
Ethylbenzene (in Puradd AP-205M2)	Mixture/Liquid	100-41-4	TA	9753	13
Ethylbenzene (in Puradd AP-NA4M)	Mixture/Liquid	100-41-4	TA	9750, 9812	14
Ethylbenzene (in Reformate)	Mixture/Liquid	100-41-4	TA	4009, 4014, 5057, 5064, 5085, 5156, 5209, 5210, 5212, 6007, 6008, 6011	18
Ethylbenzene (in Solvent Blend 128)	Mixture/Liquid	100-41-4	TA	2151, 2156	13
Ethylbenzene (in T500-100)	Mixture/Liquid	100-41-4	TA	2151, 2156	13
Ethylene Diamine (EDA)	Pure/Liquid	107-15-3	TA	14370	17
Ethylene Glycol (All Grades) (EG)	Pure/Liquid	107-21-1	TA	11676, 11677, 11678, 11684, 12500, 14074	19
Ethylene Glycol (in 02055 Startex Antifreeze)	Mixture/Liquid	107-21-1	RC	SHPX203063, SHPX203066, TILX21017, TILX21011, TILX21015, TILX21019, UTLX85846, UTLX85848	13
Ethylene Glycol (in 02055 Startex Antifreeze)	Mixture/Liquid	107-21-1	TA	12613, 12636, 12661, 12662, 12663, 12664, 14051, 14052, 14104, 14352	15

Table 2. Hazardous Substance Inventory - 2004 Right-to-Know Su...

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Ethylene Glycol (in 07958 Texaco Formulated...)	Mixture/Liquid	107-21-1	TA	11688, 12619	17
Ethylene Glycol (in 07965 Texaco OEM ETX-6)	Mixture/Liquid	107-21-1	TA	11674, 12618	17
Ethylene Glycol (in 2790 A/F)	Mixture/Liquid	107-21-1	TA	12623, 14108	15
Ethylene Glycol (in 2792 Fuschia A/F)	Mixture/Liquid	107-21-1	TA	12643	15
Ethylene Glycol (in Antifreeze)	Mixture/Liquid	107-21-1	DS	Packaging	16
Ethylene Glycol (in Antifreeze)	Mixture/Liquid	107-21-1	BP	Packaging	16
Ethylene Glycol (in Glycol Ether DE)	Mixture/Liquid	107-21-1	TA	14110	13
Ethylene Glycol (in Havoline Dex-Coolant(	Mixture/Liquid	107-21-1	TA	12620	16
Ethylene Glycol (in Infineum C9394)	Mixture/Liquid	107-21-1	TA	14001	14
Ethylene Glycol (in N-217)	Mixture/Liquid	107-21-1	TA	11668, 12649, 12650	17
Ethylene Glycol (in Permanent Antifreeze and ...)	Mixture/Liquid	107-21-1	TA	12642	16
Ethylene Glycol (in Texaco Anti-freeze Coolant)	Mixture/Liquid	107-21-1	TA	11667	17
Ethylene Glycol (in Wintrex)	Mixture/Liquid	107-21-1	TA	14103	15
Exx-Print 380	Mixture/Liquid	Unknown	TA	2120, 3121, 3122	14
Exxal 10	Pure/Liquid	68256-85-2	TA	8047	19
Exxal 13	Pure/Liquid	68256-86-3	TA	8048	19
Exxal 8	Pure/Liquid	68526-83-0	TA	8049, 811	19
Exxate 600	Pure/Liquid	88230-35-7	TA	14365, 3126	17
Exxsol D-40	Pure/Liquid	64742-47-8	TA	2107, 2110, 2155	19
Exxsol D-60	Pure/Liquid	64742-47-8	TA	2119	19
Exxsol D-80	Pure/Liquid	64742-47-8	TA	2133	17
Exxsol Heptane	Mixture/Liquid	64742-49-0	TA	2148	19
Exxsol Hexane	Mixture/Liquid	64742-49-0	TA	2140	18
Foray Dry Chemical Extinguishing Agent	Pure/Liquid	N/A	TA	11670, 11671, 11672, 11673, 11675, 11676, 11677, 11678, 11679, 11680, 11681, 11682, 11683, 11684, 11685, 11686, 11687, 12301, 12400, 12401, 12402, 12403, 12500, 12601, 12602, 12603, 12606, 12608, 12614, 14006, 14050, 14074, 14100, 14101, 14012, 14352, 14354, 14355, 14361, 14367, 14369, 1710, 2096, 2097, 2117, 2120, 2139, 2141, 2142, 2144, 2145, 2146, 2147, 2153, 2156, 4010, 4011, 4012, 4015, 4016, 4051, 8026, 8027, 8032, 8047, 8048, 8049	20

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Fuel Oil #2	Pure/Liquid	Unknown	TA	1011, 1012, 1038, 1104, 1109, 1110, 1162, 4001, 4002, 4003, 4004, 4005, 4006, 4007, 4008, 4009, 4013, 4014, 4018, 4501, 4502, 4504, 4505, 4506, 4513, 4514, 4516, 5604, 5605, 5606, 5801, 5802, 5804, 5805, 5806, 5808, 5809, 5811, 5812, 6105, 7503, 7504, 7506, 7508, 7509, 7510, 7511, 7512, 7513, 7514, 7515, 7516, 7517, 7518, 7593, 7594, 7595, 7701, 7702, 7703, 7704, 7705, 7708, 7709, 7710, 7711, 8560, 8561, 8564, 8571, 9916, 9918, 9919, 9920, 9921	20
Fuel Oil #6	Pure/Liquid	Unknown	TA	1058, 1066, 1105, 1106, 1107, 1161, 1173, 1174, 1175, 1176, 1700, 1701, 1702, 1703, 1704, 1705, 1707, 1708, 3841, 3842, 3843, 3844, 3921, 3922, 3923, 3924, 6003, 6004, 6005, 6012, 6203, 6204, 6205, 6206, 7507, 7511, 7512, 7514, 7515, 7516, 7517, 7518, 8025, 8029, 8065, 8066, 8067, 8068, 8069, 8070, 8554, 8555, 8556, 8557, 8558, 8562, 8563, 8572, 8573, 9904, 9917, 9955	20
Furfuryl Alcohol	Pure/Liquid	98-00-0	TA	14011, 14020	19
G-Tab Conventional	Mixture/Liquid	Unknown	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	20
Gasoline	Pure/Liquid	8006-61-9	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5211, 5212, 5213, 5801, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 6101, 9916, 9918, 9919, 9920, 9921	20

Table 5. Hazardous Substance Inventory - 2004 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Gasoline (in G-Tab Conventional)	Mixture/Liquid	8006-61-9	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	20
Gasoline (in Transmix)	Mixture/Liquid	8006-61-9	TA	6100, 7640	16
Glycol Ether DE	Mixture/Liquid	Unknown	TA	14110	16
Havoline Dex-Coolant	Mixture/Liquid	Unknown	TA	12620	16
Heptene	Pure/Liquid	25339-56-4	TA	2153	19
Hydrotreated light naphthenic distillate	Pure/Liquid	64742-53-6	TA	6106, 7506, 7513, 7593, 7594, 7595	18
1,6 Hexanediol	Mixture/Liquid	629-11-8	TA	12613, 9844	17
Infineum 500 (Paraflow 500)	Mixture/Liquid	N/A	TA	7000, 7001, 9813, 9814	17
Infineum C9380	Mixture/Liquid	Unknown	TA	14019	14
Infineum C9394	Mixture/Liquid	Unknown	TA	14001	19
Infineum C9417 (Parabar 9417)	Mixture/Liquid	N/A	TA	14022, 14362, 9880	19
Infineum C9922 (Parapol 2225)	Pure/Liquid	9003-29-6	TA	8036	19
IPA	Pure/Liquid	67-63-0	TA	14368, 3107, 3114, 8027	19
Isobutyl Methacrylate	Mixture/Liquid	97-86-9	TA	14359	18
Isononanoic Acid	Mixture/Liquid	N/A	TA	14051	16
Isopar C	Pure/Liquid	64741-66-8	TA	3115, 3116	17
Isopar E	Pure/Liquid	64741-66-8	TA	3117, 3118	17
Isopar G	Pure/Liquid	64742-48-9	TA	2117	18
Isopar H	Pure/Liquid	64742-48-9	TA	2147	19
Isopar K	Pure/Liquid	Unknown	TA	2139, 2147	14
Isopar L	Pure/Liquid	64742-48-9	TA	2139	19
Isopar M	Pure/Liquid	64742-47-8	TA	2135, 2136	18
Jayflex 251	Mixture/Liquid	Unknown	TA	2098, 2123, 2126, 2129, 2141, 2142, 2144, 8037	14
Jayflex 274	Mixture/Liquid	Unknown	TA	2123, 2144	15
Jayflex 282	Mixture/Liquid	Unknown	TA	2123, 2126, 2129, 2141, 2142, 2144	14
Jayflex 442	Mixture/Liquid	Unknown	TA	2109, 2126, 2145	14
Jayflex L711P	Mixture/Liquid	392662-40-7	TA	2102	16
Kerosene	Pure/Liquid	8008-20-6	TA	1011, 1012, 1104, 4504, 6105, 7503, 7506, 7509, 7511, 7518	20
Kerosene (in Transmix)	Mixture/Liquid	8008-20-6	TA	6100, 7640	14
Kerosene (in Puradd AP-205-K30)	Mixture/Liquid	8008-20-6	TA	9771	14
Kerosene (in Puradd AP-205-K50)	Mixture/Liquid	8008-20-6	TA	9771	16

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
L-0720-C	Mixture/Liquid	Unknown	TA	9778	16
Marine Diesel (MDO)	Pure/Liquid	Unknown	TA	1159, 1709, 4501, 5186, 5803, 5806, 5810	19
Methanol	Pure/Liquid	67-56-1	TA	11680, 11681, 11682, 11683, 12601, 12602, 4010, 4011, 4012, 4015	20
Methyl Acrylate	Mixture/Liquid	96-33-3	TA	14356	18
Methy ethyl ketone (in Solvent Blend 104)	Mixture/Liquid	78-93-3	TA	2151, 4016	14
Methyl Ethyl Ketone (MEK)	Pure/Liquid	78-93-3	TA	4016	19
Methyl Methacrylate (MMA)	Mixture/Liquid	80-62-6	TA	14364	19
Methyl Tertiary Butyl Ether (MTBE)	Pure/Liquid	1634-0404	TA	5186, 5188, 5209, 5210, 5212, 5213, 5214, 5804, 5809, 5810, 6006, 6011	19
Methyl-Tert-Butyl Ether (in Slop Oil)	Mixture/Liquid	1634-04-4	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	
Methylene Chloride (in Aerothene MM)	Mixture/Liquid	75-09-2	TA	12630, 12631	16
Methylene Chloride FCC/NF Cyclohexane Inhi...	Pure/Liquid	75-09-2	TA	12631	16
Methylene Chloride, Technical	Pure/Liquid	75-09-2	TA	11685	19
Mono Ethylene Glycol (MEG)	Pure/Liquid	N/A	TA	11679, 12301, 12603, 14006, 14355	19
N-217	Mixture/Liquid	N/A	TA	11668, 12649, 12650	17
n-Heptane (in Exxsol Heptane)	Mixture/Liquid	110-54-3	TA	2148	19
n-Heptanoic Acid	Pure/Liquid	111-14-8	TA	1034	19
n-Hexane (in AV Gas)	Mixture/Liquid	110-54-3	TA	4017, 9816	13
n-Hexane (in Exxsol Hexane)	Mixture/Liquid	110-54-3	TA	2140	18
n-Hexane (in G-Tab Conventional)	Mixture/Liquid	110-54-3	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	19
n-Hexane (in Reformate)	Mixture/Liquid	110-54-3	TA	4009, 4014, 5057, 5064, 5085, 5156, 5209, 5210, 5212, 6007, 6008, 6011	19
n-Methyl Pyrrolidone	Pure/Liquid	872-50-4	TA	12621, 14202	16
N-Paraffin	Pure/Liquid	64771-72-8	TA	9750, 9997	15
Naphthalene (in Aromatic 150)	Mixture/Liquid	91-20-3	TA	2138	16
Naphthalene (in Aromatic 200)	Mixture/Liquid	91-20-3	TA	3121, 3122	15
Naphthalene (in Infineum 500 (Paraflow 500))	Mixture/Liquid	91-20-3	TA	7000, 7001, 9813, 9814	14
Naphthalene (in Puradd AP-205-30)	Mixture/Liquid	91-20-3	TA	9743, 9771, 9778	12

Table 3: Hazardous Substance Inventory - 2004 Right-to-Know Survey

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Naphthalene (in Puradd AP-205-AX Spe	Mixture/Liquid	91-20-3	TA	9771	12
Naphthalene (in Puradd AP-205-K50)	Mixture/Liquid	91-20-3	TA	9771	12
Naphthalene (in Slop Oil)	Mixture/Liquid	91-20-3	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	15
Napthalene (in AP-205-20)	Mixture/Liquid	91-20-3	TA	9771, 9773	13
Naxonate 4L	Mixture/Liquid	N/A	TA	12665	14
Neu-Tri	Mixture/Liquid	79-01-6	TA	11675	18
Nitrogen	Pure/Liquid	7727-37-9	TA	Chem South, Tank #1, Tank #2, Tank #3, Tank #4, Tank #6, Tank #8, Tank #9	15
Nonene	Pure/Liquid	27215-95-8	TA	3184	18
o-Toluidine	Mixture/Liquid	95-53-4	TA	11673	18
P5224	Mixture/Liquid	Unknown	TA	9813, 9844	18
Palatinol 711P	Mixture/Liquid	N/A	TA	11679, 14003	17
Palatinol TOTM	Mixture/Liquid	3319-31-1	TA	9751	14
Pentane (in Slop Oil)	Mixture/Liquid	109-66-0	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	14
Perchloroethylene	Pure/Liquid	127-18-4	TA	14358	18
Permanent Antifreeze and Summer Coolant (...)	Mixture/Liquid	N/A	TA	12642	16
PM Solvent (Arcosolv PM-Electronics)	Mixture/Liquid	Unknown	TA	12637	16
Propylene Oxide (in Aerothene MM)	Mixture/Liquid	75-56-9	TA	12630, 12631	12
Puradd AP-205-30	Mixture/Liquid	Unknown	TA	9743, 9771, 9778	16
Puradd AP-205-49	Mixture/Liquid	Unknown	TA	9743	16
Puradd AP-205-AX Special	Mixture/Liquid	Unknown	TA	9771	14
Puradd AP-205-K30	Mixture/Liquid	Unknown	TA	9771	15
Puradd AP-205-K50	Mixture/Liquid	Unknown	TA	9771	17
Puradd AP-205M2	Mixture/Liquid	Unknown	TA	9753	16
Puradd AP-NA4M	Mixture/Liquid	Unknown	TA	9750, 9812	17
Puradd FD100 (PIBA)	Pure/Liquid	PMN92-0410	TA	14352, 14361, 9777	19
Reformate	Mixture/Liquid	68955-35-1	TA	4009, 4014, 5057, 5064, 5085, 5156, 5209, 5210, 5212, 6007, 6008, 6011	20
SC-84	Pure/Liquid	Proprietary	TA	9752	16
Sec Butyl Alcohol	Pure/Liquid	78-92-2	TA	2131, 2132, 3126	18
Sec-butanol (in Solvent Blend 114)	Mixture/Liquid	78-92-2	TA	2131, 2132, 3126, 4009, 4014, 5805, 5808, 5810, 5811, 5812, 8049, 9916, 9918, 9919, 9920, 9921	19
Slop Oil	Mixture/Liquid	Unknown	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	19
Solvent Blend 104	Mixture/Liquid	Unknown	TA	2151, 4016	14

Table 2 Hazardous Substance Inventory - 2004 Right-to-Know Summary

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Solvent Blend 114	Mixture/Liquid	Unknown	TA	2131, 2132, 3126, 4009, 4014, 5805, 5808, 5810, 5811, 5812, 8049, 9916, 9918, 9919, 9920, 9921	19
Solvent Blend 128	Mixture/Liquid	Unknown	TA	2151, 2156	14
Solvent Blend 164	Mixture/Liquid	Unknown	TA	2135, 3117, 3118	14
T500-100	Mixture/Liquid	Unknown	TA	2151, 2156	14
Tebol 99	Pure/Liquid	75-65-0	TA	12646	16
Tert-Butyl Alcohol (in Slop Oil)	Mixture/Liquid	75-65-0	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	16
Tetrahydrofuran (THF)	Pure/Liquid	109-99-9	TA	12634, 12635	17
Texaco Anti-freeze Coolant	Mixture/Liquid	Unknown	TA	11667	18
Toluene	Pure/Liquid	95-80-7	TA	2152, 2154, 4009, 5805	19
Toluene (in 2429 Naphtha)	Mixture/Liquid	108-88-3	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5808, 5809, 5810, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 9916, 9918, 9919, 9920, 9921	19
Toluene (in Av Gas)	Mixture/Liquid	108-88-3	TA	4017, 9816	18
Toluene (in Reformate)	Mixture/Liquid	108-88-3	TA	4009, 4014, 5057, 5064, 5085, 5156, 5209, 5210, 5212, 6007, 6008, 6011	19
Toluene (in Slop Oil)	Mixture/Liquid	108-88-3	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	18
Toluene (in Xylene (Aromatic Hydrocarbon))	Mixture/Liquid	108-88-3	TA	2108, 2151, 9781	13
TPM	Mixture/Liquid	Unknown	RC	RACX51361, RACX51484, RACX51919	15
Transmix	Mixture/Liquid	Unknown	TA	6100, 7640	17
Trichloroethylene (TCE)	Pure/Liquid	79-01-6	TA	14366	18
Triethanolamine 99	Mixture/Liquid	N/A	RC	PLCX220505, UTLX660601, UTLX660662	16
Triethanolamine 99	Mixture/Liquid	N/A	TA	12663	17
Triethylene Glycol	Pure/Liquid	112-27-6	RC	PLCX221884, SHPX203206, UTLX660638	16
Triethylene Glycol	Mixture/Liquid	112-27-6	TA	12629	16
TRILON R BX LIQUID	Mixture/Liquid	Unknown	TA	12628	16
Varsol 1	Mixture/Liquid	8052-41-3	TA	2114, 2150	19
Varsol 18	Mixture/Liquid	Unknown	TA	2107, 2150, 2155	14
Versene 100	Mixture/Liquid	N/A	TA	12608	18

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Versenex 100XL	Mixture/Liquid	N/A	TA	12639	18
Versene 80	Mixture/Liquid	N/A	TA	12640, 12641	16
Vinyl Acetate (in Infineum 500 (Paraflow 500))	Mixture/Liquid	108-05-4	TA	7000, 7001, 9813, 9814	13
Wintrex	Mixture/Liquid	N/A	TA	14103	15
Xylene (Aromatic Hydrocarbon)	Mixture/Liquid	1330-20-7	TA	2108, 2151, 9781	18
Xylene (in AP-105-10)	Mixture/Liquid	1330-20-7	TA	9743, 9771	13
Xylene (in AP-NGDM)	Mixture/Liquid	1330-20-7	TA	9812	14
Xylene (in L-0720-C)	Mixture/Liquid	1330-20-7	TA	9778	14
Xylene (in Puradd AP-205-49)	Mixture/Liquid	1330-20-7	TA	9743	14
Xylene (in Reformate)	Mixture/Liquid	1330-20-7	TA	4009, 4014, 5057, 5064, 5085, 5156, 5209, 5210, 5212, 6007, 6008, 6011	19
Xylene (in Slop Oil)	Mixture/Liquid	1330-20-7	TA	3125, 3179, 3182, 3185, 3186, 8097, 8198, 8199, 9986, 9987	17
Xylene (in Solvent Blend 104)	Mixture/Liquid	1330-20-7	TA	2151, 4016	14
Xylene (in Solvent Blend 128)	Mixture/Liquid	1330-20-7	TA	2151, 2156	14
Xylene (in T500-100)	Mixture/Liquid	1330-20-7	TA	2151, 2156	13
Xylene (in Xylene (Aromatic Hydrocarbon))	Mixture/Liquid	1330-20-7	TA	2108, 2151, 9781	18
Xylene (mixed isomers) (in 2429 Naphtha)	Mixture/Liquid	1330-20-7	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5808, 5809, 5810, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 9916, 9918, 9919, 9920, 9921	19
Xylene (mixed Isomers) (in AP-205-20)	Mixture/Liquid	1330-20-7	TA	9771, 9773	14
Xylene (mixed Isomers) (in AP-5000)	Mixture/Liquid	1330-20-7	TA	9811	15
Xylene (mixed Isomers) (in AP-97-33)	Mixture/Liquid	1330-20-7	TA	9773	14
Xylene (mixed Isomers) (in AP-97-AX)	Mixture/Liquid	1330-20-7	TA	9771	13
Xylene (mixed isomers) (in Aromatic 100)	Mixture/Liquid	1330-20-7	TA	2156	14
Xylenes (in G-Tab Conventional)	Mixture/Liquid	1330-20-7	TA	4009, 4014, 5057, 5059, 5064, 5070, 5073, 5076, 5077, 5085, 5156, 5161, 5162, 5163, 5164, 5184, 5186, 5187, 5188, 5209, 5210, 5212, 5213, 5214, 5801, 5802, 5803, 5804, 5805, 5806, 5808, 5809, 5810, 5811, 5812, 6002, 6006, 6007, 6008, 6009, 6010, 6011, 9916, 9918, 9919, 9920, 9921	19

Table ... Hazardous Substance Inventory - 2004 Right-to-Know Su...

Product Name/ID	Description	CAS Number	Storage Method	Storage Location	Average Daily Inventory
Zinc Compounds (in Infineum C9417 (Parabar...))	Mixture/Liquid	N982	TA	14022, 14362, 9880	19
Zinc Compounds (in P5224)	Mixture/Liquid	N982	TA	9813, 9844	14

Container Codes/Descriptions	Inventory Range Codes	
TA Aboveground storage tank	20- Greater than 10 million pounds	14- 10,001 to 50,000 pounds
RC Railcar	19- 1,000,001 to 10 million pounds	13- 1,001 to 10,000 pounds
BP Bottles or jugs (plastic)	18- 500,001 to 1 million pounds	12- 101 to 1,000 pounds
DS Steel Drum	17- 250,001 to 500,000 pounds	11- 11 to 100 pounds
	16- 100,001 to 250,000 pounds	10- 1 to 10 pounds
	15- 50,001 to 100,000 pounds	

Table 4 Summary of Off-shore Discharges at the West Side Facility

Date	NJDEP Case Number	Location	Product	Quantity Released	Unit
9/9/2004	04-09-09-2346-11	Pier B, East Berth	Marine Diesel Oil	10	Gallons
8/25/2004	04-08-25-1642-37	Pier 1	Sodium Hydroxide	136	Gallons
8/23/2004	04-08-23-1502-03	Kill Van Kull between Pier A & Pier 1	Hydraulic Oil (Biodegradable Vegetable Oil)	<10	Gallons
8/19/2004	04-08-19-2007-54	Pier 3	2 Oil	<2	Gallons
7/25/2004	04-07-25-1043-36	Pier 3 West Berth	2 Oil	10	Gallons
6/19/2004	04-06-19-0721-41	Pier B, Berth East	2 Oil	20	Gallons
6/15/2004	04-06-15-2006-42	Pier B, East	Marine Diesel Oil	3	Gallons
6/14/2004	04-06-14-0836-06	Pier #1 Head	Cutter	2	Gallons
5/3/2004	04-05-03-1646-12	Pier 1, Berth East	6-Oil	2	Pints
3/23/2004	04-03-23-0524-30	Pier #4, East	2 Oil	3	Gallons
2/25/2004	04-02-25-0808-46	Pier 1 West, Kill Van Kull	MTBE	1	Quarts
1/17/2004	04-01-17-0948-36	Pier A, 6 oil load arm blank, on Pier A & Kill Van Kull	6-Oil	1	Pints
12/8/2003	03-12-08-1549-44	Pier 1 West Caustic Hose	Sodium Hydroxide	<1	Gallons
11/9/2003	03-11-09-1652-24	Mobil Pier east side, Kill Van Kull	Marine Diesel Oil	10	Gallons
9/22/2003	03-09-22-0755-31	Pier 3 : Kill Van Kull	Unknown	5	Gallons
6/15/2003	03-06-15-1426-22	Pier A	Gasoline	5	Gallons
6/6/2003	03-06-06-0937-43	Pier 3 West Kill Van Kull	Hydraulic Oil	.5	Gallons
6/1/2003	03-06-01-1113-24	Pier 1 West 6 oil riser (Kill Van Kull)	6 oil	2 -3	Gallons
5/4/2003	03-05-04-1253-53	Pier A	Gasoline	5	Gallons
4/7/2003	03-04-07-1103-44	Mobil Pier	Mobil Guard 450 Lube Oil	<1	Gallons
3/28/2003	03-03-28-0726-49	Pier 1	6 Oil	6	Gallons
10/29/2002	02-10-29-1510-28	Pier3 East	6 Oil	<0.5	Pints
10/29/2002	02-10-29-1332-16	Mobil Pier	Mobil Guard 450 Lube Oil	<1	Gallons
8/8/2002	02-08-08-1751-26	Mobil Pier	Marine Diesel Oil	2	Gallons
8/4/2002	02-08-04-1538-47	Pier 1 Head	6 Oil	33	Gallons
4/24/2002	02-04-24-1200-26	Pier 4 West	Hydraulic Oil	0.5	Gallons
4/5/2002	02-04-05-1629-36	Pier 4 East	Hydraulic Oil	0.5	Gallons
3/17/2002	02-03-17-1434-33	Pier 3 West Side	6 Oil	<1	Pints
3/7/2002	02-03-07-1110-37	Pier A	6 Oil	<1	Pints
10/29/2001	01-10-29-1313-40	Pier 3, Kill Van Kull	Gasoline	200	Gallons
7/28/2001	01-07-28-1122-41	Mobil Pier, Kill Van Kull	MDO	2	Gallons
7/22/2001	01-07-22-0957-50	Mobil Pier, JP-4 pipeline	#6 Fuel Oil	10	Gallons
5/20/2001	01-05-20-1213-43	Pier B, Kill Van Kull	MDO	2	Gallons

Ta. ummary of Off-shore Discharges at the West Side Facility

4/10/2001	01-04-10-2358-34	Mobil Pier, Kill Van Kull	MDO	50	Gallons
10/11/2000	001011113757	Kill Van Kull, Pier B	MDO	3	Gallons
8/26/2000	000826073525	Mobil Pier, Kill Van Kull	MDO	5	Gallons
8/19/2000	000819114452	Kill Van Kull, Mobil Pier	MDO	10	Gallons
8/9/2000	000809225225	Kill Van Kull	MTBE	5	Gallons
7/13/2000	000713143427	Mobil Pier, Pier B, on the tug only	Lube Oil	0	
12/18/1999	991218090854	Kill Van Kull	#6 Oil	420	Gallons
11/1/1999	991101173635	Kill Van Kull	Unknown	Unknown	
10/2/1999	991002160028	Kill Van Kull	Unknown	Unknown	NA
5/2/1999	990502000006	Kill Van Kull	#2 Oil	2	Gallons
4/18/1999	990418154351	Pier 1 & Kill Van Kull	Lite Cycle Oil	5	Gallons
2/11/1999	990211095156	Kill Van Kull	Hydraulic Fluid	5	Gallons
1/27/1999	990127203350	Kill Van Kull	MDO	5	Gallons
1/22/1999	990122190548	Kill Van Kull	#6 Oil	<1	Gallons
11/30/1998	981130143218	Kill Van Kull	Mobilgard 450	10	Gallons
11/7/1998	981107192443	Kill Van Kull	#6 Oil	80	Gallons
6/30/1998	980630103819	Kill Van Kull	Unknown	Unknown	NA
4/9/1998	980409144159	Kill Van Kull	#6 Oil	50	Gallons
2/24/1998	980224051054	Kill Van Kull, Pier 1 East	#6 Oil	5	Gallons
2/3/1998	980203134223	Kill Van Kull, Pier 1 Eastside	#6 Oil	3	Gallons
1/17/1998	980117135913	Kill Van Kull, Pier 1	Slop Oil	5	Gallons
1/11/1998	980111131037	Kill Van Kull, Mobil Pier	Lube Oil	15	Gallons
12/16/1997	971216102153	Kill Van Kull, Mobil Pier	Marine Diesel Oil	10	Gallons
11/30/1997	971130162927	Kill Van Kull	Marine Diesel Oil	15	Gallons
11/10/1997	971110161257	Kill Van Kull	#6 Oil	<1	Pints
10/31/1997	971031214952	Kill Van Kull, Pier 1	#6 Oil	10	Gallons
7/21/1997	970721155309	Kill Van Kull, Pier B	MDO	5	Gallons
12/26/1996	961226182220	Kill Van Kull, Pier B	Marine Diesel Fuel	5	Gallons
12/3/1996	961203233215	Pier B	Marine Diesel Fuel	20	Gallons
11/28/1996	961128025708	Kill Van Kull	Marine Diesel Fuel	4	Gallons
9/25/1996	960925132837	Near Pier 1	Unknown	sheen	
5/9/1996	960509125204	Pier 1	Bunker Fuel (Mixture #6 & #2 Fuel)	15	Gallons
12/8/1995	951208145626	Pier A, Kill Van Kull	#6 Fuel Oil	<1	Gallons
10/2/1995	951002173522	Kill Van Kull	Lube Oil	10	Gallons
9/28/1995	950928171603	Kill Van Kull, Pier 3	#6 Fuel Oil	8	Gallons
6/14/1995	950614185750	Pier #4	Gasoline/#2 Fuel	2	Gallons

Table . . ummary of Off-shore Discharges at the West Side Facility

5/18/1995	950518172713	Kill Van Kull	MDO Marine Diesel Fuel	2	Gallons
4/24/1995	950424032548	Kill Van Kull	MDO - Marine Diesel Oil	5	Gallons
4/6/1995	950406080847	Kill Van Kull	Unknown	Sheen	
3/15/1995	950315180700	Kill Van Kull	Hydraulic Fluid	<1	Gallons
3/12/1995	950312093000	Kill Van Kull	#2 Diesel	20	Gallons
3/11/1995	950311133500	Kill Van Kull	Bilge Oil	10	Gallons
1/28/1995	950128121756	Kill Van Kull	MDO	4	Gallons
1/27/1995	950127201159	Pier A, Kill Van Kull	MDO	20	Gallons
12/31/1994	941231210500	Kill Van Kull	#2 Fuel/Diesel Fuel	sheen	
12/1/1994	941201191111	Pier 3E	#6 Oil	5	Gallons
10/14/1994	941014090700	Kill Van Kull	MDO - Marine Diesel Fuel	5	Gallons
9/5/1994	940905170752	Pier #1, West	#6 Oil	30	Gallons
7/30/1994	940730165730	Kill Van Kull	MDO #2 Fuel Oil	10	Gallons
7/1/1994	940701095630	Pier #3 West	Off Spec #6 Fuel Oil	Unknown	NA
3/9/1994	940309150012	Kill Van Kull	Diesel Fuel	3	Gallons
2/19/1994	940219223152	Pier #3 West	Off spec oil and water mixture	Slick	
12/9/1993	93-12-09	Pier 3	Gasoline	1	Gallons
11/22/1993	931122084849	Pier 1, Kill Van Kull	Diesel Fuel	5	Gallons
10/21/1993	931021124532	Kill Van Kull	Marine Diesel Fuel	10	Gallons
10/17/1993	931017181453	Kill Van Kull	Marine Diesel Fuel	15	Gallons
10/6/1993	931006212437	Pier 3, Kill Van Kull	#6 Oil	10	Gallons
8/8/1993	930808051200	Mobil Pier	MDO	5	Gallons
6/15/1993	930615195549	Mobil Tug Pier	MDO	5	Gallons
4/24/1993	930424190520	Mobil Tug Pier	MDO	5	Gallons
1/18/1993	930118083415	Pier A, Kill Van Kull	#6 Fuel Oil	10500	Gallons
12/20/1992	921220093544	Mobil Tug Pier	Marine Diesel Fuel	30	Gallons
10/23/1992	921023021105	Pier B	# 2 Oil - Diesel	3	Gallons
10/13/1992	92-10-13	Pier 1	#6 Oil	Unknown	NA
10/7/1992	92-10-07	Pier 1	Unknown	sheen	NA
9/30/1992	92-09-30	Pier 3	#6 Oil	1	Gallons
9/21/1992	920921084634	Pier #3 West	Gasoline	2	Gallons
6/4/1992	92-06-04	Pier B	Unknown	sheen	NA
5/30/1992	920530124743	Pier B	Marine Diesel Oil	10	Gallons
5/2/1992	920502173132	Pier B, Kill Van Kull	Lube Oil	1	Gallons
4/29/1992	920429194207	Pier 1, Kill Van Kull	Super Unleaded Gasoline	5	Barrels
4/22/1992	920422105935	Mobil Tug Pier	Lube Oil	<1/2	Pints
4/10/1990	9004100859	In and around #1 Pier	#6 Oil	Globules	NA

Table ... Summary of Off-shore Discharges at the West Side Facility

10/3/1989	89-10-03	Pier A	Unleaded Gasoline Regular	50 to 100	Gallons
10/1/1989	89-10-01	Mobil Pier	Unknown	Unknown	NA
9/30/1989	89-09-30	Kill Van Kull	Lube Oil	Small amount	Gallons
9/30/1989	89-09-30	Pier B East	Lube 450	5 to 10	Gallons
6/22/1989	89-06-22	Head of Pier 3	#6 Oil	15	Gallons
12/20/1988	88-12-20	Head of Coal Pier	#6 Oil	150	Gallons
11/4/1988	88-11-04	Pier A	Gasoline	~5	Gallons
10/17/1988	88-10-17	KVK between Pier A & Pier 1	Unknown	sheen	NA
8/10/1988	88-08-10	Pier 4	Unknown	<50	Gallons
7/29/1988	88-07-29	Pier 1 West	Gasoline	210 to 420	Gallons
6/22/1988	88-06-22	Pier 1 East	Fuel Oil	5 to 10	Gallons
5/1/1988	88-05-01	Pier 1 East	Unknown	500	Gallons
4/21/1988	88-04-21	Pier 1	Gasoline	20	Gallons
3/16/1988	88-03-16	Pier A	Gasoline	1	Gallons
3/16/1988	88-03-16	Pier B East	Lube Oil	Unknown	NA
11/24/1987	87-11-24	Pier 3 (Gordon Terminal Spill)	Unknown	Unknown	NA
10/15/1986	8610151501	Kill Van Kull, Pier 1 East Side	#6 Oil	20	Gallons
7/9/1986	860709010000	Kill Van Kull	#6 Oil	3000	Gallons
12/16/1985	851216010000	Pier #1, East Side	#6 Oil	400	Gallons

Table 2 Areas of Onshore Discharges at the West Side Facility

Date	NJDEP Case Number	Location	Source	Product	Quantity Released	Unit	Additional Information in Section 5.4 (Yes (Y)/ No (N))
9/15/2004	04-09-15-1047-20	Pump at Tank 1706	Pump for Tank 1706	Sodium Hydroxide	5	Gallons	N
8/29/2004	04-08-29-2110-41	Yard 6, Tank 6206	Tank 6206	2 Oil	54,432	Gallons	Y
8/12/2004	04-08-12-1536-46	Yard 6, Tank 6011 area, Oak St. between Pit 2 & Met Alley	Cargo Line, JP-4 Pipeline	2 Oil	30	Gallons	N
7/21/2004	04-07-21-1027-00	Yard 5, Tank 5809	Yard 5, Tank 5809	Gasoline	2,000	Gallons	Y
7/5/2004	04-07-05-1804-00	Yard #6, near Tank #6003	Pipeline	6-Oil	16,800	Gallons	Y
7/2/2004	04-07-02-1420-02	Tanks 3119 & 3130	Filter Housing for Tanks 3119 & 3120	Infineum T4012	860	Gallons	Y
3/29/2004	04-03-29-0828-11	Caustic Loading Rack Burma Road	Pipeline	Sodium Hydroxide	50,722	Gallons	Y
11/5/2003	03-11-05-1500-04	Hot oil pumps & ground directly behind hot oil pumps	Hot oil pump	Caloria HT-43	200	Gallons	Y
2/24/2003	03-02-24-1019-37	TK 5803	TK 5803	2 Oil	210	Gallons	Y
2/18/2003	03-02-18-1725-47	TK 6003	PRV	6 Oil	20,000	Gallons	Y
1/27/2003	03-01-27-1433-33	TK 6005	Steam Trap	6 Oil	84	Gallons	Y
1/14/2003	03-01-14-1318-23	ESS (by former PKP)	Unidentified source	Stormwater	Unknown	NA	N
6/26/2002	02-06-26-1427-25	Yard 3	TK 3834	6 Oil	<10	Gallons	N
2/1/2002	02-02-01-1708-04	Yard 1	TK 1022	6 Oil	2-5	Gallons	N
6/13/2001	01-06-13-0803-42*	Unknown	Tank	Oil Fuel #6	Unknown	NA	N
1/11/2001	01-01-11-2106-36	Walters Bridge	Walters Bridge, 6 oil transfer line	Hydrogen Sulfide Scavenger	<1	Gallons	N
7/6/2000	00-07-06-1315-16	Tank 1702	Tank 1702	Hot oil and Asphalt	Unknown	NA	N
2/26/1997	97-02-26-2025-37	Tank 5214	Tank #5214	MTBE & Naptha	19,194	Gallons	Y
12/28/1996	96-12-28	Tank #6007	Tank #6007 leak	MTBE	840	Gallons	Y
11/21/1996	96-11-21	Tank 1705	Tank 1705 pipeline flange	#6 Fuel Oil	126	Gallons	Y
8/26/1996	96-08-26	Asphalt Rack #5	Pump for Rack #5 surged	Asphalt	3 to 5	Gallons	N
8/6/1996	96-08-06	Asphalt Rack #1	Asphalt Rack #1	Asphalt	Unknown	NA	N
5/14/1996	96-05-14	Tank 1013	Tank 1013 overfill	Off spec oil	50	Gallons	Y
5/7/1996	96-05-07	Asphalt Rack #4	Asphalt Rack #4	Asphalt	100	Gallons	Y
5/2/1996	96-05-02	Asphalt Rack #5	Tank truck	Asphalt	125	Gallons	Y
5/1/1996	96-05-01	Tank 6206	Tank 6206	#6 Fuel Oil	630	Gallons	Y
3/10/1996	96-03-10	Tank 5163	Line leak by Tank 5163	Bulk Oil	Unknown	NA	N

*Uncertain spill location; spill not included on Figure 24.

Ta[illegible] [illegible]eas of Onshore Discharges at the West Side Facility

2/20/1996	96-02-20	Tank 5806	Leaking line near Tank 5806	MTBE mixture	100 to 150	Gallons	Y
10/25/1995	95-10-25-0419-56	Tank #1705	Tank #1705	#6 Fuel Oil	1,500	Gallons	Y
9/9/1995	95-09-09-1133-49*	Within IMTT Terminal	Gas Line	Natural Gas	Unknown	NA	N
7/26/1995	95-07-26	Asphalt Rack #5	Asphalt Rack #5	Asphalt	10 to 15	Gallons	N
7/3/1995	95-07-03	Tank 6205 south pump	Leak in pump	Unknown	~84	Gallons	Y
6/6/1995	95-06-06	Asphalt Rack #5	Asphalt Rack #5	Asphalt	10 to 20	Gallons	N
4/19/1995	95-04-19	Asphalt Rack #4	Asphalt Rack #5-handle failed to close during shut off	Asphalt	35 to 50	Gallons	N
4/18/1995	95-04-18	Asphalt Rack #5	Asphalt Rack #5	Asphalt	10 to 15	Gallons	N
1/14/1995	95-01-14*	MET Rack	MET Rack	#4 Oil	Unknown	NA	N
11/22/1994	94-11-22-1241-06	22nd Street	Tanker Trailer - Hassel Transport Truck	Paraflow 516	3	Gallons	N
10/4/1994	94-10-04	Asphalt Rack #1	Asphalt Rack #1	Asphalt	Unknown	NA	N
8/1/1994	94-08-01-0420-53	Tank #1124	Tank #1124	MDO (#2 Fuel Oil)	2,660	Gallons	Y
7/27/1994	94-07-27	Asphalt Rack #5	Asphalt Rack #5	Asphalt	30 to 40	Gallons	N
7/12/1994	94-07-12-1658*	Railcar	Rupture disc on top of car	70% Hydrogen Peroxide	5	Gallons	N
6/26/1994	94-06-26	Tank 1709	Tank 1709-gauging tube	MDO Oil	Unknown	NA	N
6/2/1994	94-06-02	Asphalt Rack #5	Asphalt Rack #5	Asphalt	Unknown	NA	Y
1/17/1994	94-01-17*	Unknown	Out of service valve gasket leak	#2 oil or Kero	Unknown	NA	N
12/16/1993	93-12-16	Asphalt Rack #1	Valve left open on rack	Asphalt	Unknown	NA	N
11/28/1993	93-11-28-2222-27	Tank #1706	Tank #1706	#6 Fuel Oil	Unknown	NA	N
11/18/1993	93-11-18-1117-10	Tank #5085	Tank #5085	Regular Unleaded Gasoline	100	Gallons	Y
10/28/1993	93-10-28	Burma Rd A.D.M. Rack	Overfilled truck	Asphalt	10	Gallons	N
8/20/1993	93-08-20	Tank #2125	Tank #2125 and associated truck loading pump	TINPM	12 to 20	Gallons	N
7/29/1993	93-07-29	Asphalt Rack #2	Asphalt Rack #2	Asphalt	20	Gallons	N
7/29/1993	93-07-29	Asphalt Rack #2	Asphalt Rack #2	Asphalt	10	Gallons	N
6/16/1993	93-06-16	Asphalt Rack #3	Asphalt Rack #3	Asphalt	5 to 10	Gallons	N
4/7/1993	93-04-07	Asphalt Rack #3	Asphalt Rack #3- broken chain	Asphalt	Unknown	NA	N
2/22/1993	93-02-22-0178	Tank #6203	Tank #6203	#6 Fuel Oil	8,000 to 10,000	Gallons	Y
12/10/1992	92-12-10	Asphalt Rack #1	Asphalt Rack #1	Asphalt	Unknown	NA	N

*Uncertain spill location; spill not included on Figure 24.

Table 2 ...eas of Onshore Discharges at the West Side Facility

9/22/1992	92-09-22	Tank #1701	Open bleeder valve on 1701 pump	Unknown	Unknown	NA	N
9/8/1992	92-09-08	Asphalt Rack #1	Asphalt truck spill	Asphalt	20 to 25	Gallons	N
8/4/1992	92-08-04	Asphalt Rack #1	Asphalt Rack #1	Asphalt	~25-30	Gallons	N
5/8/1992	92-05-08	Asphalt Rack #2	Asphalt Rack #2	Asphalt	Unknown	NA	N
5/6/1992	92-05-06	Asphalt Rack #2	Remaining product in hose from previous usage	Asphalt	3	Gallons	N
5/1/1992	92-05-01	Main Gate	Truck Spill	Asphalt	3 to 5	Gallons	N
4/13/1992	92-04-13	Asphalt Rack #3	Open valve	Asphalt	5 to 7	Gallons	N
3/12/1992	92-03-12	Tank #6005	Open bleeder valve	Unknown	Unknown	NA	N
2/12/1992	92-02-12	Asphalt Rack #1	Asphalt Rack #1	Asphalt	2	Gallons	N
2/12/1992	92-02-12	Asphalt Rack #2	Asphalt Rack #2	Asphalt	~10	Gallons	N
1/8/1992	92-01-08	Asphalt Rack #1	Open valve	Asphalt	8 to 10	Gallons	N
11/27/1991	91-11-27	Tank 3111	Steam coil failed	Lube Oil Additive	50	Gallons	Y
11/16/1991	91-11-16	Asphalt Rack #3	Asphalt Rack #3-shut off valve	Asphalt	7	Gallons	N
11/1/1991	91-11-01	Asphalt Rack #3	Loading spout	Asphalt	60	Gallons	Y
10/24/1991	91-10-24	Asphalt Rack # 1	Asphalt Rack #1	Asphalt	30	Gallons	N
10/9/1991	91-10-09	Alleyway east of Tank 6011	Fitting on line failed-MetLine	#6 Oil	2	Gallons	N
9/22/1991	91-09-22	Tank 1702	Hi-line flange gasket failure	#6 Oil	100	Gallons	Y
9/20/1991	91-09-20	East of Tank 6205	903 flange failure	Gasoline	10	Gallons	N
9/5/1991	91-09-05	Tank 5164	Tank 5164 water draw off-used wrong paste	Gasoline	30	Gallons	N
8/28/1991	91-08-28	Kero line for Tanks 1173 & 1174	Valve removed while line was still pressurized and contained product	Kero	100	Gallons	Y
8/28/1991	91-08-28	Main Gate	Truck Spill on Roadway	Asphalt	5 to 10	Gallons	N
8/21/1991	91-08-21	West of Tank 3923	Failure of Floyd line Yard 3	#6 Oil	5	Gallons	N
8/12/1991	91-08-12	Asphalt Rack #2	Asphalt Rack #2	Asphalt	42	Gallons	N
8/1/1991	91-08-01	Tank 1013	Tank 1013 overfill	#6 Fuel Oil	30	Gallons	N
6/13/1991	91-06-13	Tank 3815	Tank 3815 overfill rainwater	#6 Oil	10	Gallons	N
5/13/1991	91-05-13-0902-4*	Plant 2, Dike 1a	Filter head gasket	Nononal N	2	Gallons	N
5/8/1991	91-05-08	Tank 5186	Line failure by 5186	Gasoline	50	Gallons	Y
1/16/1991	91-01-16*	Tank 5205	903 line failure by 5205 area	Gasoline	5	Gallons	N

*Uncertain spill location; spill not included on Figure 24.

Tab . .reas of Onshore Discharges at the West Side Facility

12/26/1990	90-12-26-1557-00*	Yard	Pipe	Benzenetricarborylic Acid & Water Mixture	40	Gallons	N
12/26/1990	90-12-26	Tank 2094	Tank 2094 tank failure	TITM	30	Gallons	N
12/13/1990	90-12-13	Asphalt Rack #3	Open valve	Asphalt	25	Gallons	N
12/5/1990	90-12-05*	Railroad tracks	Truck spill while driving over tracks	Asphalt	30	Gallons	N
11/24/1990	90-11-24*	Coal Pier Pipeline	Pipeline	Unknown	5	Gallons	N
11/23/1990	90-11-23	Asphalt Rack #3	Asphalt truck overfilled	Asphalt	~10	Gallons	N
11/5/1990	90-11-05	Tank 1702	8" line rupture near Tank 1702	Unknown	10 to 20	Gallons	N
10/3/1990	90-10-03*	Asphalt Trailer	Water in trailer, causing asphalt to spill out	Asphalt	20	Gallons	N
8/9/1990	90-08-09	Asphalt Rack #3	Asphalt rack #3	Asphalt	10 to 15	Gallons	N
8/8/1990	90-08-08-0345-00	Tank 5070	Tank 5070 broken pump gauge.	Gasoline	200	Gallons	Y
8/7/1990	90-08-07	Truck	Truck spill on roadway near 3900 tanks & by Main Gate out scale	Asphalt	Unknown	NA	N
7/18/1990	90-07-18	Asphalt Rack #2	Asphalt Rack #2	Asphalt	15 to 20	Pails	Y
6/23/1990	90-06-23	Tank 1058	Compartment pump bleeder failure by Tk.1058	#2 Oil	25	Gallons	N
6/2/1990	90-06-02	Asphalt Rack #2	Asphalt Rack #2	Asphalt	30	Gallons	N
4/10/1990	90-04-10	Wemco Water Treatment	Hose blew on pump oil water separator failure.	Slop Oil	Sheen	NA	N
3/29/1990	90-03-29	Tank 1704	Tank 1704	#6 Fuel Oil	420	Gallons	Y
3/18/1990	90-03-18	Tank 5073	Bleeder broke off 5073 jet .pump	Gasoline	40	Gallons	N
2/23/1990	90-02-23	Asphalt Rack #2	Asphalt Rack #2	Asphalt	100	Gallons	Y
12/25/1989	89-12-25-0832-00	Yard 1	Tank 1701	#6 Fuel Oil	504,000	Gallons	Y
12/25/1989	89-12-25	Tank 6204 Eastside	Pipeline leak	Gasoline	150	Gallons	Y
12/15/1989	89-12-15	Tank 1701	Tank bottom leak	#6 Oil	1,050,000	Gallons	Y
11/17/1989	89-11-17	Asphalt Rack #3	Asphalt truck spill	Asphalt	300	Gallons	Y
10/31/1989	89-10-31-2000*	Shell Line at Pit 1	Shell Line	Unknown	10 to 420	Gallons	Y
10/28/1989	89-10-28-1232-00*	Yard 6	Pipeline, Yard 6	#6 Oil	250	Gallons	Y
9/16/1989	89-09-16	Asphalt Rack #2	Asphalt Rack #2	Asphalt	5 to 10	Gallons	N
9/5/1989	89-09-05	Tank 1703	Tank bottom leak	#6 Oil	1,000	Gallons	Y
8/22/1989	89-08-22	Tank 5161	Tank bottom leak	Gasoline	150	Gallons	Y
8/2/1989	89-08-02	Tank 3184	Steam coil leak	#6 Fuel Oil	60	Gallons	Y
8/2/1989	89-08-02	Tank 3816 Area	Unidentified source	Slop Oil	300	Gallons	Y
8/1/1989	89-08-01	Asphalt Rack #3	Asphalt truck overfilled	Asphalt	50 to 60	Gallons	Y

*Uncertain spill location; spill not included on Figure 24.

7/22/1989	89-07-22	Asphalt Rack #3	Asphalt Rack #3	Asphalt	50 to 60	Gallons	Y
11/12/1988	88-11-12	Asphalt Rack #2	Asphalt Rack #2	Asphalt	75	Gallons	Y
10/26/1988	88-10-26	Asphalt Rack #1	Asphalt trailer overfilled	Asphalt	150	Gallons	Y
10/21/1988	88-10-21	South Asphalt Rack #2	South Asphalt Rack #2	Asphalt	Unknown	NA	N
9/16/1988	88-09-16	Asphalt Rack #3	Asphalt Rack #3	Asphalt	30	Gallons	N
5/20/1988	88-05-20	South Asphalt Rack	Asphalt trailer	Asphalt	200	Gallons	Y
4/4/1988	88-04-04	South Asphalt Rack	Asphalt trailer	Asphalt	Unknown	NA	N
2/1/1988	88-02-01*	Railcar	Hose connection	Phenol	50	Gallons	Y
10/21/1987	87-10-21*	West side loading rack	Tanker truck	Cyclohexolamine	30	Gallons	N
8/6/1986	86-08-06-0500-00	Yard 6, Tank #6006	Tank #6006, Yard 6	Gasoline	37,800	Gallons	Y
7/9/1986	86-07-09-0400-00	Yard 2	Tanks #2138, #2139, #2140 & #2148	Unleaded gasoline blending stock	5,460	Gallons	Y

*Uncertain spill location; spill not included on Figure 24.

Table 6: Soil Stockpile Inventory for Yard 6

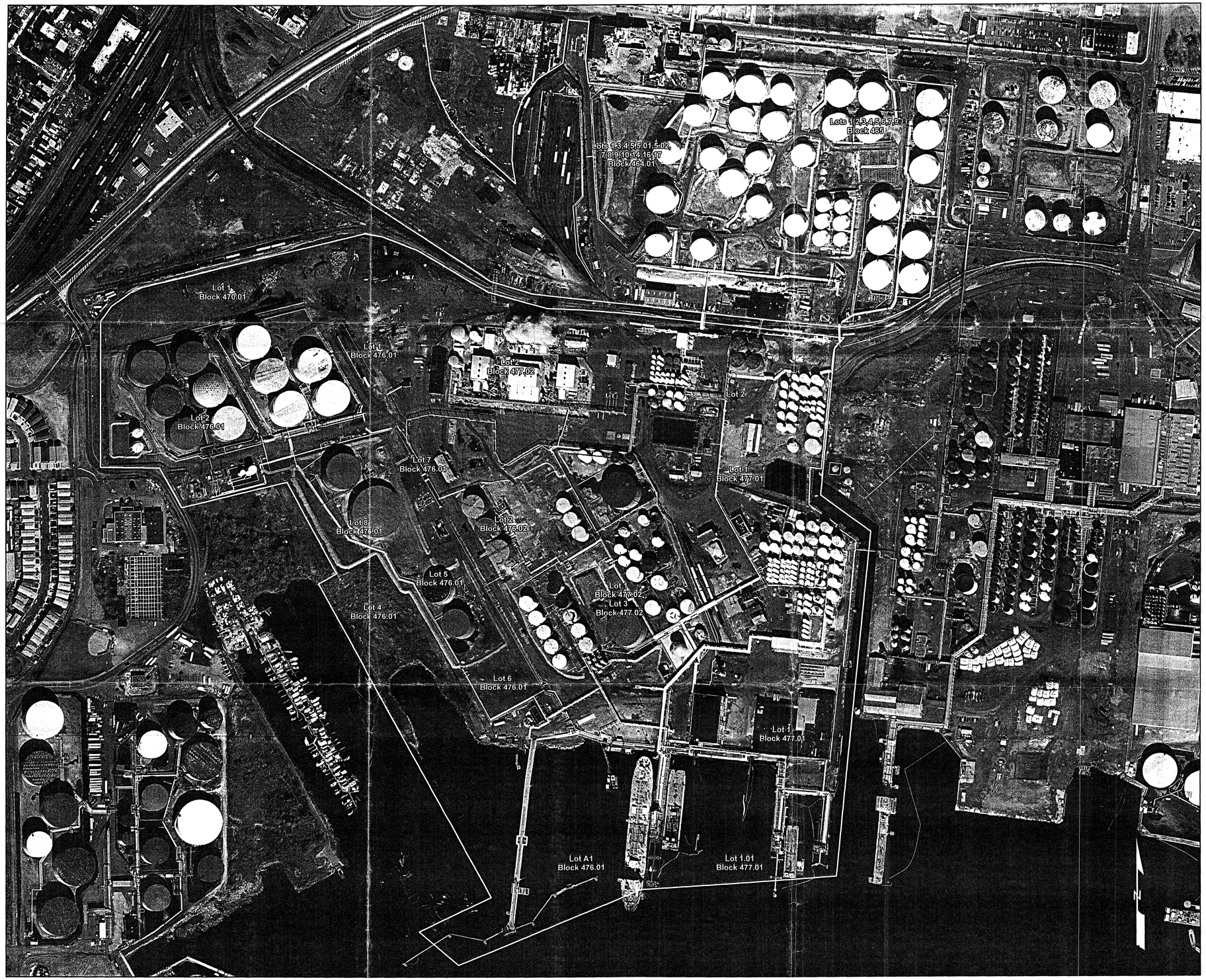
Stockpile Designation	Square Footage	Approximate Stockpile Height (feet)	Estimated Volume (cubic yards)	Comments pertaining to the consolidation of stockpiles
Old Tank Bottoms	330.0	2	24	
WEMCO	1776.0	5	329	
West Side Water Front	1430.8	6	318	
Tank 5076 Pile E	3904.5	6	868	
Tank 5809	930.3	7	241	Tank 5809 and Tank 5809 piles were combined.
Yard 3 Lift Station	942.5	4	140	Yard 3 Lift Station piles were combined.
Platty Kill Pond Area	2544.0	9.5	895	
Salt Water Pump House	260.0	3.5	34	Salt Water Pump House piles were combined with unlabeled pile located east of Tank 5076E pile
Tank 1701	866.3	7	225	
Oak Street - Perimeter Fence and Alleyway	404.3	3	45	Alleyway scrapings piles and 4 fence piles were combined.
CoGen Road, Tank 4516 and Electrical Shop	567.9	3	63	Pile includes CoGen Road pile, Tank 4516 pile and Electrical Bldg pile
Chem South Traffic	983.3	5	182	Chem South traffic
Tank 6008	169.0	2	13	
Unknown Source	516.8	5	96	
Pond Excavation	499.5	6	111	
Tank 5057	1442.0	9	481	
Catch Basins for Tanks 6004, 6005, 6006, 6010 and 6012	103.5	1	4	Catch basins
Conrail	540.0	5	100	
Tank 6003 - Old and Recent # 6 Spills	3060.0	7.5	850	Tank 6003 pile was combined with Old Tank 6003.
Burma Road Sewers	2150.0	9	717	
Yard 1 Sewers - Large	2512.5	10	931	
Yard 1 Sewers - Tail	1470.0	7	381	
Yard1 Sewers - Small	259.0	3	29	
Yard 1 Former Stockpile Scrapings (Used in Pond Closure)	180.0	2	13	
Tank 5077	915.0	6	203	
CoGen Plant, West Gate, Near CoGen, Compound Building and Universal Building	1128.0	5	209	CoGen Plant pile, West Gate pile, IMTT near CoGen pile, 4 Universal building piles and 1 Compound building pile were combined
Tank 5188	2211.0	9	737	
Tank 6206	2772.0	8	821	Tank 6206
Tank 5076 A	3850.0	10	1426	
Tank 5076 B	4995.5	10	1850	
Screened Pile A	3705.0	7	961	
Screened Pile C - Approximately 1/2 Removed	1690.5	8	501	
Screened Piles D&E - Pushed Together	4182.0	8.5	1317	
		Total	15112	

Table 7: Current Building Inventory for the West Side

Building Name/ID	Yard Number	Dimensions (width x length in feet)	Use	Occupied Yes/No	Average # of Occupants	Duration Occupied (Hrs/Day)
Electrical Building	1	20 x 35	Storage	No	0	0
Round House	1	52 x 116	Locomotive Storage	No	0	0
Asphalt MCC Building	1	12 x 15	Electrical Switch Gear	No	0	0
Caustic Building	1	12X15	Operator Control	Yes	1	1-2
Electrical Building	2	27 x 55	Electrical Switch Gear	No	0	0
Compound Building	2	120 x 200	Storage	No	0	0
P&S Building	2	338 x 270	Leased Warehouse	Yes	6-8	8-10
Boiler House	2	60 x 123	Steam Boilers	No	0	0
Hot Oil House	2	53 x 75	Hot Oil Boilers	No	0	0
Living Quarters	2	63 x 140	Living Quarters	Yes	30-35	24
West Side Yard 2 Building	2	10X25	Operator Break Room	Yes	1-2	1-2
Platty Kill Pond Compressor House	3	10X15	Compressor Building	No	0	0
Laborer's Building	3	68 x 42	Storage	No	0	0
Wemco Unit	3	30 x 20	Instrumentation	No	0	0
Universal Building	3	74 x 127	Leased Warehouse	No	0	0
MCC-3	4	23 x 28	Electrical Switch Gear	No	0	0
GE Warehouse	4	64 x 100	Storage	No	0	0
Yard 4 Booster Pump Building	4	15X20	Pump Building	No	0	0
Lead Injection Building	5	6X6	Lead Injection System Control House	No	0	0
MCC-1	5	18 x 24	Electrical Switch Gear	No	0	0
MCC-4	5	15 x 24	Electrical Switch Gear	No	0	0
Salt Water Pump House	6	46 x 78	Abandoned	No	0	0
Oak St. Substation	6	60 x 52	Electrical Switch Gear	No	0	0
Pipeline Building	6	8X12	Control Equipment	No	0	0
EWMI East Building	8	290 x 94	Leased Office Space and Storage	Yes	8-10	8-10
EWMI West Building	8	128 x 57	Storage	No	0	0
Westside Maintenance	10	60 x 186	Fabrication and Storage	Yes	12-14	12
Chem West Traffic	10	48 x 96	Logistics Office	Yes	8-10	20
Co-Gen Building GT 1 & 2 Building	10	75 X100	Electric Generation	No	0	

Table 7: Current Building Inventory for the West Side

Co-Gen Building Steam Turbine/Admin Building	10	125 X 180	Electric Generation Offices and I & C Maintenance Shop	Yes	9 Day time during week 3 weeknights and weekends	24 hours 7 days per week
Co-Gen Building GT3 Building	10	75 X100	Electric Generation	No	0	
Co-Gen Building SF 6 Building	10	40 X 70	Electric Transmission	No	0	
Co-Gen Building Pump House	10	40 X 40	Fire Protection and Pumping Water	No	0	
Co-Gen Building Welding Shop/Cooling Tower Chemical Building	10	30 X 30	Maintenance and Chemical Feed to Cooling Tower	No	0	0



Legend

IMTT Property Boundary

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0 125 250 500
Scale in Feet

FILE NAME	REV. NO.	REV. DESCRIPTION	DATE	DSN BY	CHD BY	APP'D BY
WestsideL&B.mxd						

BLUESTONE ENVIRONMENTAL SERVICES LLC
489 UNION AVENUE, SUITE C
BRIDGEWATER, NEW JERSEY 08807

PREPARED FOR: *IMTT - BAYONNE*
BAYONNE NEW JERSEY

FIGURE: **2**

SITE/DESCRIPTION: **West Side Lot & Block**

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	DRAWING NO.:	REVISION NO.:

Legend

- IMTT Property and Yard Boundaries
- CoGen
- Kenrich Petrochemicals
- Bayonne Durable
- Rona Pearl
- Universal Air Cargo
- White Chemical
- Current Building Locations

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0 125 250 500

Scale in Feet

FILE NAME	REV. NO.	REV. DESCRIPTION	DATE	DSN BY	CHD BY	APP'D BY
Westsidecurrentbuildings.mxd						

BLUESTONE ENVIRONMENTAL SERVICES LLC
489 UNION AVENUE, SUITE C
BRIDGEWATER, NEW JERSEY 08807

PREPARED FOR: *IMTT - BAYONNE*
BAYONNE NEW JERSEY

FIGURE: **3**

SITE DESCRIPTION: **West Side Current Building Locations**

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	DRAWING NO.:	REVISION NO.:
	KLW					

Legend

- IMTT Property Boundary
- Active Aboveground Storage Tank Locations
- Round House AST
- Storage Pad

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0 120 240 480
Scale in Feet

FILE NAME	REV. NO.	REV. DESCRIPTION	DATE	DSN BY	CH'D BY	APP'D BY
WestsideASTs.mxd						

BLUESTONE ENVIRONMENTAL SERVICES LLC
489 UNION AVENUE, SUITE C
BRIDGEWATER, NEW JERSEY 08807

PREPARED FOR: *IMTT - BAYONNE*
BAYONNE NEW JERSEY

FIGURE: **12**

SITE/DESCRIPTION
West Side
Aboveground Storage Tank Locations

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	DRAWING NO.:	REVISION NO.:

NJPDES PERMIT RENEWAL APPLICATION

DIRECT DISCHARGE TO SURFACE WATERS

PERMIT NUMBER : NJ0002089

PERMITTEE : IMTT-BX

IMTT-BX
250 EAST 22ND STREET
BAYONNE, NJ 07002

EXXON COMPANY, U.S.A.
BAYONNE LUBRICANTS PLANT
1 AVENUE J
BAYONNE, NJ 07002

PERMIT ISSUANCE DATE: APRIL 30, 1993
PERMIT EXPIRATION DATE: JULY 31, 1995

DDA000011

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5.4 Wastewater Treatment Systems
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6.0 Future Expansion

7.0 Lot and Block Numbers

Appendix A PERMIT APPLICATION FORMS

NJDEP FORM 1
USEPA FORM 2c
WQM-003

Appendix B September 1995 Quarterly Sampling Results

Appendix C Drawing F-0101 : Site Plot Plan

Figure 1 : USGS topographical map
Figure 2 : Wastewater Treatment Block Flow Diagram

1.0 INTRODUCTION

This permit application is being submitted by IMTT-BX for renewal and modification of NJPDES/DSW permit number NJ0002089. Effective June 1, 1993 IMTT-BX became the Permittee and Exxon Corporation the Co-Permittee for this permit. It is requested that the renewed permit list IMTT-BX as the sole permittee and include on an interim basis Exxon Corporation as a Co-Permittee, pending resolution of related permitting issues. This permit is for the direct discharge to Surface Water of treated stormwater runoff and industrial wastewater to the Upper New York Bay and expires on July 31, 1995.

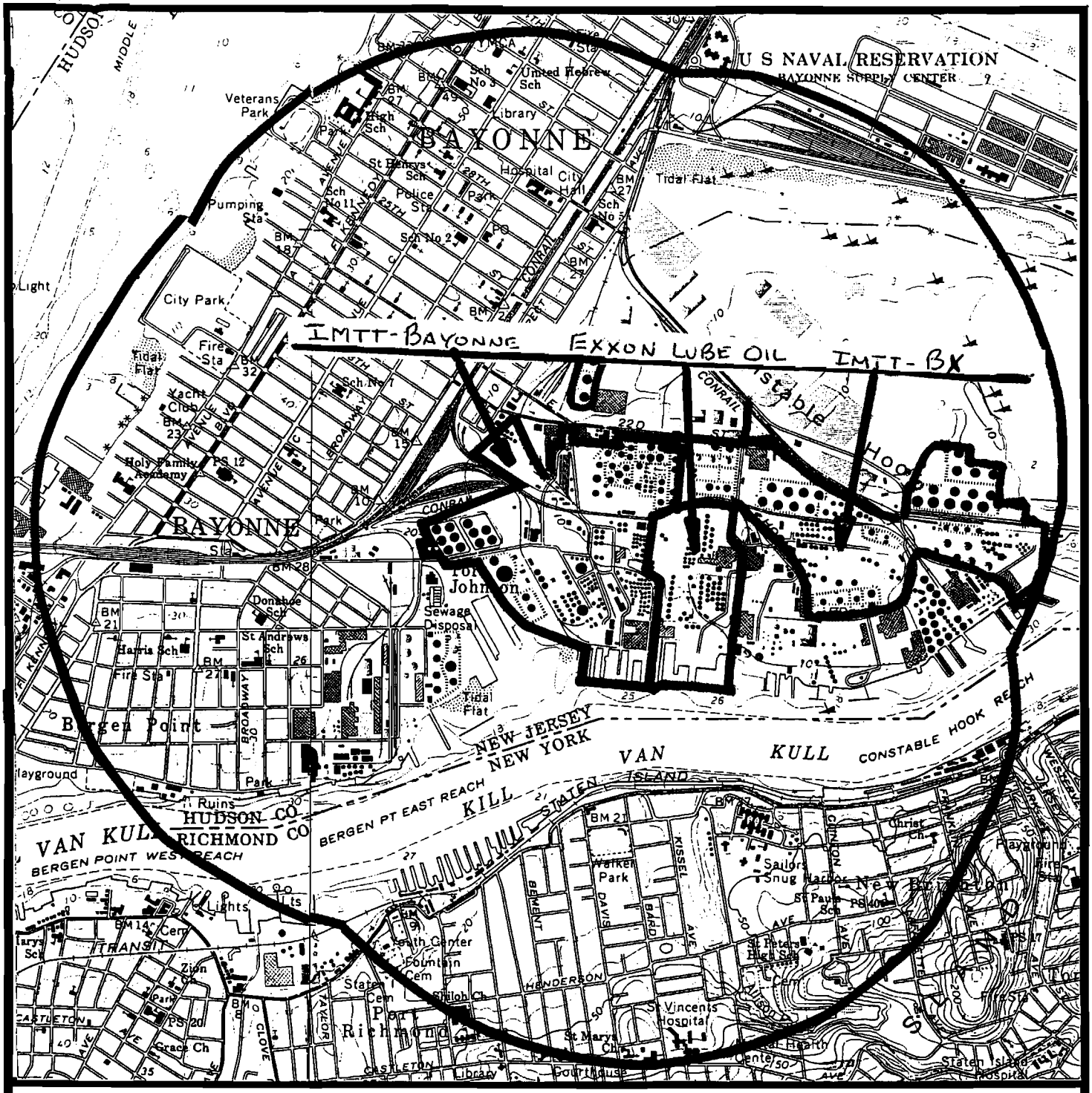
Modification of this permit is being requested in order to integrate over time within this permit the treatment of effluent currently discharged from the adjoining IMTT-Bayonne/Bayonne Industries facility (Area C on the enclosed Site Plot Plan) under the terms of NJPDES permit number NJ0001341. IMTT would than request to terminate permit number NJ0001341 and combine all activities under permit number NJ0002089. The details of combining the two permits are discussed in section 6.0.

2.0 Change of Ownership

On April 1, 1993 IMTT-BX purchased from Exxon Corporation the marketing terminal and storage facilities designated as Area A on Drawing F-0101, (Appendix C). IMTT-BX subsequently leased the terminal to an associated operating company, IMTT-Bayonne. Exxon Corporation has retained ownership of the Lube Oil Facility, Area B. EXXON will also continue Site Remediation activities in Areas A and B under provisions of the ACO dated November 29, 1991 designated as 006848-15979; Book 4455. Wastewater and stormwater runoff from Areas A and B are currently processed at the wastewater treatment plant herein referenced as the IMTT-BX treatment plant and now operated under the supervision of IMTT-BX personnel.

3.0 Location

The IMTT-BX/Exxon facilities are located on approximately 250 acres in the Constable Hook section of the City of Bayonne, Hudson County, New Jersey. The facilities are bounded by 22nd Street and Hook Road on the north, Upper New York Bay on the east, neighboring industry and the Kill Van Kull waterway on the south, and neighboring industry on the west. Figure 1 shows details of the location.



MN GN
12° 213 MILS
0°32' 9 MILS

UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

FIGURE ONE

Site Location Plan / 1-Mile Vicinity Map

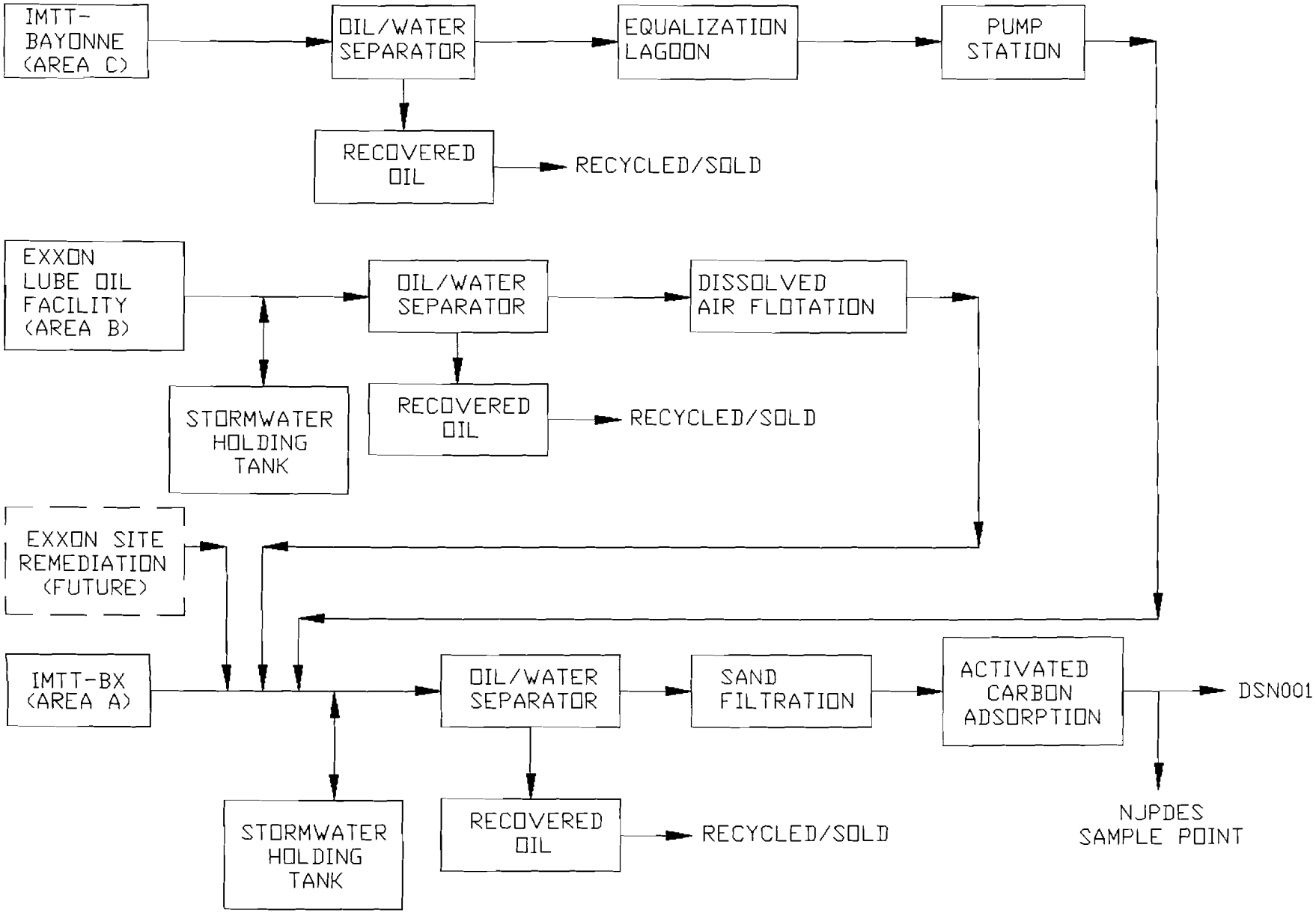
Bayonne, Hudson County, NJ

USGS Jersey City, NJ-NY Quadrangle
7.5 Minute Series (Topographic)

Date: 1967, photorev. 1981

QUADRANGLE LOCATION

Figure: 1
Scale: 1"=2000'



WASTEWATER TREATMENT
BLOCK FLOW DIAGRAM

FIGURE #2

F-0287

Mapped, edited, and published by the Geological Survey
Revised in cooperation with New York Department of Transportation

Control by USGS, NOS/NOAA, USCE, New Jersey Geodetic Survey, and City of New York Board of Estimate and Apportionment

Planimetry by photogrammetric methods and from NOS charts T-5111, T-5277, T-5332, T-5450, T-5453, T-5454, T-5460, T-5461, T-5466, T-5468, T-5469, and T-5470

Topography by photogrammetric methods from aerial photographs taken

(ARTHUR KILL) 6165 II SW

MN GN 12° 213 MILS 0°37'

1000

4.0 Current Operations

4.1 IMTT-Bayonne

Exxon has continuously conducted petro-chemical operations at this location since 1877. From 1877 until 1972 when the manufacturing operations began being dismantled, the primary activity was petroleum refining. Exxon continues to operate the Lube Oil Facility and IMTT-Bayonne has assumed operations of a liquid products storage facility on the remainder of the property. No manufacturing is done on the IMTT-Bayonne property. As noted, the ACO driven EXXON Site Remediation team also conducts activities throughout Areas A and B.

Based on the type of operations and products stored, the potential service area served by the IMTT-BX treatment plant can be divided into 10 operational areas. As shown on Drawing F-0101 these include: Yards 1,2,3,4,5,6,8,9,and the Packards yards all operated by IMTT-Bayonne, and the EXXON Lube Oil Facility.

Products are shipped in and out of the terminal facilities by truck (packaged products), tank trucks, railroad cars, barges, pipeline and tankers. Products stored include petroleum products (miscellaneous napthas, aviation gasoline, aliphatic and aromatic solvents, distillate fuels, intermediate and heavy fuels oils, and lube and process oils, waxes, asphalts, and petroleum additive products) and generally low risk chemicals such as alcohols, plasticizers and aircraft deicers.

4.2 EXXON Corporation

EXXON Corporation is the parent of Exxon Company, U.S.A. Exxon Company, U.S.A. operates a wax and lubricating oil blending, packaging and distribution facility adjacent to the property owned IMTT-BX. Lube oil base stocks and additives are received by ship, rail, or highway and finished goods are processed by blending. In addition, base stocks are also sold as is without any further processing. Product is sold in either bulk or package form.

Exxon's primary SIC Code is 5171 (wholesale distribution of petroleum products) and with a secondary code of 2992 (blending of lubricating oil).

5.0 Wastewater Characterization

5.1 Sources

Wastewater processed at the IMTT-BX treatment plant consists of equipment wash water, tank roof draw-off, decanted tank water, wastewater from tank bottoms, stormwater runoff, condensate blowdown, laboratory washwater (Exxon), groundwater infiltration and tank integrity test water.

In the near future, groundwater will be recovered and treated during some interim remedial measures (IRM) taken by Exxon site remediation under an existing ACO. Groundwater recovered from one IRM, Tank 1066 IRM, will be pretreated via gravity separation and air stripping before discharge to the IMTT-BX sewer system. This IRM will be constructed in a phased approach with an estimated maximum discharge rate of 25 gpm of pretreated groundwater to the IMTT-BX sewer system. Exxon is responsible for the permitting, construction and operation of this pretreatment system. This pretreatment system currently being designed, and therefore detailed information is not available.

Wastewater from the Exxon Lube Oil Facility (Area B) is also pre-treated in a separate treatment plant operated by Exxon personnel prior to its discharge to the IMTT-BX treatment plant for secondary treatment (see section 5.4.1 for the plant description).

5.2 Flow Rate

Stormwater runoff from the entire 250 acre eastside facility (Area A and B) is currently processed in the IMTT-BX treatment plant, and therefore the flow rate varies dramatically based on the amount of precipitation. During intense rainstorms the discharge rate is limited by the hydraulic capacity of the activated carbon adsorption system (2100 gpm). Stormwater runoff in excess of the hydraulic capacity is stored in
Tank 8553.

Average and maximum flow rates for 1994 are as shown below:

Average flow rate: 0.5420 mgd
Averaged Maximum flow rate: 1.5000 mgd

The westside treatment plant (now separately permitted) likewise receives all stormwater from the 200 acre westside facility (Area C) and throughput is limited by the 700 gpm activated carbon units. Operation under this permit is on a continuance basis.

5.3 Contaminants

Because the range of products stored at the facility varies, the contaminants in the wastewater are also variable. For the most part, products stored at the facilities are petroleum derived fuels products and nominally benign organic chemicals. Caustic is also stored.

Prior to discharging to the sewer, an evaluation is made as to the ability of activated carbon to treat the wastewater. Highly polar, highly soluble, low molecular weight straight chain hydrocarbons, alcohols, and ketones are examples of compounds that are not well adsorbed on carbon and therefore their dispatch to the wastewater treatment system is restricted. A high quality effluent has been consistently maintained in the present system by careful control of the wastewaters fed to the treatment plant and by frequent in-process sampling. Sampling of the lead bed activated carbon effluent is used to determine carbon change out frequency. The carbon is changed when breakthrough is observed in the lead beds, thereby maintaining a buffer between sampling and final discharge to the State's waters.

Groundwater pretreated in the Exxon site remediation pretreatment system as described in Section 5.1 may contain targeted organic compounds, 20 % of which will be chlorinated compounds and heavy metals (arsenic, lead). It is estimated air stripping will remove 99.5-99.9% of the organic compounds. The effluent lead concentration released to the IMTT-BX sewer system will be less than 7.5 ppb. Discharge from the pretreatment system will be interrupted at any time when the acceptance of pretreated groundwater would result in an exceedance of permit effluent limits.

5.4 Wastewater Treatment Systems

Treated process wastewater is discharged through DSN-001 to the Upper New York Bay near it's confluence with the Kill Van Kull, (the existing permit incorrectly lists the Kill Van Kull as the receiving body of water). Wastewater from the Exxon Lube Oil facility is pretreated in a separate pre-treatment plant, (operated by Exxon personnel),

and then dispatched to the IMTT-BX treatment plant for final processing.

5.4.1. Exxon Lube Oil Facility Treatment Plant

At the Exxon U.S.A. treatment plant, influent wastewater is transported by screw pump to an aboveground API separator. The API separator effluent flows through a dissolved air flotation unit to further remove contaminants. Excess rainwater is pumped to storage tanks. All effluent is than pumped to the IMTT-BX facility for further treatment.

The EXXON treatment plant is cleaned once per year and the sludge is stored, tested, and removed in accordance with NJDEP regulations. Oil skimmed from the API separator is recovered, treated, and recycled.

5.4.2 IMTT-BX Treatment Plant

The IMTT-BX Treatment Plant consists of an oil-water separator, sand filtration, and activated carbon adsorption units. The maximum hydraulic capacity of the oil-water separator is 6000 gpm. After oil-water separation, the wastewater is processed in one of four deep bed sand filtration units. The four units operate in a parallel mode, for a maximum hydraulic capacity of 4000 gpm. Following sand filtration, the wastewater is processed in three sets of two 20,000 pound activated carbon units. Each set has a hydraulic capacity of 700 gpm for a maximum design hydraulic capacity through the system of 2100 gpm.

One of two 10000 gpm pumps transfer water from the oil-water separator to a stormwater holding tank, (TK-8553), when the flow rate to the system exceeds 2100 gpm. After the high flow condition has passed, the stormwater can be returned via a gravity sewer system for treatment.

6.0 Future Expansion

Following the purchase of the Exxon property in April 1993, IMTT assumed operational responsibilities for two separately permitted wastewater treatment plants (IMTT-BX operating under NJPDES permit No. NJ0002089 and IMTT-Bayonne operating under NJPDES permit No. NJ0001341). These two facilities discharge through two separately monitored outfalls. The nature of the wastewater and treatment unit operations are similar and therefore it is not inappropriate to propose

combining the two systems.

The IMTT-Bayonne collection area, (Area C), is approximately 200 acres. All stormwater from the IMTT-Bayonne facility is treated in a manual system which must be manned at all times during operation. During prolonged rainy periods, this plant becomes capacity limited, creating a flooding problem in the plant yard.

The IMTT-BX treatment plant is fully automated and operates 24 hours a day. After the two systems are combined as is being proposed here, the facilities can be managed together, thereby reducing the potential for flooding.

Figure 2 is a block flow diagram which presents the relationship between the three existing wastewater treatment plants and EXXON's proposed new Site Remediation facility. It is proposed that the westside IMTT-Bayonne oil-water separator and equalization lagoon will be maintained in operation. The IAF unit has been marginally effective at best and will be taken out of service. The westside activated carbon units will be relocated and integrated with the IMTT-BX (eastside) treatment plant.

Additional debottlenecking upgrades to the IMTT-BX treatment plant will be also instituted in order to increase the total treatment capacity to 2800 gpm. Stormwater runoff from IMTT-Bayonne's westside operations, (Area C), will be pumped at a controlled rate through the existing sewers and pipelines to the IMTT-BX treatment plant for final treatment.

7.0 Lot and Block Numbers

Lot and block numbers for the IMTT-BX, Exxon Lube Oil and Bayonne Industries (IMTT-Bayonne westside) sites are listed below.

IMTT-BX, Exxon Lube Oil (Area A and B):

TAX LOT	BLOCK
419	1,3,4
427	3
465	1,2,3,4
466	1,2,3,4
478	1
480	1
477.01	1
465	5,6,7,8

Bayonne Industries: IMTT-Bayonne westside (Area C):

381	A

APPENDIX A

PERMIT APPLICATION FORMS

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Water Quality

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT APPLICATION

— Refer to Instructions on Page 6 and Provide All Applicable Information. Please Print or Type. —

1. APPLICANT(S)/OPERATOR

Name IMTT - BX

Permanent Legal Address 321 ST. CHARLES AVE

City or Town NEW ORLEANS State LA Zip Code 70130

Federal Tax I.D.# _____ Telephone (504) 586-8300

2. PROPERTY OWNER(S)

Name IMTT - BX

Permanent Legal Address 321 ST. CHARLES AVE

City or Town NEW ORLEANS State LA Zip Code 70130

Federal Tax I.D.# _____ Telephone ( ) _____

3. LOCATION OF ACTIVITY

Name of Facility/Site IMTT - BX

Street Address/Location 250 EAST 22ND STREET

Lot No. SEE TEXT Block No. SEE TEXT E.P.A. I.D.# _____

City or Town BAYONNE State N.J. Zip Code 07002

Municipality BAYONNE County HUDSON

Latitude 40 ° 4 ' 7 " N Longitude 74 ° 6 ' 0 " W

4. CONTACT PERSON (This Person Should be Familiar with the Facility/Site)

Name: GEORGE BRESS Telephone (201) 437-2200

Mailing Address (if different than 3 above) _____

City or Town _____ State _____ Zip Code _____

5. ENGINEER/SURVEYOR/GEOLOGIST/SOIL SCIENTIST (If Applicable)

Name _____ N.J. License No. _____

Name of Firm, if employee _____

Street Address _____

City or Town _____ State _____ Zip Code _____

Telephone ( ) _____

6. OTHER REQUIRED PERMITS

If any of the following applications have been submitted for this site/facility, complete the applicable information.

Permit Type	Application Status (check one) Pending	Application Status (check one) Approved	Application Date (or Application No.)
• Treatment Works Approval (Municipal - Industrial)			
• Exemption From Sewer Ban	N/A	N/A	N/A
• Water Quality Management Plan Amendment	N/A	N/A	N/A
• Potable water supply well	N/A	N/A	N/A
• Local Permits (specify type)	N/A	N/A	N/A

7. PUBLIC NOTICE CERTIFICATION (For General Permit Authorizations Only)

I have included the appropriate certification for my authorization request under a general permit. ____Yes ____No

8. PROJECT DESCRIPTION (Brief Description of Discharge to be Permitted)

SEE TEXT.

9. PERMITTING STATUS OF THIS FACILITY/SITE

[1. Check appropriate box for each discharge activity (left column). 2. If the facility has an existing permit, list permit number(s), if known (center column). 3. Check requested permit action (right columns).]

DISCHARGE ACTIVITY (CATEGORY) CODES	PERMIT No.	REQUESTED PERMIT ACTION			
		NEW	RENEW.	MOD.	TERM.
Discharge to Surface Water (DSW)					
☐ A. Sanitary Surface Water Discharge					
☐ A8. Discharge to Regional Outfall Authority					
☒ B. Industrial/Commercial Surface Water Disch.	NJ 000 2089		X		
☐ B4B. General Petroleum Product Cleanup Permit					
☒ C. Thermal Surface Water Discharge	NJ 000 2089		X		
☐ CG. General Permit Non-Contact Cooling Water					
☐ CSO. Combined Sewer Overflow					
☐ DAC. Discharge Allocation Certificate - Municipal					
☐ IDA. Discharge Allocation Certificate - Industrial					
☒ RF. Stormwater Runoff	NJ 000 2089		X		
Discharge to Ground Water (DGW)					
☐ F. Landfill - Industrial/Commercial Waste					
☐ G. Spray Irrigation - Industrial					
☐ H. Overland Flow - Industrial					
☐ I. Infiltration/Percolation Lagoon - Industrial					
☐ J. Surface Impoundment - Industrial					
☐ K. Underground Injection (UIC) - Industrial					
☐ K1. Auto Dealers Carwash					
☐ O. Landfill - Municipal/Sanitary					
☐ P. Spray Irrigation - Sanitary					
☐ Q. Overland Flow - Sanitary					
☐ R. Infiltration/Percolation Lagoon - Sanitary					
☐ S. Surface Impoundment - Sanitary					
☐ T. Underground Injection (UIC) - Sanitary					
☐ U. Dredge Spoils					
Sludge, Residuals, and Indirect Dischargers					
☐ D. Land Application of Sludge and Septage					
☐ E. Land Application of Industrial Waste Residuals					
☐ EG. General Food Processing Byproducts					
☐ V. Sludge Processing/Distribution Facility					
☐ Z. Residuals Transfer Facilities (Sludge)					
☐ 3. Residuals Infiltration/Percolation Lagoon - Domestic					
☐ 3I. Residuals Infiltration/Percolation Lagoon - Industrial					
☐ 4. Residuals Surface Impoundment - Domestic					
☐ 4I. Residuals Surface Impoundment - Industrial					
☐ L. Significant Indirect User (SIU)					
Other/Miscellaneous					
☐ X. Confidentiality Request					
☐ 8. Other/Miscellaneous					

10. Water Supply / Discharge Information

Source of Water Supply: City Water / Kill Van Kull

Name of Receiving Stream (for Discharge to Surface Water): UPPER NEW YORK BAY

Name of Watershed Basin (for Discharge to Surface Water):

Name of Geological Formation (for Discharge to Ground Water): N/A

Name of Receiving POTW (for SIU): N/A

11. Standard Industrial Classification Code(s):

SIC Code #	Products or Service Provided
4226	STORAGE OF PETROLEUM PRODUCTS & CHEMICALS.

12. Enforcement Actions at this Facility

Enforcement Action	Date of Action	Status

13. Waste Storage at this Facility

Storage Site(s)	Ultimate Disposal Site(s)
See Next	See Next

14. APPLICANT'S AGENT (If Desired)

I, _____,
(Applicant/Operator's Name)
authorize to act as my agent/representative in all matters pertaining to my application the following person:

Name _____ Position _____

Address _____ City _____

State _____ Zip Code _____ Telephone ( ) _____

_____ _____
Signature of Agent and Date Signature of Applicant/Operator and Date

15. PROPERTY OWNER'S CERTIFICATION

I hereby certify that I, IMTT-BX
(Property Owner's Name)
own the property identified in this application. As owner, I grant permission for the activity to be permitted under this application and authorize the DEP to conduct on-site inspections, if necessary.

In addition, I certify: (check "yes" or "no")	YES	NO
a. The activity will take place in an easement?	___	X
b. Part of the entire project (e.g. pipeline, disposal area, wells, etc.) is or will be located within property owned by the State of New Jersey?	___	X
c. Part of the entire project (e.g. pipeline, disposal area, wells, etc.) is or will be located within property owned by a municipality or county? (If "yes", contact the Green Acres Program at (609) 588-3461 for an applicability determination.)	___	X

Robert C Weaver 2/28/95
Signature of Owner and Date

Robert C. Weaver

Vice President - Technical Director
Print or Type: Name and Position

Note: If "yes" to statements a, b, or c, the applicant must provide evidence of obtaining permission from the other property owners (include copy with this application).

14. APPLICANT'S AGENT (If Desired)

I, _____,
(Applicant/Operator's Name)
authorize to act as my agent/representative in all matters pertaining to my application the following person:

Name_____ Position _____

Address_____ City_____

State _____ Zip Code _____ Telephone ( ) _____

_____ _____
Signature of Agent and Date Signature of Applicant/Operator and Date

15. PROPERTY OWNER'S CERTIFICATION

I hereby certify that IMTT-BX
(Property Owner's Name)
owns the property upon which the proposed activity will occur. As owner, I grant permission for the activity identified in this application and authorize the DEP to conduct on-site inspections, if necessary.

In addition, I certify: (check "yes" or "no")	**YES**	**NO**
a. The activity will take place in an easement?	____	X
b. Part of the entire project (e.g. pipeline, disposal area, wells, etc.) is or will be located within property owned by the State of New Jersey?	____	X
c. Part of the entire project (e.g. pipeline, disposal area, wells, etc.) is or will be located within property owned by a municipality or county? (If "yes", contact the Green Acres Program at (609) 588-3461 for an applicability determination.)	____	X

_____
Signature of Owner and Date

_____

_____
Print or Type: Name and Position

Note: If "yes" to statements a, b, or c, the applicant must provide evidence of obtaining permission from the other property owners (include copy with this application).

16. CERTIFICATION BY APPLICANT/OPERATOR

I certify, under penalty of law, that the information provided in this application and the attachments is true, accurate, and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

Dennis Burbarine for R.R. FISETTE 1/31/95
Signature of Applicant/Operator and Date

R.R. FISETTE
TERMINAL MANAGER
Print or Type: Name and Position

INSTRUCTIONS FOR COMPLETING FORM NJPDES - 1

This form should accompany all NJPDES permit applications.

1. **General Information** - (items #1 - 8) Complete the requested applicant and facility information.
2. **Permitting Status of this Facility** (item# 9) - Please list all NJPDES permits issued to the subject facility (in addition to the permit being applied for at this time).
3. **Water Supply/Discharge Information** (item# 10) - Provide the source of water supply. If the discharge is to surface water, provide the name of the receiving stream and watershed basin, and indicate if it is conveyed by a storm sewer. If the discharge is to ground water, provide the name of the Geological Formation. If the discharge is to a Publicly Owned Treatment Works (POTW), provide the name of the POTW.
4. **Standard Industrial Classification Code(s)** (item # 11) - List in order of priority, all Standard Industrial Classification (SIC) Codes which best reflect the principal products or services provided by the facility. The codes are available in the "Standard Industrial Classification Manual - 1987". List additional codes, if necessary, for secondary products or services.
5. **Enforcement Actions at this Facility** (item# 12) - If applicable, identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, civil penalties, notice of violations, or criminal actions concerning pollution issued against the facility during the last five (5) years. Attach additional sheets if necessary.
6. **Waste Storage at this Facility** (item# 13) - If applicable, list all locations involved in the storage of solid or liquid waste at the facility for which the NJPDES application is being made, and the ultimate disposal site(s) of solid or liquid wastes generated by the facility being permitted. Attach additional sheets if necessary.
7. **Signatures** (items 14, 15, and 16) Where indicated under items #14 and #16, the signature of the applicant/operator shall be the operating entity who alone or along with other persons has primary management and operational decision making authority over the facility covered under this application. This authority includes authorizing capital expenditures and/or hiring personnel. Item #15 should be completed by the owner of property.

Should you need assistance in completing the application, please call the appropriate phone number listed below:

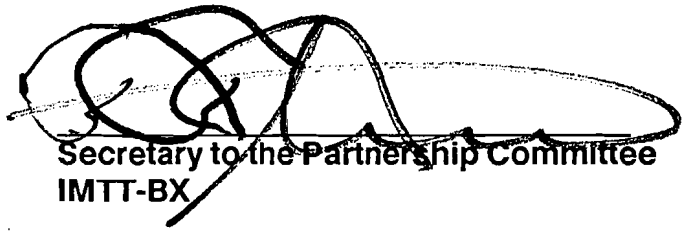
- **Discharges to Surface Water (Industrial)** (609) 292-4860
- **Discharges to Surface Water (Municipal)** (609) 633-3869
- **Discharges to Ground Water** (609) 292-0407
- **Sludge and Residuals Issues** (609) 633-3823
- **Discharges to a Publicly Owned Treatment Works** (609) 633-3823

CERTIFICATE

I, the undersigned, DO HEREBY CERTIFY, that set forth below is a complete, true and correct copy of certain resolutions adopted by unanimous consent of the Partnership Committee of IMTT-BX, a Delaware partnership, which resolutions were duly adopted by said Partnership Committee on March 2, 1995, that I am the Secretary and keeper of the minutes and records of said partnership; and that said resolutions have not been rescinded or modified.

> RESOLVED, that IMTT-BX execute a New Jersey Pollution Discharge Elimination System Permit Application, and submit same to the State of New Jersey, Department of Environmental Protection, Division of Water Quality, all with regard to discharge of water to upper New York Bay from property owned by IMTT-BX in the City of Bayonne, County of Hudson, State of New Jersey, bearing street address 250 East 22nd Street, Bayonne, New Jersey 07002.
>
> FURTHER RESOLVED, that Robert C. Weaver, Technical Director, be and he is hereby authorized and directed to execute and deliver, for and on behalf of IMTT-BX the above described application in such form as he may approve.
>
> BE IT FURTHER RESOLVED, that the said officer be and is hereby authorized to take such other and further steps as may be necessary to comply with the foregoing resolution.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 2nd day of March, 1995.



Secretary to the Partnership Committee
IMTT-BX

C:\WP51\CORPORAT\IMTT-BX.CER
03/02/95 4:44pm

Please print or type in the unshaded areas only.

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE 1. DEG.	B. LATITUDE 2. MIN.	B. LATITUDE 3. SEC.	C. LONGITUDE 1. DEG.	C. LONGITUDE 2. MIN.	C. LONGITUDE 3. SEC.	D. RECEIVING WATER (name)
DSN001	40	39	16	74	5	14	KILL VAN KULL

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined *(e.g., for certain mining activities)*, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW a. OPERATION (list)	2. OPERATION(S) CONTRIBUTING FLOW b. AVERAGE FLOW (include units)	3. TREATMENT a. DESCRIPTION	3. TREATMENT b. LIST CODES FROM TABLE 2C-1	
001	EQUIPMENT WASH WATER	SEE TEXT	OIL/WATER SEPARATION	XX	
	TANK BOTTOMS WASH WATER	"	SAND FILTRATION	1V	
	SLOP TANK DRAW OFF	"	CARBON ADSORPTION	2A	
	STORMWATER RUNOFF	"			
	GROUND WATER RECOVERY TRMT. EFFLUENT	"			
SEE TEXT	EXXON LUBE OIL ADDITIVES FACILITY	"	OIL/WATER SEPARATOR	XX	
			DISSOLVED AIR FLOTATION	1-H	

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ YES *(complete the following table)* ☒ NO *(go to Section III)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in mgd)*		b. TOTAL VOLUME *(specify with units)*		c. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
	~SEE TEXT~							

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES *(complete Item III-B)* ☒ NO *(to to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

☐ YES *(complete Item III-C)* ☒ NO *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS *(list outfall numbers)*
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES *(complete the following table)* ☐ NO *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

...form runoff, leaks, or spills, are any of the discharges described in Items II-A or B ...

☐ YES (complete the following table) ☒ NO (go to Section III)

1. OUTFALL NUMBER (list)	2. OPERATION(s) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW				5. DURATION (in days)
		a. DAYS PER WEEK (specify average)	b. MONTHS PER YEAR (specify average)	a. FLOW RATE (in mgd)		b. TOTAL VOLUME (specify with units)		
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
	^SEE TEXT^							

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES (complete Item III-B) ☒ NO (to to Section IV)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?

☐ YES (complete Item III-C) ☒ NO (go to Section IV)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS (list outfall numbers)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (specify)	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (complete the following table) ☒ NO (go to Item IV-B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affec your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual c planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☒ YES *(list all such pollutants below)* ☐ NO *(go to Item VI-B)*

IMTT DOES NOT MANUFACTURE ANY PRODUCTS. THE CHEMICALS LISTED BELOW MAY BE A CONSTITUENT IN PRODUCTS STORED AT THE FACILITY:

BENZENE, TOLUENE, DI-N-BUTYL-PHTHALATE, DI-N-OCTYL-PHTHALATE, ISOPHORONE ETHYLBENZENE, NAPHTHALENE

EXXON REPORTS THE FOLLOWING MAY BE FOUND AT SMALL CONCENTRATIONS IN LUBRICATING OIL OR PRODUCTS CURRENTLY STORED AT THE PLANT.:

COPPER, ZINC, PHENOLS, TOLUENE, NAPHTHALENE

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☒ YES *(identify the test(s) and describe their purposes below)* ☐ NO *(go to Section VIII)*

THE EXISTING NJPDES PERMIT REQUIRES QUARTERLY ACUTE TOXICITY BIO. ASSAY TESTING. THE TEST SPECIES IS MYSID SHRIMP AND THE TEST DURATION IS 96 HOURS.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
1) IEA, INC.	628 ROUTE 10 WHIPPANY, N.J. 07981	(201) 428-8181	VOLATILES - BN/BNA - OIL/GREASE - TSS
2) CHYUN ASSOCIATES, INC	267 WALL STREET PRINCETON, N.J. 08540	609-924-5151	TOC
3) IT CORPORATION	165 FIELDCREST AVE. EDISON, NJ. 08837	908-225-2000	BIO. ASSAY TEST

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (type or print)	B. PHONE NO. (area code & no.)
R.R. FISETTE / TERMINAL MANAGER	(201) 437-2200
C. SIGNATURE	**D. DATE SIGNED**
Dennis Basbanes for R.R. FISETTE	1/31/95

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL 001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS (specify if blank) b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO. ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	SEE APPENDIX B											
b. Chemical Oxygen Demand *(COD)*	SEE APPENDIX B											
c. Total Organic Carbon *(TOC)*	—	—	—	—	6.05 PPM	10.52 KG/D	6	—	—	—	—	—
d. Total Suspended Solids *(TSS)*	—	—	—	—	4.4 PPM	—	6	—	—	—	—	—
e. Ammonia *(as N)*	SEE APPENDIX B											
f. Flow	VALUE 1.50 MGD		VALUE —		VALUE 0.5420 MGD		6	—	—	VALUE —		—
g. Temperature *(winter)*	VALUE —		VALUE —		VALUE —			°C		VALUE —		—
h. Temperature *(summer)*	VALUE 31		VALUE —		VALUE 29		3	°C		VALUE		
i. pH	MINIMUM 6.52	MAXIMUM 7.15	MINIMUM —	MAXIMUM —			6	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any poll which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirem

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite *(as N)*		X												

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease	X		2.38 ppm	←	—	—	1.73 ppm	—	6	—	—	—	—	
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total														
(3) Radium, Total														
(4) Radium 226, Total														
k. Sulfate (as SO_4) (14808-79-8)														
l. Sulfide (as S)														
m. Sulfite (as SO_3) (14265-45-3)														
n. Surfactants														
o. Aluminum, Total (7429-90-5)														
p. Barium, Total (7440-39-3)														
q. Boron, Total (7440-42-8)														
r. Cobalt, Total (7440-48-4)														
s. Iron, Total (7439-89-6)														
t. Magnesium, Total (7439-95-4)														
u. Molybdenum, Total (7439-98-7)														
v. Manganese, Total (7439-96-5)														
w. Tin, Total (7440-31-5)														
x. Titanium, Total (7440-32-6)		↓												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
	001

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in colum 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonproces wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant yo believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the resul of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2, *dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge* concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optiona	
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE	b.
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS
METALS, CYANIDE, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-0)			X											
2M. Arsenic, Total (7440-38-2)														
3M. Beryllium, Total, 7440-41-7)														
4M. Cadmium, Total (7440-43-9)														
5M. Chromium, Total (7440-47-3)														
6M. Copper, Total (7440-50-8)														
7M. Lead, Total (7439-92-1)														
8M. Mercury, Total (7439-97-6)														
9M. Nickel, Total (7440-02-0)														
10M. Selenium, Total (7782-49-2)														
11M. Silver, Total (7440-22-4)														
12M. Thellium, Total (7440-28-0)														
13M. Zinc, Total (7440-66-6)														
14M. Cyanide, Total (57-12-5)														
15M. Phenols, Total			↓											
DIOXIN														
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS										

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)	
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE	b.
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS
GC/MS FRACTION – VOLATILE COMPOUNDS														
1V. Acrolein (107-02-8)			X											
2V. Acrylonitrile (107-13-1)														
3V. Benzene (71-43-2)														
4V. Bis (Chloromethyl) Ether (542-88-1)														
5V. Bromoform (75-25-2)														
6V. Carbon Tetrachloride (56-23-5)														
7V. Chlorobenzene (108-90-7)														
8V. Chlorodibromomethane (124-48-1)														
9V. Chloroethane (75-00-3)														
10V. 2-Chloroethylvinyl Ether (110-75-8)														
11V. Chloroform (67-66-3)														
12V. Dichlorobromomethane (75-27-4)														
13V. Dichlorodifluoromethane (75-71-8)														
14V. 1,1-Dichloroethane (75-34-3)														
15V. 1,2-Dichloroethane (107-06-2)														
16V. 1,1-Dichloroethylene (75-35-4)														
17V. 1,2-Dichloropropane (78-87-5)														
18V. 1,3-Dichloropropylene (542-75-6)														
19V. Ethylbenzene (100-41-4)														
20V. Methyl Bromide (74-83-9)														

EPA I.D. NUMBER (copy from Item 1 of Form 1) | OUTFALL NUMBER 001

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. N A
GC/MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)															
24V. Tetrachloroethylene (127-18-4)															
25V. Toluene (108-88-3)															
26V. 1,2-Trans-Dichloroethylene (156-60-5)															
27V. 1,1,1-Trichloroethane (71-55-6)															
28V. 1,1,2-Trichloroethane (79-00-5)															
29V. Trichloroethylene (79-01-6)															
30V. Trichlorofluoromethane (75-69-4)															
31V. Vinyl Chloride (75-01-4)															
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)															
3A. 2,4-Dimethylphenol (105-67-9)															
4A. 4,6-Dinitro-O-Cresol (534-52-1)															
5A. 2,4-Dinitrophenol (51-28-5)															
6A. 2-Nitrophenol (88-75-5)															
7A. 4-Nitrophenol (100-02-7)															
8A. P-Chloro-M-Cresol (59-50-7)															
9A. Pentachlorophenol (87-86-5)															
10A. Phenol (108-95-2)															
11A. 2,4,6-Trichlorophenol															

N-C

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b.
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)															
3B. Anthracene (120-12-7)															
4B. Benzidine (92-87-5)															
5B. Benzo *(a)* Anthracene (56-55-3)															
6B. Benzo *(a)* Pyrene (50-32-8)															
7B. 3,4-Benzo-fluoranthene (205-99-2)															
8B. Benzo *(ghi)* Perylene (191-24-2)															
9B. Benzo *(k)* Fluoranthene (207-08-9)															
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)															
11B. Bis *(2-Chloro-ethyl)* Ether (111-44-4)															
12B. Bis *(2-Chloroiso-propyl)* Ether (102-60-1)															
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)															
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)															
15B. Butyl Benzyl Phthalate (85-68-7)															
16B. 2-Chloro-naphthalene (91-58-7)															
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)															
18B. Chrysene (218-01-9)															
19B. Dibenzo *(a,h)* Anthracene (53-70-3)															
20B. 1,2-Dichloro-benzene (95-50-1)															
21B. 1,3-Dichloro-benzene (541-73-1)															

CONTINUE ON P.

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzidine (91-94-1)															
24B. Diethyl Phthalate (84-66-2)															
25B. Dimethyl Phthalate (131-11-3)															
26B. Di-N-Butyl Phthalate (84-74-2)															
27B. 2,4-Dinitrotoluene (121-14-2)															
28B. 2,6-Dinitrotoluene (606-20-2)															
29B. Di-N-Octyl Phthalate (117-84-0)															
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)															
31B. Fluoranthene (206-44-0)															
32B. Fluorene (86-73-7)															
33B. Hexachlorobenzene (118-74-1)															
34B. Hexachlorobutadiene (87-68-3)															
35B. Hexachlorocyclopentadiene (77-47-4)															
36B. Hexachloroethane (67-72-1)															
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)															
38B. Isophorone (78-59-1)															
39B. Naphthalene (91-20-3)															
40B. Nitrobenzene (98-95-3)															
41B. N-Nitrosodimethylamine (62-75-9)															
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

CONTINUE ON P

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b.
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			↓												
45B. Pyrene (129-00-0)			↓												
46B. 1,2,4-Trichlorobenzene (120-82-1)			↓												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			↓												
3P. β-BHC (319-85-7)			↓												
4P. γ-BHC (58-89-9)			↓												
5P. δ-BHC (319-86-8)			↓												
6P. Chlordane (57-74-9)			↓												
7P. 4,4'-DDT (50-29-3)			↓												
8P. 4,4'-DDE (72-55-9)			↓												
9P. 4,4'-DDD (72-54-8)			↓												
10P. Dieldrin (60-57-1)			↓												
11P. α-Endosulfan (115-29-7)			↓												
12P. β-Endosulfan (115-29-7)			↓												
13P. Endosulfan Sulfate (1031-07-8)			↓												
14P. Endrin (72-20-8)			↓												
15P. Endrin Aldehyde (7421-93-4)			↓												
16P. Heptachlor (76-44-8)			↓												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optiona	
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS
GC/MS FRACTION – PESTICIDES *(continued)*														
17P. Heptachlor Epoxide (1024-57-3)			X											
18P. PCB-1242 (53469-21-9)														
19P. PCB-1254 (11097-69-1)														
20P. PCB-1221 (11104-28-2)														
21P. PCB-1232 (11141-16-5)														
22P. PCB-1248 (12672-29-6)														
23P. PCB-1260 (11096-82-5)														
24P. PCB-1016 (12674-11-2)														
25P. Toxaphene (8001-35-2)														

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY (DEPE)
ENVIRONMENTAL REGULATION

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES)
(SUPPLEMENT TO THE STANDARD APPLICATION FORM CP-1)

▪ STATEMENTS OF CONSENT ▪

APPLICANT/OWNER ——→ IMTT - BX
(From page 1 of CP-1 Form)

LOCATION OF WORK SITE ——→ 250 EAST 22ND ST.

NAME OF PROJECT/FACILITY ——→ IMTT - BX

TYPE OF PERMIT APPLICATION ——→ DSW
(DSW, DGW, TWA, SIU, etc.)

NJPDES Permit # (if applicable) ▸ NJ0002089

A-1 CONSENT BY GOVERNING BODY **

(Consent by the municipality in which the project is located)

As an authorized representative of the governing body, I hereby certify that the City of Bayonne
(Name of Municipality or Authority)
consents to the submission of the above listed application to the DEPE for approval. I further certify that the project as proposed conforms with the requirements of all municipal ordinances.

Signed* Leonard P. Kiczek Date 3/3/95

Name and Title Leonard P. Kiczek, Mayor
(Print or Type)

* Cite authorization to sign for the Governing Body

Resolution # 95-03-01-043 Date 3/1/95

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Governing Body's full resolution, consenting to the project, must be submitted with the application.

** *NOTE:*

1. Complete for all NJPDES applications.
2. For most TWA applications this section may be omitted if a sewerage entity (for example, sewerage authority, utilities authority, municipal utilities authority, joint meeting, etc.) has responsibility for regulating the construction and operation of wastewater treatment and conveyance facilities within the municipality. In such cases, the governing body consent requirement may be satisfied by completing Section A-2. TWAs for industrial/commercial facilities discharging pursuant to NJPDES/DSW or DGW permits must complete section A-1.

A-2 CONSENT BY SEWERAGE ENTITY **

As an authorized representative of this agency, I hereby certify that the _____
(Name of Agency)
consents to the submission of the above listed application to the DEPE for approval. I further certify that the project as proposed conforms with the requirements of this agency.

N/A

Signed* _____ Date _____

Name and Title _____
(Print or Type)

* Cite authorization to sign for the Agency

Resolution # _____ Date _____

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Agency's full resolution, consenting to the project, must be submitted with the application.

** *NOTE:*
For TWA and NJPDES applications, this section must be completed when a sewerage entity (for example, sewerage authority, utilities authority, municipal utilities authority, joint meeting, etc.) has responsibility for regulating the construction and operation of wastewater treatment and conveyance facilities within the municipality.

A-3 CONSENT BY OWNER OF WASTEWATER TREATMENT FACILITY **
(For NJPDES/SIU and Pretreatment TWA Applications only)

As an authorized representative of this agency, I hereby certify that the _____
(Name of Agency)
consents to the submission of the above listed application to the DEPE for approval. I further certify that the project conforms with the requirements of this agency and the agency agrees to accept wastewater from the project for treatment.

Signed* _____ Date _____

Name and Title _____
(Print or Type)

* Cite authorization to sign for the Agency

Resolution # _____ Date _____

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Agency's full resolution, consenting to the project, must be submitted with the application.

** *NOTE:*
For NJPDES/SIU applications, this section must be completed when the owner of the receiving wastewater treatment plant is different than the entity listed under A-2.

iMTT-BX

A PARTNERSHIP

Executive Office, 321 St. Charles Avenue, New Orleans, La. 70130 (U.S.A.)
Phone: (504) 586-8000, Fax: (504) 525-6733, Telex: 58-4191 or 582-1267

March 15, 1995

Ms. Angela Agabiti
Permit Coordination Officer III
New Jersey Department of Environmental Protection
Division of Water Quality
401 East State Street
CN 029
Trenton, New Jersey 08625-0029

RE: Renewal of NJPDES Permit Number NJ0026069

Dear Ms. Agabiti:

Form WQM-003, Section A-2 is enclosed and has been completed in accordance with your instruction this morning. Mr. Ken J. Rakowski, P.E., Acting, Director of Engineering for the City of Bayonne was contacted concerning this matter. Mr. Rakowski indicated that a local Sewerage Entity does not exist and that the Mayor of Bayonne is responsible for the operation of the collection system. Therefore, endorsement by the Mayor in Section A-2 is sufficient. This is consistent with the procedure in Section A-2.

Please call myself or Mr. Rakowski at (201) 858-6060 should you have any questions concerning this matter.

Sincerely yours,

George M. Bresse

George M. Bresse

cc: Dr. R.C.Weaver
Mr. R.R.Pisette
Mr. K.J.Rakowski

Per5.ltr

Bayonne Office: 200 East 22nd Street, P.O. Box 87, Bayonne, N.J. 07002 (U.S.A.)
Phone: (201) 437-2200, Main Office Fax: (201) 339-4057, Executive Fax: (201) 339-4704

2793

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY (DEPE)
ENVIRONMENTAL REGULATION

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES)
(SUPPLEMENT TO THE STANDARD APPLICATION FORM CP-1)

▪ STATEMENTS OF CONSENT ▪

APPLICANT/OWNER → IMTT - BX
(From page 1 of CP-1 Form)

LOCATION OF WORK SITE → 250 EAST 22ND ST.

NAME OF PROJECT/FACILITY → IMTT - BX

TYPE OF PERMIT APPLICATION → DSW
(DSW, DGW, TWA, SIU, etc.)

NJPDES Permit # (if applicable) → NJ0002089

A-1 CONSENT BY GOVERNING BODY **

(Consent by the municipality in which the project is located)

As an authorized representative of the governing body, I hereby certify that the _____
(Name of Municipality or Authority)
consents to the submission of the above listed application to the DEPE for approval. I further certify that the project as proposed conforms with the requirements of all municipal ordinances.

Signed* _____ Date _____

Name and Title _____
(Print or Type)

* Cite authorization to sign for the Governing Body

Resolution # _____ Date _____

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Governing Body's full resolution, consenting to the project, must be submitted with the application.

** *NOTE:*

1. Complete for all NJPDES applications.
2. For most TWA applications this section may be omitted if a sewerage entity (for example, sewerage authority, utilities authority, municipal utilities authority, joint meeting, etc.) has responsibility for regulating the construction and operation of wastewater treatment and conveyance facilities within the municipality. In such cases, the governing body consent requirement may be satisfied by completing Section A-2. TWAs for industrial/commercial facilities discharging pursuant to NJPDES/DSW or DGW permits must complete section A-1.

A-2 CONSENT BY SEWERAGE ENTITY **

As an authorized representative of this agency, I hereby certify that the _____
(Name of Agency)
consents to the submission of the above listed application to the DEPE for approval. I further certify that the project as proposed conforms with the requirements of this agency.

Signed* _____ Date _____

Name and Title _____
(Print or Type)

* Cite authorization to sign for the Agency

Resolution # _____ Date _____

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Agency's full resolution, consenting to the project, must be submitted with the application.

** *NOTE:*
For TWA and NJPDES applications, this section must be completed when a sewerage entity (for example, sewerage authority, utilities authority, municipal utilities authority, joint meeting, etc.) has responsibility for regulating the construction and operation of wastewater treatment and conveyance facilities within the municipality.

A-3 CONSENT BY OWNER OF WASTEWATER TREATMENT FACILITY **
(For NJPDES/SIU and Pretreatment TWA Applications only)

As an authorized representative of this agency, I hereby certify that the _____
(Name of Agency)
consents to the submission of the above listed application to the DEPE for approval. I further certify that the project conforms with the requirements of this agency and the agency agrees to accept wastewater from the project for treatment.

Signed* _____ Date _____

Name and Title _____
(Print or Type)

* Cite authorization to sign for the Agency

Resolution # _____ Date _____

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Agency's full resolution, consenting to the project, must be submitted with the application.

** *NOTE:*
For NJPDES/SIU applications, this section must be completed when the owner of the receiving wastewater treatment plant is different than the entity listed under A-2.

B. CERTIFICATION BY OWNER OF WASTEWATER CONVEYANCE SYSTEM**

I (we) hereby certify that to the best of my (our) knowledge the wastewater conveyance system, into which the project proposed under this application will connect, has adequate capacity in accordance with N.J.A.C. 7:14A-1.9 ("Adequate Conveyance capacity"). Furthermore, I (we) am (are) not aware of inadequate conveyance capacity conditions in any portion of the downstream facilities necessary to convey the wastewater from this project to the treatment plant.

Name of Municipality or Authority _____

Signed* _____ Date _____

Name and Title _____
(Print or Type)

* Cite authorization to sign for the Governing Body
Resolution # _____ Date _____

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Governing Body's full resolution consenting to the project must be submitted with the application.

** For TWA applications, this section must be completed by the owner/operator of the wastewater conveyance system into which the project named herein will directly connect.

C. CERTIFICATION BY OWNER OF WASTEWATER TREATMENT FACILITY

*(For TWA applications that include a sewer connection/extension)

I (we) hereby certify that the committed flow** to the

_____
(Name of Wastewater Treatment Plant)

does not exceed the presently permitted design capacity. I (we) also certify that with the addition of the flow proposed by this application, the permitted design capacity will not be exceeded. I (we) further certify that the treatment plant is currently complying with its NJPDES permit requirements and, based upon my (our) assessment of all information pertinent to this permit request, will continue to do so with the additional flow from this project.

Accepted for Treatment By _____
(Name of Treating Authority)

Signed 1 _____ Date _____

Name and Title _____
(Print or Type)

1 Cite authorization to sign for the Governing Body
Resolution # _____ Date _____

Submit the resolution with the application. If no such resolution granting authority to sign exists, the Governing Body's full resolution consenting to the project must be submitted with the application.

* For TWA applications, this section must be completed by the owner of the wastewater treatment facility receiving the wastewater identified in this application.

** For the purposes of this certification, committed flow means the sum of the 1) actual metered flow, 2) flow from DEPE approved TWA applications (not yet operational), and 3) flow from locally approved projects that do not require DEPE approval.

ADDITIONAL INFORMATION
(For TWA Applications)

1. Approvals, permits, service contracts or other reservations of flow capacity issued or agreed to by any participating municipality or sewerage agency do not constitute the required approval of the DEPE.

2. For computation of actual flow at the receiving wastewater treatment plant, the average flow processed by the facility for the four (4) month period immediately proceeding the submission of the application shall be used. Pursuant to the NJPDES Regulations (N.J.A.C. 7:14A), no application shall be submitted to the DEPE if the wastewater treatment facility is not meeting its discharge permit requirements.

LACK OF CONSENT *

1. The affected sewage authority or municipality must consent to the application or submit comments to the Department within 60 days of the applicant's request for consent. Prior to the expiration of the 60-day period to respond to a request for a written statement of consent, the municipality or sewage authority may request a 30-day extension for review of a request for consent.

2. Any document issued by a sewerage authority or a municipality which is tentative, preliminary, or conditional approval shall not be considered a statement of consent.

3. When the affected sewerage authority or municipality does not consent to a project, it shall state all reasons for rejection or disapproval in a resolution and send a certified copy of the resolution to the Department.

4. When the affected sewage authority or municipality expressly denies a request for a written statement of consent for a project, the permit application may be determined by the Department to be incomplete for processing; or in the alternative, the Department may review the reasons for denial. Any such reasons shall be considered by the Department in determining whether to issue a draft permit in accordance with N.J.A.C. 7:14A-7.6, or a Treatment Works Approval or sewer connection approval in accordance with N.J.A.C. 7:14A-12.

5. When the affected municipality or sewage authority does not issue a written statement of consent in accordance with (1) above, or a denial in accordance with (3) above, the Department, upon receipt of proof that the applicant has delivered to the affected agency a written request for a written statement of consent, shall review the reasons therefor, if known on the basis of reasonably reliable information. Any such reasons shall be considered by the Department in determining whether to issue a draft permit in accordance with N.J.A.C. 7:14A-7.6, or a Treatment Works Approval or sewer connection approval in accordance with N.J.A.C. 7:14A-12. The Department may, in its discretion, deem the application to be incomplete pending the expiration of the time period set forth in (1) above.

* This section has been excerpted from the NJPDES regulations for guidance purposes only. Please refer to N.J.A.C. 7:14A-2.1(k) for the complete requirements concerning statements of consent.

NOTICE: FALSE STATEMENTS, REPRESENTATIONS, OR CERTIFICATIONS IN ANY APPLICATION, RECORD, OR DOCUMENT ARE SUBJECT TO FINES AND PENALTIES PURSUANT TO THE WATER POLLUTION CONTROL ACT (N.J.S.A. 58:10A-10F 2 AND 3)

Appendix B: Quarterly Analytical Results

Results of the September 1994 quarterly sampling event are enclosed. The TOC concentration in the effluent is low, indicating a low organic concentration. Therefore this would indicate that the BOD and COD concentrations will also be low. Based on the TOC results, IMTT is requesting relief for the BOD and COD data submission requirement. NJDEPE has verbally concurred with this point of view. The long term averages for the previous 6 months of sampling are tabulated on Form 2C.

QUALIFIERS

U - Indicates that the compound was analyzed for but not detected.

J - This flag indicates an estimated value. This flag is used (1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL or PQL but greater than zero, and (3) when the retention time data indicate the presence of a compound that meets the Pesticide/Aroclor identification criteria, and the result is less than the CRQL or PQL but greater than zero.

B - This flag is used when the analyte is found in the blanks as well as the sample. It indicates possible sample contamination and warns the user to use caution when applying the results of this analyte.

E - Exceeds calibration curve

DL - Dilution Run

RE - Rerun

RX - Re-extract

CLIENT : IMTT - Bayonne

MATRIX: Water

JOB No.: 43772

000005

VOLATILE ORGANIC ANALYSIS RESULTS

Units: ug/l

Quantitation Factor (QF)	1.00	1.00	1.00			Method Practical Quantitation Limits (PQL)*
Method Blank I.D.	>FJ646	>FJ646	>FJ646			
Lab I.D.	941012B	43772002	43772004			
Client I.D	METHOD BLANK	DSN001GRAB	INTAKEGRAB			
Acrolein	U	U	U			50.0
Acrylonitrile	U	U	U			50.0
Benzene	U	U	U			5.0
Bromodichloromethane	U	U	U			5.0
Bromomethane	U	U	U			10.0
Bromoform	U	U	U			5.0
Carbon Tetrachloride	U	U	U			5.0
Chlorobenzene	U	U	U			5.0
Chloroethane	U	U	U			10.0
Chloroform	U	U	U			5.0
2-Chloroethylvinylether	U	U	U			5.0
Dibromochloromethane	U	U	U			5.0
m-Dichlorobenzene	U	U	U			5.0
o-Dichlorobenzene	U	U	U			5.0
p-Dichlorobenzene	U	U	U			5.0
1,1-Dichloroethane	U	U	U			5.0
1,2-Dichloroethane	U	U	U			5.0
1,1-Dichloroethene	U	U	U			5.0
Trans-1,2-Dichloroethene	U	U	U			5.0
1,2-Dichloropropane	U	U	U			5.0
cis-1,3-Dichloropropene	U	U	U			5.0
Ethylbenzene	U	U	U			5.0
Methylene Chloride	U	U	U			5.0
Tetrachloroethene	U	U	U			5.0
Toluene	U	U	U			5.0
Trichloroethene	U	U	U			5.0
Trichlorofluoromethane	U	U	U			5.0
Trans-1,3-Dichloropropene	U	U	U			5.0
1,1,1-Trichloroethane	U	U	U			5.0
1,1,2,2-Tetrachloroethane	U	U	U			5.0
1,1,2-Trichloroethane	U	U	U			5.0
Vinyl Chloride	U	U	U			10.0
Chloromethane	U	U	U			10.0
Dichlorodifluoromethane	U	U	U			5.0

* Sample PQL (Practical Quantitation Limit)= Method PQL X QF

Job No.: 43772

Client : IMTT - BAYONNE

Matrix: WATER

Semivolatile Compounds
UG/L

Dilution Factor (DF)	1.00	1.00			Practical Quantitation Limits (PQL) with no dilution
Method Blank I.D.	>GI869	>GI869			
Lab I.D.	2298SVB	43772001			
Client I.D.	SBLK	DSN001COMP			
Compound					
Acenaphthylene	U	U			10
Acenaphthene	U	U			10
Anthracene	U	U			10
Benzo(k)Fluoranthene	U	U			10
Benzo(a)pyrene	U	U			10
Bis(2-chloroethyl)ether	U	U			10
Bis(2-Chloroethoxy)methane	U	U			10
Bis(2-chloroisopropyl)ether	U	U			10
Butylbenzylphthalate	U	U			10
Chrysene	U	U			10
Diethyl Phthalate	U	U			10
1,2-Diphenyl hydrazine	U	U			10
Fluoranthene	U	U			10
Fluorene	U	U			10
Hexachlorocyclopentadiene	U	U			10
Hexachloroethane	U	U			10
Indeno(1,2,3-cd)pyrene	U	U			10
Isophorone	U	U			10
N-Nitroso-di-n-Propylamine	U	U			10
N-Nitrosodiphenylamine (1)	U	U			10
N-Nitrosodimethylamine	U	U			10
Nitrobenzene	U	U			10
Phenanthrene	U	U			10
Pyrene	U	U			10
Benzo(g,h,i)perylene	U	U			10
Benzo(a)anthracene	U	U			10
1,2-Dichlorobenzene	U	U			10
1,2,4-Trichlorobenzene	U	U			10
Dibenz(a,h)anthracene	U	U			10
1,3-Dichlorobenzene	U	U			10
1,4-Dichlorobenzene	U	U			10
2-Chloronapthalene	U	U			10
2-Chlorophenol	U	U			10
2-Nitrophenol	U	U			10
Di-N-Octyl phthalate	U	U			10
2,4-Dichlorophenol	U	U			10
2,4-Dimethylphenol	U	U			10
2,4-Dinitrotoluene	U	U			10
2,4-Dinitrophenol	U	U			50

Dilution Factor (DF)	1.00	1.00			Practical Quantitation Limits (PQL) with no dilution
Method Blank	>GI869	>GI869			
Lab I.D.	2298SVB	43772001			
Client I.D.	SBLK	DSN001COMP			
Compound					
2,4,6-Trichlorophenol	U	U			10
2,6-Dinitrotoluene	U	U			10
3,3'-Dichlorobenzidine	U	U			20
4-Bromophenyl phenyl ether	U	U			10
4-Chlorophenyl phenyl ether	U	U			10
4-Nitrophenol	U	U			50
4,6-Dinitro-o-cresol	U	U			50
Phenol	U	U			10
Naphthalene	U	U			10
Pentachlorophenol	U	U			50
Bis(2-ethylhexyl)phthalate	3J	5JB			10
Di-N-Butylphthalate	U	U			10
Benzidine	U	U			80
Hexachlorobenzene	U	U			10
Hexachlorobutadiene	U	U			10
4-Chloro-3-methylphenol	U	U			10
Benzo(b)fluoranthene	U	U			10

* Sample PQL = Method PQL X DF

Job No: 43772

Matrix: WATER

Client: IMTT - Bayonne

METALS DATA SUMMARY
ug/L

LAB ID CLIENT ID Analyte	001 DSN001COMP				MDL
Antimony	<60.0				60.0
Arsenic	<10.0				10.0
Beryllium	<5.00				5.00
Cadmium	<5.00				5.00
Chromium	<10.0				10.0
Copper	<25.0				25.0
Lead	<3.00				3.00
Mercury	<0.200				0.200
Nickel	<40.0				40.0
Selenium	<100				5.00
Silver	<10.0				10.0
Thallium	<100				10.0
Zinc	<20.0				20.0

MDL - Method Detection Limit

CLIENT: IMTT-BAYONNE

JOB NO: 20940-43772 WATER

OIL & GREASE

mg/l

LAB I.D.	CLIENT I.D.	RESULTS
BLANK		<1.00
BLANK SPIKE		82.6 % RECOVERY
43772002	DSN001GRAB	2.34
43772004	INTAKEGRAB	<1.12

Client: IMTT-BAYONNE

Job No: 20940-43772 WATER

Inorganic Data Summary
mg/l

Lab I.D.	43772001	43772003			MDL
Client I.D.	DSN001 COMP	INTAKE COMP			
Analyte					
Cyanide	<0.025	NR			0.025
Phenols	<0.005	NR			0.005
TOC	5	NR			1
TSS	2.00	1.31			1.00

MDL - Method Detection Limit

NR - Not Requested

APPENDIX C

SITE PLOT PLAN

DRAWING F-0101

Original to Enforcement

RECEIVED
2 JAN 8 1987
DEPT. ENVIRON. PROTECTION
Division Water Resources
WQM - Administration

EXXON COMPANY, U.S.A.
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MARKETING DEPARTMENT
SPECIALTY PRODUCTS
BAYONNE PLANT

D D ESCH
MANAGER

1-8-87

December 29, 1986

Mr. John Gaston, Administrator
Water Quality Management
New Jersey Department of
Environmental Protection
CN 029
Trenton, NJ 08625

RECEIVED
JAN 12 1987
STATE OF NEW JERSEY
DEPT. ENVIRONMENTAL PROTECTION
DIVISION WATER RESOURCES
BUR. OF [illegible]

Dear Mr. Gaston:

This letter documents the excursion of the Toxic Substance Limit for Chlorobenzene and Ethylbenzene, respectively, at the Bayonne Plant on November 13, 1986 which was previously reported by telephone. Analysis of the grab samples indicated results of 120 ug/l and 52 ug/l as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until December 23, 1986. Upon receipt, an investigation of the cause was undertaken. It is suspected that the rainstorm effect washed down the sewer system, but the investigation will continue to cover all areas that could possibly have contributed to the excursion. Due to the time lapse between the sampling and test completion the cause cannot be readily traced.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

RECEIVED
DEC 31 1986
State of New Jersey
Department of Environmental Protection
Division of Water Resources
Office of the Director

Very truly yours,

SWebb/el

C: US EPA Region II
Permit Administration
26 Federal Plaza
New York, NY 10278

Metro Region
NJDEP
Division of Water Resources
2 Babcock Pl.
West Orange, NJ 07052

E. Post

Post file

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MARKETING DEPARTMENT
SPECIALTY PRODUCTS
BAYONNE PLANT

D D. ESCH
MANAGER

RECEIVED
MAR 2 1987
State of New Jersey
Department of Environmental Protection
Division of Water Resources
Office of the Director

3-4-87
Hoffman

February 24, 1987

RECEIVED
MAR 5 1987
DEPT. ENVIRON. PROTECTION
Division Water Resources
WQM - Administration

RECEIVED
MAR 1 3 1987
STATE OF NEW JERSEY
DEPT. ENVIRONMENTAL PROTECTION
DIVISION WATER RESOURCES
BUR. OF IND. WASTE MGMT.

Mr. John Gaston, Administrator
Water Quality Management
New Jersey Department of
Environmental Protection
CN 029
Trenton, NJ 08625

Dear Mr. Gaston:

This letter documents an excursion of the Oil and Grease Limit at the Bayonne Plant on February 12, 1987 which was previously reported by telephone. Analysis of the grab sample indicated a result of 19 mg/l as compared to our NJPDES maximum limit of 15 mg/l.

An investigation of the cause of this excursion was undertaken. The weekly grab sample before the investigation was normal and sample results indicate it has returned to normal since our excursion. The Plant's intake water indicated a slight increase in the oil and grease level but not enough to cause the violation. The Plant's separator operation was normal during this time frame and all other indicators showed normal operation. As a result of this investigation, it currently appears that an incorrect laboratory test may have been the cause.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

D.D. Esch

LBMcGrath/el

C: US EPA Region II
Permit Administration
26 Federal Plaza
New York, NY 10278

Metro Region
NJDEP
Division of Water Resources
2 Babcock Pl.
West Orange, NJ 07052

EXXON COMPANY, U.S.A.
POST OFFICE BOX 9000 • BAYONNE, NEW JERSEY 07002-9000

MARKETING DEPARTMENT
SPECIALTY PRODUCTS
BAYONNE PLANT

D.D. ESCH
MANAGER

Paul Baseko DWR

RECEIVED

FEB 2 3 19 PM '87

DIVISION OF
HAZARDOUS WASTE
MANAGEMENT

January 29, 1987

FEB 0 9 1987

Mr. John Gaston, Administrator
Water Quality Management
New Jersey Department of
Environmental Protection
CN 029
Trenton, NJ 08625

Dear Mr. Gaston:

This letter documents the excursion of the Toxic Substance Limit for Chlorobenzene and Ethylbenzene, respectively, at the Bayonne Plant on January 8, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 91 ug/l and 97 ug/l as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until January 27, 1987. Upon receipt, an investigation of the cause was undertaken. Due to the time lapse between the sampling and test completion the cause cannot be readily traced but the investigation will continue to cover all areas that could possibly have contributed to the excursion.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

LBMcGrath/el

C: US EPA Region II
Permit Administration
26 Federal Plaza
New York, NY 10278

Metro Region
NJDEP
Division of Water Resources
2 Babcock Pl.
West Orange, NJ 07052

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SEP 10 1987 6

State of New Jersey
Department of Environmental Protection
Division of Water Resources
Office of the Director

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SEP 4 2 35 PM

HAZARDOUS WAST
MANAGEMENT
PROGRAMS

EXXON COMPANY, U.S.A.

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MARKETING DEPARTMENT
SPECIALTY PRODUCTS
BAYONNE TERMINAL

D.D. ESCH
MANAGER

August 31, 1987

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SEP 14 1987

DEPT. ENVIRON. PROTECTION
Division Water Resources
WQM - Administration

Mr. John Gaston, Administrator
Water Quality Management
New Jersey Department of
Environmental Protection
CN029
Trenton, New Jersey 08625

Dear Mr. Gaston:

This letter documents an excursion of the Toxic Substance Limit for Chlorobenzene and Toluene at the Bayonne Terminal on August 6, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 140 ug/l and 540 ug/l respectively, as compared to our NJPDES limit of 50 ug/l for each substance.

The results of these samples were received on August 31, 1987. We are continuing our ongoing investigation into areas that could possibly have contributed to these excursions. In looking back to the period when these samples were taken, we noted that extensive rainstorms before and during the sampling took place. This raises the possibility that this storm washed down the sewer system and could have caused these exceedances. However, due to the time lapse between the sampling and test completion the cause is not easily traced.

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

LBMcGrath/el
009

c: US EPA Region II
Permit Administration
26 Federal Plaza
New York, New York 10278

Metro Region
NJDEP
Division of Water Resources
2 Babcock Place
West Orange, New Jersey 07052

E Post FYI/file Part II

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SEP - 2 1987 #7

DEPT. ENVIRON. PROTECTION
Division Water Resources
WQM Administration

AUG 26 3 59 PM '87

HAZARDOUS WASTE MANAGEMENT PROGRAMS

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SEP 0 8 1987

DEPT. ENVIRON. PROTECTION
DIVISION OF WATER RESOURCES
BUR. OF IND. WASTE MGMT.

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AUG 31 1987

State of New Jersey
Department of Environmental Protection
Division of Water Resources
Office of the Director

EXXON COMPANY, U.S.A.

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MARKETING DEPARTMENT
SPECIALTY PRODUCTS
BAYONNE TERMINAL

D.D. ESCH
MANAGER

August 18, 1987

Mr. John Gaston, Administrator
Water Quality Management
New Jersey Department of
Environmental Protection
CN 029
Trenton, New Jersey 08625

Dear Mr. Gaston:

This letter documents an excursion of the Toxic Substance Limit for Chlorobenzene, Ethylbenzene and Toluene at the Bayonne Terminal on July 2, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 150 ug/l, 90 ug/l and 2490 ug/l respectively, as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until August 18, 1987. Upon receipt of the results, an investigation of the cause was undertaken. Extensive rainstorms before and during the sampling time frame washed down the sewer system and potentially caused the exceedances. We are continuing the investigation and are exploring all potential areas that could possibly have contributed to the excursion. Due to the time lapse between the sampling and test completion the cause is not easily traced.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information,I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

LBMcGrath/el
009

c: US EPA Region II
Permit Administration
26 Federal Plaza
New York, NY 10278

Metro Region
NJDEP
Division of Water Resources
2 Babcock Place
West Orange, NJ 07052

E.P. FYI

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DEPT. ENVIRONMENTAL PROTECTION
DIVISION WATER RESOURCES
BUR. OF IND. WASTE MGMT.

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Division Water Resources
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Arne Schuppin
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JUL 2 2 15 PM '87
HAZARDOUS WASTE
MANAGEMENT
PROGRAMS

MARKETING DEPARTMENT
SPECIALTY PRODUCTS
BAYONNE PLANT

D.D. ESCH
MANAGER

June 26, 1987

Mr. John Gaston, Administrator
Water Quality Management
New Jersey Department of
Environmental Protection
CN 029
Trenton, New Jersey 08625

RECEIVED
JUL 8 1987
New Jersey Department of Environmental Protection
Division Water Resources

Dear Mr. Gaston:

This letter documents the excursion of the Toxic Substance Limit for Chlorobenzene and Toluene, respectively, at the Bayonne Terminal on June 4, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 140 ug/l, and 1198 ug/l as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until June 25, 1987. Upon receipt of the results, an investigation of the cause was undertaken. It is suspected that extensive rainstorms before and during the sampling time frame washed down the sewer system causing the exceedance, but we are continuing the investigation to explore all potential areas that could possibly have contributed to the excursion. Due to the time lapse between the sampling and test completion the cause cannot be readily traced.

Does SIU?

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

D.D. Esch BY DJM

LBMcGrath/el
009

c: US EPA Region II
Permit Administration
26 Federal Plaza
New York, NY 10278

Metro Region
NJDEP
Division of Water Resources
2 Babcock Place
West Orange, NJ 07052

2297

Talked to, Ed Post
Lisa McGrath
on 5/10/87

who they telephoned into to, have they determined cause
Comparison testing
(Don't know cause yet
correlate with rainwater effects
group to locate problems

original to enforcement
hotline was told not to contact other offices that the hotline office was contact necessary parties

6-3-87

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JUN - 4 1987 #13
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Division Water Resources
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BAYONNE PLANT

D D ESCH
MANAGER

May 28, 1987

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NEW JERSEY
DEPT. ENVIRONMENTAL PROTECTION
DIVISION WATER RESOURCES
BUR. OF IND. WASTE MGMT.

Sampling was May 7th
Results were received May 2

Mr. John Gaston, Administrator
Water Quality Management
New Jersey Department of
Environmental Protection
CN 029
Trenton, New Jersey 08625

Dear Mr. Gaston:

This letter documents the excursion of the Toxic Substance Limit for Toluene, Chlorobenzene and Ethylbenzene, respectively, at the Bayonne Terminal on May 7, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 528 ug/l, 150 ug/l and 110 ug/l as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until May 22, 1987. Upon receipt, an investigation of the cause was undertaken. Due to the time lapse between the sampling and test completion the cause cannot be readily traced. A detailed investigation will continue to cover all areas that could possibly have contributed to the excursion.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

D.D. Esch.
J. N. Patterson

LBMcGrath/el
009

c: US EPA Region II
Permit Administration
26 Federal Plaza
New York, NY 10278

Metro Region
NJDEP
Division of Water Resources
2 Babcock Place
West Orange, NJ 07052

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JUN 3 1987
State of New Jersey
Department of Environmental Protection
Division of Water Resources
Office of the Director

A DIVISION OF EXXON CORPORATION

NRD-0027
012

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF EMERGENCY RESPONSE REGION I

INVESTIGATION REPORT - CASE #: 05-01-26-1443-22

CASE NAME:	IMTT Methyl Methacrylate Spill	**JOB #:**	A2360300
LOCATION:	IMTT - Bayonne Terminals Site		
MUNICIPALITY:	Bayonne	**COUNTY:**	Hudson
MASTER FILE:	00037671	**RESPONSE CODE:**	
PROGRAM INTEREST:	191482	**GPS LOCATION:**	40° 39.040' N, 074° 05.917' W

WEATHER:	Overcast	**WIND:**	15 mph	**DIR:**	N
		TEMP:	28°F	**RH:**	70%

RESPONSIBLE PARTY:	International Matex Tank Terminals		
ADDRESS:	East 22nd Street Bayonne, NJ		
CONTACT:	Bill Beer	**PHONE:**	201 437-2200

MATERIAL:	Methyl Methacrylate	**DIRECTIVE:**	
AMOUNT:	4,400 gallons	**NOV:**	
CAUSE:	Spill	**ACR:**	Yes
CLEAN UP:	PP	**OPA'90:**	
INJURY:	None	**NRC #:**	
EVACUATION:	None	**FOSC:**	

DUTY OFFICER: B. Doyle

LEVEL OF PROTECTION:		**ENTRIES:**			
INSTRUMENTATION:		**MATERIALS:**		**OTHER:**	
HAZCAT:	**RAD:**	**BOOM:**			
PID:	**DRAGER:**	**PAD:**			
FID:	**MIRAN:**	**SWEEP:**			
CGI:		**TUBES:**			

REPORT AUTHOR:	**REPORT DATE:**	**Initials:**
B. Doyle	Monday, January 31, 2005	

RESPONDERS	DATE	START	STOP	REG HRS	OT HRS	TOT HRS
B. Doyle	1/26/05	1500	2100	2	4	6

DDA000012

BRIEF DESCRIPTION OF INCIDENT:

Notification was received by the DEP Hot Line of a spill of Methyl methacrylate from a sheered valve, on a loading rack, at the IMTT (in a area of the terminal formerly operated by Bayonne Terminals) facility in Bayonne. BEP immediately deployed responders from Hudson Regional health Commission to determine the extent of the discharge and contacted the environmental agencies of New York City and State. The NY DEP reported that at least one call was received by the NY DEP Hot Line reporting chemical odors in Staten Island. The location of this complaint corresponds with the anticipated plot of this evolved plume.

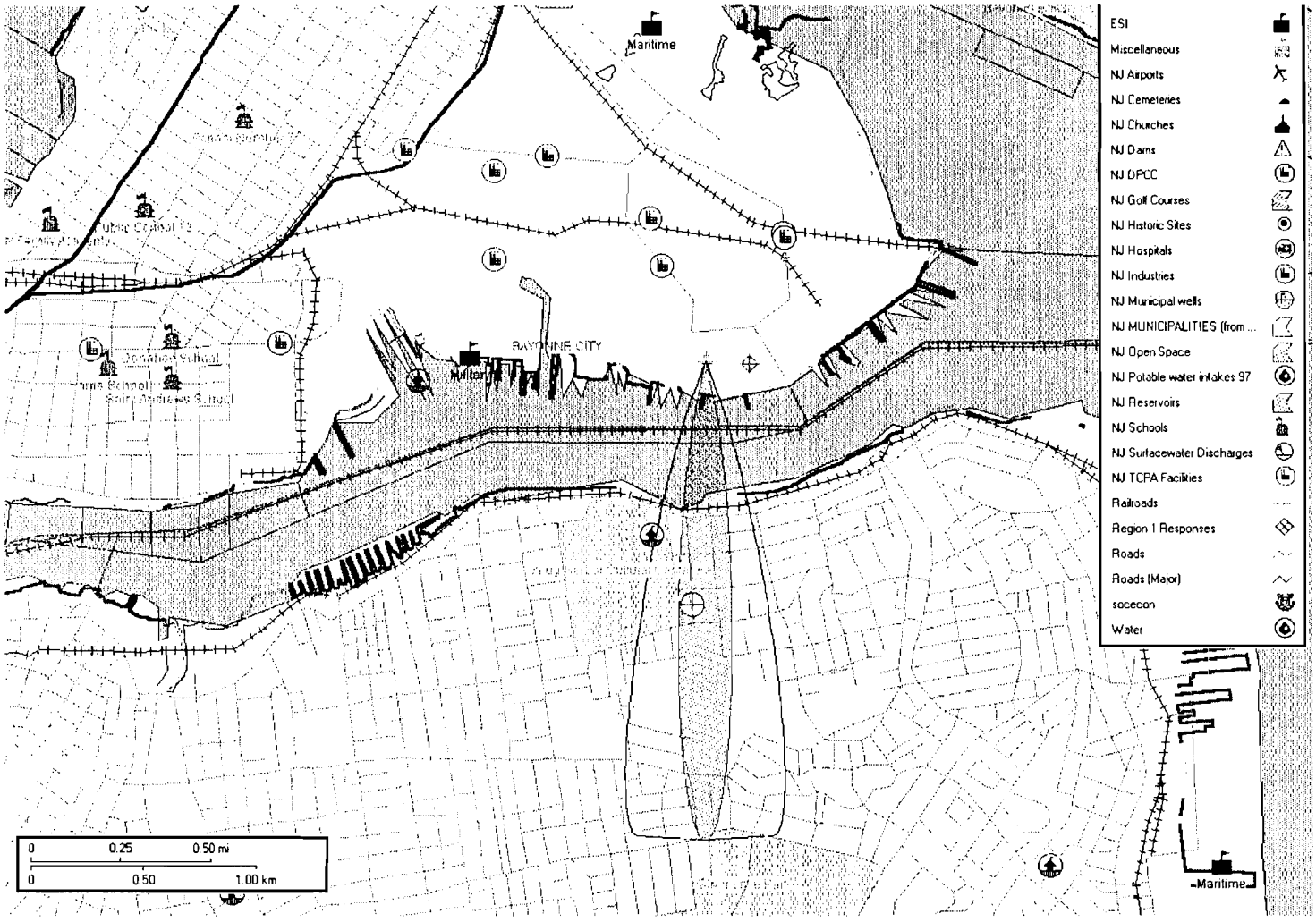
Despite the size of the spill, the resultant liquid pool was limited in size such that it had only a limited surface area for evaporation to occur and thus, the size and concentration of the plume did not pose an immediate threat to the down-wind population. Methyl methacrylate can be detected by its odor in air at concentrations as low as 0.049 ppm (49 ppb) by most people. Some people may be more sensitive and detect it at lower concentrations. The Legal Permissible Exposure Limit (PEL) is 100 ppm averaged over an 8-hour work shift (OSHA). The Short Term Exposure Limit (STEL) is 100 ppm.

Immediate response was undertaken by the PP to contain and mitigate the spill. Vac trucks were employed to quickly recover the spilled material from the exposed spill trench, thus all but terminating the evolution of a plume, and the bulk of the spilled material was recovered from the enclosed spill tank beneath the loading rack area.

RECOMENDATION:

Case referred for information as appropriate.

MAP:



SITE DATA INFORMATION:
Location: Bayonne, NEW JERSEY
Building Air Exchanges Per Hour: 0.50 (residential)
Time: January 26, 2005 1500 hours EST (manual input of data)

CHEMICAL INFORMATION:
Chemical Name: METHYL METHACRYLATE MONOMER
Molecular Weight: 100.12 kg/kmol
TLV-TWA: 50 ppm IDLH: 1000 ppm
******Footprint Level of Concern: .049 ppm (Odor threshold)******
Boiling Point: 212.54° F
Vapor Pressure at Ambient Temperature: 0.0095 atm
Ambient Saturation Concentration: 9,552 ppm or 0.96%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 15 mph from N at 3 meters
No Inversion Height
Stability Class: D
Air Temperature: 28° F
Relative Humidity: 70%
Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 400 square feet
Puddle Volume: 4400 gallons
Soil Type: Default Ground Temperature: 28° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 2.4 pounds/min
Max Average Sustained Release Rate: 2.39 pounds/min
(averaged over a minute or more)
Total Amount Released: 142 pounds

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
User-specified LOC: .049 ppm
Max Threat Zone for LOC: 1309 yards
Max Threat Zone for IDLH: less than 10 meters(10.9 yards)

TIME DEPENDENT INFORMATION:
Concentration Estimates at the point:
West: 61.9 yards
South: 1,197 yards
Max Concentration:
Outdoor: 0.045 ppm
Indoor: 0.0169 ppm

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF EMERGENCY RESPONSE REGION I

INVESTIGATION REPORT - CASE #: *04-08-26-2150-07*

09-01-241

CASE NAME:	IMTT Methanol Spill	JOB #:	J0100D00
LOCATION:	250 East 22nd Street	MASTER FILE:	00014888
MUNICIPALITY:	Bayonne	PROG.INTEREST:	013728
COUNTY:	Hudson	RESPONSE CODE:	0

RESPONSIBLE PARTY:	International-Matex Tank Terminals-Bayonne		
ADDRESS:	250 East 22nd Street P.O. Box 67 Bayonne, NJ 07002		
CONTACT:	Richard Fisette- Terminal Manager	PHONE:	(201) 437-2200

MATERIAL:	Methanol	DIRECTIVE:	No
AMOUNT:	Unknown: > 100,000 Gallons	NOV:	No
CAUSE:	Spill	ACR:	Yes
CLEAN UP:	Yes	OPA'90:	No
INJURY:	No	NRC #:	No
EVACUATION:	No	FOSC:	No

DUTY OFFICER: Laura Fonde

REPORT AUTHOR: Dave Berzins

REPORT DATE: 8/30/04

Initials: DMB

	RESPONDERS	DATE	START	STOP	REG HRS	OT HRS	TOT HRS
1.	Dave Berzins	8/26/04	2200	2400	0	2	2
2.	Hayder Camargo	8/26/04	2200	2400	0	2	2
3.	Dave Berzins	8/27/04	0000	0230	0	2.5	2.5

LEVEL OF PROTECTION: D ENTRIES: 1

INSTRUMENTATION:		MATERIALS:	OTHER:
HAZCAT:	RAD:	BOOM:	
Hnu:	DRAGER:	PAD:	
OVA:	MIRAN:	SWEEP:	
CGI:	PID:	TUBES:	

BRIEF DESCRIPTION OF INCIDENT:

IMTT reported an overflow of methanol from an above ground storage tank into secondary containment. The tank number and amount of material spilled out were both unknown.
Jim Monkowski from Hudson Regional Health Commission was deployed to the incident location along with BER-1 Emergency Response Specialist's Dave Berzins and Hayder Camargo.

On scene BER-1 met with Jim Monkowski from Hudson Regional Health Commission and Deputy Chief Boyle from the Bayonne Fire Department. Bayonne Fire Department had two foam pumpers on scene and were applying a foam blanket on top of the methanol in the secondary containment area. There were four storage tanks inside the secondary containment area. According to Deputy Chief Boyle, they were transferring methanol from a vessel, the *"Saamis Adventurer"* to a tank someplace else in the yard and a valve must have been left in the open position in tank # 12601, causing an overflow. There was already an unknown amount of product in the tank. BER-1 and HRHC also met with Mike Koscelnak- IMTT Fire Chief, Mike Morganti- the Environmental Manager from IMTT and Richard Fisette the Plant Manager from IMTT.

DDA000013

Vacuum trucks from EWMI and Ken's Marine Service arrived at IMTT and began to vacuum up the methanol.

8/30/04: BER-1 spoke with Michael Morganti- Env. Engineer for IMTT. The total amount of liquids removed from the concrete secondary containment are was 263,000 gallons. An estimated 150,000 gallons was methanol, leaving 113,000 gallons of water and water foam mixture. The tank is currently "safe" and today they will lower the volume. Approximately 900 barrels (37,800 gallons) of room were in the tank prior to this incident.

RECOMMENDATION:

BER-1 recommends case closure.

New Jersey De rtment of Environmental Protect n
COMMUNICATION CENTER NOTIFICATION REPO T

Received: 8/26/04 21:50:07 Comm. Center #: 04-08-26-2150-07

Operator: 21 Reviewed By:_____

Reporter Type: Facility Rep.

Reported By: WM. BEER Affiliation: IMTT BAYONNE Phone: 201-339-4712

Street Address: 250 E. 22ND ST, Municipality: Bayonne City State: NJ

Incident Category: Facility

Location Description: IMTT BAYONNE

Address: 250 E. 22ND ST

Municipality: Bayonne City County: Hudson State: NJ Zip Code: 07002

Location Type: Industrial Occurred Date: 08/26/2004 Occurred Time: 12:00 AM

Substance Released: METHANOL Amount Released: Units: Unknown

ID: Known State: Liquid CAS#: 67561 Incident Status at Time of Report: Continuous

Substance Contained: No HAZMAT: Yes TCPA: No Haz Waste: No

Incident Type: Spill Incident Type 2: Air Release

Injuries: No Public Evac: No Facility Evac: No Public Exposure: No Police At Scene: No

Firemen At Scene: No Dep Requested: No Road Closure: No Wind Speed/Direction:

Contamination Of: Land

Watershed: Other Watershed:

Incident Description: BULK TANK LEAKING UNKNOWN AMOUNT OF METHANOL, TANK # AND SIZE UNKNOWN. FUMES KEEPING WORKERS AT A DISTANCE. UNK EMERGENT SITUATION.

Responsible Party Name: IMTT BAYONNE Responsible Party Phone: 201-339-4712

Responsible Party Street Address: 250 E. 22ND ST,

Municipality: Bayonne City County: Hudson State: NJ Zip Code: 07002

Officials Notified

Name	Affiliation	Phone	Date	Time	Action
LAURA FONDE	ER1		08/26/2004	21:50	Notification - Home
OPR.# 8	BAYONNE CITY	201-858-6005	08/26/2004	21:55	Notification - A310
SGT. NORDSTROM	NJSP-ODU		08/26/2004	21:59	Notification - Office
	NJSP-OEM		08/26/2004	0:00	Notification - Fax
	Air - Metro		08/26/2004	0:00	Notification - Fax
	NJDOH - HAZMAT		08/26/2004	0:00	Notification - Fax
	Haz Waste - HQ		08/26/2004	0:00	Notification - Email
	ER1				Assigned

Comments: BER1 DAVE BERZINS RESPONDED. JOB #J0100D00, MF#00014888, PI#013728.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF EMERGENCY RESPONSE REGION I

INVESTIGATION REPORT - CASE #: *04-08-26-2150-07*

09-01-24/

CASE NAME:	IMTT Methanol Spill	**JOB #:**	J0100D00
LOCATION:	250 East 22nd Street	**MASTER FILE:**	00014888
MUNICIPALITY:	Bayonne	**PROG.INTEREST:**	013728
COUNTY:	Hudson	**RESPONSE CODE:**	0

RESPONSIBLE PARTY:	International-Matex Tank Terminals-Bayonne		
ADDRESS:	250 East 22nd Street P.O. Box 67 Bayonne, NJ 07002		
CONTACT:	Richard Fisette- Terminal Manager	**PHONE:**	(201) 437-2200

MATERIAL:	Methanol	**DIRECTIVE:**	No
AMOUNT:	Unknown: > 100,000 Gallons	**NOV:**	No
CAUSE:	Spill	**ACR:**	Yes
CLEAN UP:	Yes	**OPA'90:**	No
INJURY:	No	**NRC #:**	No
EVACUATION:	No	**FOSC:**	No

DUTY OFFICER: Laura Fonde

REPORT AUTHOR: Dave Berzins

REPORT DATE: 8/30/04

Initials: DB

	RESPONDERS	DATE	START	STOP	REG HRS	OT HRS	TOT HRS
1.	Dave Berzins	8/26/04	2200	2400	0	2	2
2.	Hayder Camargo	8/26/04	2200	2400	0	2	2
3.	Dave Berzins	8/27/04	0000	0230	0	2.5	2.5

LEVEL OF PROTECTION: D **ENTRIES:** 1

INSTRUMENTATION:		MATERIALS:	OTHER:
HAZCAT:	**RAD:**	**BOOM:**	
Hnu:	**DRAGER:**	**PAD:**	
OVA:	**MIRAN:**	**SWEEP:**	
CGI:	**PID:**	**TUBES:**	

BRIEF DESCRIPTION OF INCIDENT:

IMTT reported an overflow of methanol from an above ground storage tank into secondary containment. The tank number and amount of material spilled out were both unknown.
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On scene BER-1 met with Jim Monkowski from Hudson Regional Health Commission and Deputy Chief Boyle from the Bayonne Fire Department. Bayonne Fire Department had two foam pumpers on scene and were applying a foam blanket on top of the methanol in the secondary containment area. There were four storage tanks inside the secondary containment area. According to Deputy Chief Boyle, they were transferring methanol from a vessel, the *"Saamis Adventurer"* to a tank someplace else in the yard and a valve must have been left in the open position in tank # 12601, causing an overflow. There was already an unknown amount of product in the tank. BER-1 and HRHC also met with Mike Koscelnak- IMTT Fire Chief, Mike Morganti- the Environmental Manager from IMTT and Richard Fisette the Plant Manager from IMTT.

BBE000015

Vacuum trucks from EWMI and Ken's Marine Service arrived at IMTT and began to vacuum up the methanol.

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RECOMMENDATION:

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New Jersey De[illegible]rtment of Environmental Protect[illegible]n
COMMUNICATION CENTER NOTIFICATION REPO[illegible]T

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Reporter Type: Facility Rep.

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Incident Category: Facility

Location Description: IMTT BAYONNE

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Location Type: Industrial Occurred Date: 08/26/2004 Occurred Time: 12:00 AM

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Substance Contained: No HAZMAT: Yes TCPA: No Haz Waste: No

Incident Type: Spill Incident Type 2: Air Release

Injuries: No Public Evac: No Facility Evac: No Public Exposure: No Police At Scene: No

Firemen At Scene: No Dep Requested: No Road Closure: No Wind Speed/Direction:

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Watershed: Other Watershed:

Incident Description: BULK TANK LEAKING UNKNOWN AMOUNT OF METHANOL, TANK # AND SIZE UNKNOWN. FUMES KEEPING WORKERS AT A DISTANCE. UNK EMERGENT SITUATION.

Responsible Party Name: IMTT BAYONNE Responsible Party Phone: 201-339-4712

Responsible Party Street Address: 250 E. 22ND ST,

Municipality: Bayonne City County: Hudson State: NJ Zip Code: 07002

Officials Notified

Name	Affiliation	Phone	Date	Time	Action
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OPR.# 8	BAYONNE CITY	201-858-6005	08/26/2004	21:55	Notification - A310
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	NJDOH - HAZMAT		08/26/2004	0:00	Notification - Fax
	Haz Waste - HQ		08/26/2004	0:00	Notification - Email
	ER1				Assigned

Comments: BER1 DAVE BERZINS RESPONDED. JOB #J0100D00, MF#00014888, PI#013728.

...e Instructions ...ification before ...his form. The ...requested here is ...y law (Section 3010 ...source Conservation ...covery Act).

EPA Notification of Regulated Waste Activity

United States Environmental Protection Agency

Date Received (For Official Use Only)

ENVIRONMENTAL PROTECTION AGENCY REGION II

I. Installation's EPA ID Number *(Mark "X" in the appropriate box)*

☐ A. First Notification ☒ B. Subsequent Notification *(complete item C)*

C. Installation's EPA ID Number: NJT350019144

II. Name of Installation *(Include company and specific site name)*

EXXON COMPANY USA - BAYONNE

III. Location of Installation *(Physical address not P.O. Box or Route Number)*

Street: 1 AVENUE J

Street (continued):

City or Town: BAYONNE | State: NJ | ZIP Code: 07002-5077

County Code: | County Name: HUDSON

IV. Installation Mailing Address *(See Instructions)*

Street or P.O. Box: SAME

City or Town: | State: | ZIP Code: -

V. Installation Contact *(Person to be contacted regarding waste activities at site)*

Name *(last)*: DeANGELO | *(first)*: PETER

Job Title: PLANT ENGINEER | Phone Number *(area code and number)*: 201-858-6893

VI. Installation Contact Address *(See Instructions)*

A. Contact Address: Location ☒ Mailing ☐

B. Street or P.O. Box:

City or Town: | State: | ZIP Code: -

VII. Ownership *(See Instructions)*

A. Name of Installation's Legal Owner: EXXON COMPANY USA

Street, P.O. Box, or Route Number: 800 BELL STREET

City or Town: HOUSTON | State: TX | ZIP Code: 77002-7426

Phone Number *(area code and number)*: 713-656-7705

B. Land Type: P | C. Owner Type: P | D. Change of O... Indicator (Date Changed): Yes ☐ No ☒

4/8/93 Change of address is due to part of the property being sold to another

EPA Form 8700-12 (Rev. 9-92) Previous edition is obsolete.

DDB000001

EXXON COMPANY, U.S.A.
POST OFFICE BOX 2180 · HOUSTON, TEXAS 77001

SALVATORE J. CASAMASSIMA
ATTORNEY

November 13, 1980

Wilm
DOC

Environmental Protection Agency
EPA Region II
Information Service Center
26 Federal Plaza
New York, New York 10007

NJT3500111144

Gentlemen:

The enclosed permit application is submitted by Exxon Company, U.S.A. (a division of Exxon Corporation) on behalf of the Exxon Bayonne Plant located within EPA Region II. This application is being submitted in accordance with the requirements of the Resource Conservation and Recovery Act (42 U.S.C. 6901) and applicable hazardous waste and consolidated permit regulations published February 26 and May 19, 1980 by EPA.

Please note that the enclosed permit application containing Forms 1 and 3 has been certified by Mr. R. W. Haddock, Vice President of Refining for Exxon Company, U.S.A. Mr. Haddock has personally examined and familiarized himself with this application and, in my presence, made a direct inquiry of the persons immediately responsible for obtaining the information contained therein in regard to its truthfulness, accuracy and completeness.

The development of the information contained in this permit application submitted by Exxon Company, U.S.A. is the result of the cooperative effort of many individuals. Meetings and workshops were held to review and analyze the Subtitle C regulations, to identify hazardous wastes generated by the Bayonne Plant, and to determine which on-site operations treated, stored, or disposed of hazardous wastes. A comprehensive, good faith effort was made by Exxon Company, U.S.A. to assure the preparation of a truthful, accurate and complete permit application. However, EPA has acknowledged that the hazardous waste regulations published on February 26 and May 19, 1980 have raised numerous questions by the regulated community. In a notice published August 19, 1980 (45 Fed. Reg.55386), EPA expressed its intention to correct or clarify the hazardous waste regulations by means of technical amendments,

with explanation, or by Regulatory Interpretation Memoranda (RIMs). Issuance of the technical amendments or RIMs was promised for August, September, and October, 1980. Although several technical amendments (final, interim, and proposed) were issued on October 30, 1980, there remained many unresolved questions. Should additional amendments or RIMs be issued after November 7, 1980, they will be too late to allow revisions to the above-referenced permit application which needed to be finalized at our Company headquarters by that date.

EPA has recognized that the answers to certain questions in the permit application will remain uncertain until resolved by the explanations contained in the technical amendments or RIMs. It is therefore requested that EPA allow RCRA permit applications to be revised, without prejudice, following November 19, 1980, provided such revisions are necessitated by those technical amendments or RIMs which issue subsequent to the final preparation and/or filing of a permit application. Failure to allow such revisions would raise serious questions regarding due process and could jeopardize interim status for many facilities. EPA's cooperation in this matter is sincerely requested.

Very truly yours,

Salvatore J. Casamassima

SJC:jvk
Enclosure

ATTACHMENT 2

BAYONNE PLANT LABORATORY WASTES

Small quantities of laboratory wastes listed under Section 261.33 (e) and (f) are periodically and sporadically generated and are disposed of through the sewer system and enter the API Separator where they are treated. Examples of wastes which may appear are:

U-012	Aniline
U-037	Chlorobenzene
U-044	Chloroform
U-070	1,2 - Dichlorobenzene
U-080	Dichloromethane
U-154	Methyl Alcohol
U-220	Toluene
U-227	1,1,2 Trichloroethane
U-239	Xylene

EXXON COMPANY, U.S.A.
1 AVENUE J • BAYONNE, NEW JERSEY 07002-5077

MARKETING DEPARTMENT
LUBRICANTS AND PETROLEUM SPECIALTIES
BAYONNE LUBRICANTS PLANT

C.P. KRAMER
MANAGER

Certified Mail - RR

P 045 013 177

April 2, 1993

Mr. Norman Rost
Program Management Coordinator
USEPA - REGION II
Air & Waste Management Division
26 Federal Plaza, Room 1006
New York, New York 10278

Re: Subsequent Notification of Regulated Waste Activity
EPA ID Number NJT350011144
Exxon's Bayonne Lubricants Plant

Dear Mr. Rost:

On February 3, 1993, Exxon Corporation ("Exxon") entered into a contract to see its Bayonne Fuels Terminal to International MATEX Tank Terminals ("IMTT-BX"). Closing occurred on April 1, 1993. Exxon will retain ownership of its Lubricants Plant at the site. This letter informs you of changes which are going to take place at our facility (EPA ID Number NJT350011144), as a result of the sale of the Fuels Terminal and Chemical Plant portion of our Bayonne operation to International MATEX Tank Terminals (IMTT). Exxon will continue to utilize its existing EPA ID Number for the Lubricants operation, as well as for any site remediation activities which might be occasioned by the Administrative Consent Order which Exxon and the New Jersey Department of Environmental Protection and Energy ("NJDEPE") executed on November 27, 1991.

In addition, our street address has changed from "250 East 22nd Street to "1 Avenue J." It is our understanding that IMTT will be making a separate application for a new EPA ID Number under the old street address.

Please find attached our subsequent Notification of Regulated Waste Activity. Should you have any questions regarding this matter, please contact Mr. Peter DeAngelo at (201) 858-6893.

Sincerely,

Christopher P. Kramer

PAD:dal
4-2EPA.L
Attachment
cc: T. Sherman NJDEPE - w/att
Carlos Rodriguez, Hudson Regional Health Commission - w/att
Robert Weaver, IMTT - w/o att

(4)

RCRA Inspection Report

Exxon, Bayonne Plant
Foot of East 22nd Street
Bayonne, N.J. 07002
NJT3500111747

March 3, 1982

Participating Personnel: Environmental Protection Agency
J. Cosentino, Environmental Scientist

Exxon
R. Scerbo

Report Prepared by: Joseph Cosentino, Environmental Scientist
Source Monitoring Section

NEW YORK, N.Y. 10007

Purpose of Survey

This inspection was conducted to determine whether the Exxon Company, Bayonne Plant is in compliance with the requirements of RCRA. The regulatory requirements covered those contained in 40 CFR Part 262 and 40 CFR Part 265 under 265.16, Subpart C and Subpart D.

Facility Description

The Exxon Company, Bayonne Plant is a terminal for the transfer of oil and oil products. The facility is also engaged in the packaging of oil and lubricants into 1 quart, 5 quart, 5 gallon and 55 gallon containers for marketing. The facility receives via pipe line from Exxon's Bayway Plant or tank ship, stores in tanks, transfers to tank ships and trucks and packages oil and oil products. The facility occupies a 280 acre site and has been in operation for the past 104 years. Presently about 260 people are employed at the facility. Normal hours of operation are 24 hours/day, 7 days/week, 52 weeks/year.

The facility generates a sludge from an API separator which is listed as a hazardous waste from a specific source. The API separator along with a rain water retention tank and sand filters are used to treat the wastewater generated by the facility. The

wastewater consist of steam, tank draw off, non-contact cooling water and storm water run-off. The seperator is cleaned annually and yields about 120 cubic yards of sludge. The sludge is collected in a plastic lined tank for dewatering which is accomplished in 2 to 4 days. The facility maintains a contractual arrangement with BFI for the transfer, transport and disposal of the sludge. Disposal is at a BFI owned secure landfill in Maryland.

Cans from the oil packaging operations that are leakers or contain off spec oil are drained and crushed. Together with laboratory sample containers are handled as hazardous waste because they contain a residue of waste oil. Waste oil although not presently regulated as a hazardous waste by E.P.A. is regulated by New Jersey D.E.P.'s RCRA program.

The facility had applied as a TSD facility in its Part A application believing that its wastewater treatment system would be considered a hazardous waste treatment system and therefore be regulated under RCRA. However, under Regulation No. 264.1 the requirements of Part 264 do not apply to wastewater treatment units as defined in 260.10. The facility is in the process of applying for a delisting.

Regulatory Compliance

The facility has complied with all the applicable regulations of RCRA with one exception. The facility did not maintain written documentation of the type and amount of training given to its personnel in jobs related to hazardous waste management as required by Regulation No. 265.16.

RCRA GENERATOR INSPECTION FORM

COMPANY NAME: EXXON, BAYONNE PLANT
FOOT OF E. 22ND ST.
BAYONNE, N.J.

EPA I.D. NUMBER:
NJT 3500111144

COMPANY ADDRESS:

COMPANY CONTACT OR OFFICIAL:
RON SCERBO

INSPECTOR'S NAME: J. COSENTINO

TITLE:

BRANCH/ORGANIZATION:
SOURCE MONITORING

CHECK IF FACILITY IS ALSO A TSD FACILITY /X/ FACILITY IS IN THE PROCESS OF DELISTING

DATE OF INSPECTION: 3-3-82

	YES	NO
(1) Is there reason to believe that the facility has hazardous waste on site?	/	

a. If yes, what leads you to believe it is hazardous waste? Check appropriate box:

/X/ Company admits that its waste is hazardous during the inspection.

/X/ Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Application.

/ / The waste material is listed in the regulations as a hazardous waste from a nonspecific source (§261.31)

/ / The waste material is listed in the regulations as a hazardous waste from a specific source (§261.32)

/ / The material or product is listed in the regulations as a discarded commercial chemical product (§261.33)

/ / EPA testing has shown characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or has revealed hazardous constituents (please attach analysis report)

/ / Company is unsure but there is reason to believe that waste materials are hazardous. (Explain)

	YES	NO
b. Is there reason to believe that there are hazardous wastes on-site which the company claims are merely products or raw materials?		✓

~~Please explain.~~

c. ~~Identify~~ the hazardous wastes that are on-site, and estimate approximate quantities of each.

API SEPERATOR SLUDGE
CRUSHED CANS — NONE ON SITE AT TIME OF INSPECTION —
SPILL CLEAN UP
LAB SAMPLE CONTAINERS

d. Describe the activities that result in the generation of hazardous waste.

OIL TRANSFER & PACKAGING

(2) Is hazardous waste stored on site?		✓
a. What is the longest period that it has been accumulated? 3-4 DAYS		
b. Is the date when drums were placed in storage marked on each drum? TANK STORAGE		
(3) Has hazardous waste been shipped from this facility since November 19, 1980?	✓	
a. If "yes," approximately how many shipments were made? 129 SHIPMENTS IN ALL; 6 SHIPMENTS of 20 CU. YDS. of API SLUDGE		
(4) Approximately how many hazardous waste shipments off site have been made since November 19, 1980?		
a. Does it appear from the available information that there is a manifest copy available for each hazardous waste shipment that has been made?	✓	

b. ~~If "no" or "don't know," please elaborate.~~

	YES	NO
c. Does each manifest (or a representative sample) have the following information?		
– a manifest document number	✓	
– the generator's name, mailing address, telephone number, and EPA identification number	✓	
– the name, and EPA identification number of each transporter	✓	
– the name, address and EPA identification number of the designated facility and an alternate facility, if any: BFI is ONLY FACILITY USED		
– a description of the wastes (DOT)	✓	
– the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle	✓	
– a certification that the materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation under regulations of the Department of Transportation and the EPA	✓	
(5) Were there any hazardous wastes stored on site at the time of the inspection?		✓
a. If "yes," do they appear properly packaged (if in containers) or, if in tanks, are the tanks secure?		
b. If not properly packaged or in secure tanks, please explain.		
c. Are containers clearly marked and labelled?		
d. Do any containers appear to be leaking?		
e. If "yes," approximately how many?		

*(6) Has the generator submitted an annual report to EPA covering the previous calendar year? ___ ✓

a. How do you know?

(7) Has the generator received signed copies (from the TSD facility) of all manifests for wastes shipped off site more than 35 days ago? ___ ✓

a. If "no," have Exception Reports been submitted to EPA covering these shipments? ___ ___

(8) General comments. FOR QUESTION APPLICABLE UNDER REGULATION No. 262.34 SEE PAGES 2, 3 AND 5 OF TSD CHECKLIST.

— THE CRUSHED CANS AND LABORATORY SAMPLE CONTAINERS HAVE A RESIDUE OF OIL LEFT IN THEM AFTER DRAINING. THE FACILITY HANDLES THESE AS A HAZARDOUS WASTE IN ACCORDANCE WITH N.J. REGULATIONS.

— THE API SEPERATOR SLUDGE IS GENERATED ONLY ONCE OR TWICE A YEAR WHEN THE UNIT IS CLEANED. THE SLUDGE IS HELD IN A DEWATERING TANK FOR A FEW DAYS. BFI THEN TRANSFERS THE WASTE INTO A CONTAINER AND TRANSPORTS AND DISPOSES OF IT UNDER CONTRACT.

— THE FACILITY APPLIED AND IS LISTED AS A TSD. HOWEVER, THEY ARE IN THE PROCESS OF DELISTING AS UNDER REGULATION No. 265.1 THERE WASTEWATER TREATMENT UNITS WOULD NOT BE REGULATED UNDER RCRA.

* The effective date for this requirement is March 1, 1982.

RCRA TREATMENT, STORAGE AND DISPOSAL FACILITY INSPECTION FORM
FOR TSD FACILITIES ONLY

COMPANY NAME: Exxon, Bayonne EPA I.D. Number: NJT3500111144

COMPANY ADDRESS:

COMPANY CONTACT OR OFFICIAL:

TITLE:

OTHER ENVIRONMENTAL PERMITS HELD BY FACILITY: ☑ NPDES ☐ AIR ☐ OTHER

INSPECTOR'S NAME: J. Cosentino DATE OF INSPECTION: 3-3-82

BRANCH/ORGANIZATION:

TIME OF DAY INSPECTION TOOK PLACE:

(1) Is there reason to believe that the facility has hazardous waste on site?

a. If yes, what leads you to believe it is hazardous waste? Check appropriate box:

☐ Company admits that its waste is hazardous during the inspection.

☐ Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Application.

☐ The waste material is listed in the regulations as a hazardous waste from a nonspecific source (§261.31)

☐ The waste material is listed in the regulations as a hazardous waste from a specific source (§261.32)

☐ The material or product is listed in the regulations as a discarded commercial chemical product (§261.33)

☐ EPA testing has shown characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or has revealed hazardous constituents (please attach analysis report)

☐ Company is unsure but there is reason to believe that waste materials are hazardous. (Explain)

	YES	NO	DON'T KNOW
b. Is there reason to believe that there are hazardous wastes on-site which the company claims are merely products or raw materials?	___	___	___

Please explain:

c. Identify the hazardous wastes that are on-site, and estimate approximate quantities of each.

(2) Does the facility generate hazardous waste?	___	___	___
(3) Does the facility transport hazardous waste?	___	___	___
(4) Does the facility treat, store or dispose of hazardous waste?	___	___	___

VISUAL OBSERVATIONS

		YES	NO	DON'T KNOW
(5)	SITE SECURITY (§265.14)			
	a. Is there a 24-hour surveillance system?	___	___	___
	b. Is there a suitable barrier which completely surrounds the active portion of the facility?			
	c. Are there "Danger-Unauthorized Personnel Keep Out" signs posted at each entrance to the facility?	___	___	___
(6)	Are there ignitable, reactive or incompatible wastes on site? (§265.27)	___	___	___
	a. If "YES", what are the approximate quantities?			
	b. If "YES", have precautions been taken to prevent accidential ignition or reaction of ignitable or reactive waste?	___	___	___
	c. If "YES", explain			
	d. In your opinion, are proper precautions taken so that these wastes do not:			
	- generate extreme heat or pressure, fire or explosion, or violent reaction?	___	___	___
	- produce uncontrolled toxic mists, fumes, dusts, or gases in sufficent quantities to threaten human health?	___	___	___
	- produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions?	___	___	___
	- damage the structural integrity of the device or facility containing the waste?	___	___	___
	- threaten human health or the environment?	___	___	___

Please explain your answers, and comment if necessary.

e. Are there any additional precautions which you would recommend to improve hazardous waste handling procedures at the facility?

(7) Does the facility comply with preparedness and prevention requirements including maintaining: (§265.32) Yes

	YES	NO	DON'T KNOW
- an internal communications or alarm system?	/		
- a telephone or other device to summon emergency assistance from local authorities?	/		
- portable fire equipment?	/		
- adequate aisle space?	/		
- In your opinion, do the types of wastes on site require all of the above procedures, or are some not needed? Explain.			

In your opinion, do the types of wastes on site require all of the above procedures, or are some not needed? Explain.

*(8) Have you inspected to verify that the groundwater monitoring wells (if any) mentioned in the facility's groundwater monitoring plan (see no. 19 below) are properly installed? ___ ___ ___

If you have, please comment, as appropriate. ___ ___ ___

(9) a. Is there any reason to believe that groundwater contamination already exists from this facility? If "YES", explain. ___ ___ ___

b. Do you believe that operation of this facility may affect groundwater quality? ___ ___ ___

c. If "YES", explain.

RECORDS INSPECTION

(10) Has the facility received hazardous waste from an off-site source since Nov. 19, 1980 (effective date of the regulations)? ___ ___ ___

a. If "YES", does it appear that the facility has a copy of a manifest for each hazardous waste load received? ___ ___ ___

b. How many post-November 19 manifests does it have? (If the number is large, you may estimate)

c. Does each manifest (or a representative sample) have the following information?

- a manifest document number ___ ___ ___

* This requirement applies only after November 19, 1981.

	YES	NO	DON'T KNOW
- the generator's name, mailing address, telephone number, and EPA identification number	___	___	___
- the name, and EPA identification number of each transporter	___	___	___
- the name, address and EPA identification number of the designated facility and an alternate facility, if any;	___	___	___
- a DOT description of the wastes	___	___	___
- the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle	___	___	___
- a certification that the materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation under regulations of the Department of Transportation and the EPA	___	___	___
d. Are there any indications that unmanifested hazardous wastes have been received since November 19, 1980? If YES, explain.	___	___	___
(11) Does the facility have a written waste analysis plan specifying test methods, sampling methods and sampling frequency? (§265.13)	___	___	___
a. Does the character of wastes handled at the facility change from day to day, week to week, etc., thus requiring frequent testing? (You may check more than one) Waste characteristics vary ____ All wastes are basically the same ____ Company treats all waste as hazardous ____ Don't Know ____			
b. Does hazardous waste come to this facility from off-site sources?	___	___	___
c. If waste comes from an off-site source, are there procedures in the plan to insure that wastes received conform to the accompanying manifest?	___	___	___
(12) INSPECTIONS (§265.15)			
a. Does the facility have a written inspection schedule?	___	___	___
b. Does the schedule identify the types of problems to be looked for and the frequency for inspections?	___	___	___
c. Does the owner/operator record inspections in a log?	___	___	___
d. Is there evidence that problems reported in the inspection log have not been remedied? If "YES," please explain.	___	___	___

	YES	NO	DON'T KNOW
(13) PERSONNEL TRAINING (§265.16)			
a. Is there written documentation of the following:			
- job title for each position at the facility related to hazardous waste management and the name of the employee filling each job?	✓		
- type and amount of training to be given to personnel in jobs related to hazardous waste management?		✓	
- actual training or experience received by personnel?		✓	
(14) Does the facility have a written contingency plan for emergency procedures designed to deal with fires, explosion or any unplanned release of hazardous waste? (§265.51)	✓		
a. Does the plan describe arrangements made with local authorities?	✓		
b. Has the contingency plan been submitted to local authorities?	✓		
How do you know? COMPANY SAID SO			
c. Does the plan list names, addresses, and phone numbers of Emergency Coordinators?	✓		
d. Does the plan have a list of what emergency equipment is available?	✓		
e. Is there a provision for evacuating facility personnel?	✓		
f. Was an Emergency Coordinator present or on call at the time of the inspection?	✓		
(15) Does the owner/operator keep a written operating record with: (§265.73)			
- a description of wastes received with methods and dates of treatment, storage or disposal?			
- location and quantity of each waste?			
- detailed records and results of waste analysis and treatability tests performed on wastes coming into the facility?			
- detailed operating summary reports and description of all emergency incidents that required the implementation of the facility contingency plan?			
*(16) Does the facility have written closure and post-closure plans? (§265.110)			
a. Does the written closure plan include:			
- a description of how and when the facility will be partially (if applicable) and ultimately closed?			

* Effective date for this requirement is May 19, 1981.

	YES	NO	DON'T KNOW
- an estimate of the maximum inventory of wastes in storage or treatment at any time during the life of the facility?	___	___	___
- a description of the steps necessary to decontaminate facility equipment during closure?	___	___	___
- a schedule for final closure including the anticipated date when wastes will no longer be received and when final closure will be completed?	___	___	___
b. What is the anticipated date for final closure?	___	___	___
*c. Does the owner/operator have a written post-closure plan identifying the activities which will be carried on after closure and the frequency of these activities?	___	___	___
d. Does the written post-closure plan include:			
- a description of planned groundwater monitoring activities and their frequencies during post-closure?	___	___	___
- a description of planned maintenance activities and frequencies to ensure integrity of final cover during post-closure?	___	___	___
- the name, address and phone number of a person or office to contact during post-closure?	___	___	___
*(17) Does the owner/operator have a written estimate of the cost of closing the facility? (§265.142) What is it?	___	___	___
*(18) Does the owner/operator have a written estimate of the cost for post-closure monitoring and maintenance? What is it? (§265.144)	___	___	___
*(19) Has a groundwater monitoring plan been submitted to the Regional Administrator for facilities containing a surface impoundment, landfill or land treatment process? (This requirement does not apply to recycling facilities.) (§265.90)	___	___	___
a. Does the plan indicate that at least one monitoring well has been installed hydraulically upgradient from the limit of the waste management area?	___	___	___
b. Does the plan indicate that there are at least three monitoring wells installed hydraulically downgradient at the limit of the waste management area?	___	___	___

* This section applies only to disposal facilities.

* Effective date for this requirement is May 19, 1981.

SITE-SPECIFIC

Please circle all appropriate activities and answer questions on indicated pages for all activities circled. When you submit your report, include only those site-specific pages that you have used.

STORAGE	TREATMENT	DISPOSAL
Waste Pile p. 9	Tank p. 8	Landfill pp. 10-11
Surface Impoundment p. 8	Surface Impoundment pp. 8-9	Land Treatment pp. 9, 10
Container p. 7	Incineration pp. 12-13	Surface Impoundment p. 8
Tank, above ground p. 8	Thermal Treatment pp. 12-13	Other _____
Tank, below ground p. 8	Land Treatment pp. 9-10	
Other _____	Chemical, Physical p. 13 and Biological Treatment (other than in tanks, surface impoundment or land treatment facilities)	
	Other _____	

CONTAINERS (§265.170)

	YES	NO	DON'T KNOW
1. Are there any leaking containers? If "YES", explain.	___	___	___
2. Are there any containers which appear in danger of leaking? If "YES", explain.	___	___	___
3. Do wastes appear compatible with container materials?	___	___	___
4. Are all containers closed except those in use?	___	___	___
5. Do containers appear to be opened, handled or stored in a manner which may rupture the containers or cause them to leak?	___	___	___
6. How often does the plant manager claim to inspect container storage areas?			
7. Does it appear that incompatible wastes are being stored in close proximity to one another? If "YES", explain.	___	___	___
8. Are containers holding ignitable or reactive wastes located at least 15 meters (50 feet) from the facility's property line?	___	___	___
9. What is the approximate number and size of containers with hazardous wastes?			

TANKS (§265.190)	YES	NO	DON'T KNOW
1. Are there any leaking tanks? If "YES", explain.	___	___	___
2. Are there any tanks which appear in danger of leaking. If "YES", explain.	___	___	___
3. Are wastes or treatment reagents being placed in tanks which could cause them to rupture, leak, corrode or otherwise fail? If "YES", explain.	___	___	___
4. Do uncovered tanks have at least 2 feet of freeboard or an adequate containment structure?	___	___	___
5. Where hazardous waste is continuously fed into a tank, is the tank equipped with a means to stop this inflow?	___	___	___
6. Does it appear that incompatible wastes are being stored in close proximity to one another, or in the same tank? If "YES", explain.	___	___	___
7. How often does the plant manager claim to inspect container storage areas?			
8. Are ignitable or reactive wastes stored in a manner which protects them from a source of ignition or reaction? If "YES", explain.	___	___	___
9. What is the approximate number and size of tanks containing hazardous wastes?			

SURFACE IMPOUNDMENTS (§265.220)			
1. Is there at least 2 feet of freeboard in the impoundment?	___	___	___
2. Do all earthen dikes have a protective cover to preserve their structural integrity? If "YES", specify type of covering.	___	___	___
3. Is there reason to believe that incompatible wastes are being placed in the same surface impoundment? If "YES", explain.	___	___	___

	YES	NO	DON'T KNOW
4. Are ignitable or reactive wastes being placed in surface impoundments without being treated to remove these characteristics? If "YES", explain.	___	___	___
5. Are there any leaks, failures or is there any deteriorization in the impoundments? If "YES", explain.	___	___	___
6. Give the approximate size of surface impoundments (gallons or cubic feet).			

WASTE PILES (§265.250)

1. Is the waste pile protected from wind erosion?	___	___	___
a. Does it appear to need such protection?	___	___	___
b. Explain what type of protection exists.			
2. Does it appear that incompatible wastes are being stored in the same waste pile? If "YES", explain.	___	___	___
3. Is leachate run-off from a pile a hazardous waste? If "YES", explain this determination and answer (a) and (b) below.	___	___	___
a. Is the pile placed on an impermeable base that is compatible with the waste?	___	___	___
b. Is the pile protected from precipitation and run-on?	___	___	___
4. In your judgment, are ignitable or reactive wastes managed in such a way that they are protected from any material or conditions which may cause them to ignite? Please explain or indicate if no such wastes are present.	___	___	___
Are they placed on an existing pile so that they no longer meet the definition of ignitable or reactive waste? Please explain.	___	___	___
5. How many waste piles are on site, and approximately how large are they?			

LAND TREATMENT (§265.270)

1. Can the facility operator demonstrate that the hazardous waste has been made less or non-hazardous by biological degradation or			

	YES	NO	DON'T KNOW
*2. Is run-on diverted away from the active portions of the land treatment facility?	___	___	___
*3. Is run-off collected?	___	___	___
4. Are food chain crops being grown on the facility property?	___	___	___
a. If "YES", can the facility operator document that arsenic, lead and mercury:			
- will not be transferred to the crop or ingested by food chain animals or	___	___	___
-- will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils.	___	___	___
b. Has notification of the growing of the food chain crops been made to the Regional Administrator?	___	___	___
5. Is there a written and implemented plan for unsaturated zone monitoring?	___	___	___
6. Are there records of the application dates, application rates, quantities and location of each hazardous waste placed in the facility?	___	___	___
7. Do the closure and post-closure plans address:			
a. control of migration of hazardous wastes into the groundwater?	___	___	___
b. control of run-off, release of airborne particulate contaminants?	___	___	___
c. compliance with requirements for the growth of food-chain crops (if they are present)?	___	___	___
8. Is ignitable or reactive waste immediately incorporated into the soil so the resulting waste no longer meets that definition? If "YES", explain.	___	___	___
9. Are incompatible wastes placed in the same land treatment area? If "YES", explain.	___	___	___
10. What is the area of the land receiving hazardous waste treatment?	___	___	___

LANDFILLS (§265.300)

†1. Is run-on diverted away from the active portions of the landfill?	___	___	___
†2. Is run-off from active portions of the landfill collected?	___	___	___

* Effective date for these requirements is May 19, 1981.

† These requirements are effective November 19, 1981.

	YES	NO	DON'T KNOW
3. Is waste which is subject to wind dispersal controlled? Explain.	___	___	___
4. Does the owner/operator maintain a map with:			
- the exact location and dimensions of each cell	___	___	___
- the contents of each cell and approximate location of each hazardous waste type	___	___	___
5. Do the closure and post-closure plans address:			
- control of pollutant migration via ground water?	___	___	___
- control of surface water infiltration?	___	___	___
- prevention of erosion?	___	___	___
6. Is ignitable or reactive waste treated before being placed in the landfill? Explain how you know.	___	___	___
7. Are precautions taken to insure that incompatible wastes are not placed in the same landfill cell? If "NO", explain.	___	___	___
8. Are bulk or non-containerized wastes containing free liquids placed in the landfill? If "YES",	___	___	___
a. Does the landfill have a liner which is chemically and physically resistant to the added liquid?	___	___	___
b. Is the waste treated and stabilized so that free liquids are no longer present?	___	___	___
*9. Are containers holding liquid waste or waste containing free liquids placed in the landfill?	___	___	___
10. Are empty containers (e.g. those containing less than 1/2 inch of liquid) placed in the landfills?	___	___	___
If so, are they crushed flat, shredded or similarly reduced in volume before they are buried?	___	___	___
11. What is the approximate area of the hazardous waste landfill?			

* Effective date for this requirement is November 19, 1981.

INCINERATORS AND THERMAL TREATMENT
(§§265.340 and 265.379)

	YES	NO	DON'T KNOW
1. What type of incinerator or thermal treatment is at the site (e.g. waterwall incinerator, boiler, fluidized bed, etc.)?			
2. Was hazardous waste being incinerated or thermally treated during your inspection? If "YES", answer all following questions. If "NO", answer only questions 3 and 7.	___	___	___
3. Has waste analysis been performed (and written records kept) to include:			
- heating value of the waste	___	___	___
- halogen content	___	___	___
- sulfur content	___	___	___
- concentration of lead	___	___	___
- concentration of mercury	___	___	___

NOTE: Waste analysis need not be performed on each waste load if if there are documented data available to show waste characteristics that do not vary. If there are such documented data available, check here [ ].

4. Does it appear that the owner/operator brings his thermal treatment process to steady state (normal) conditions of operation before introducing hazardous wastes?	___	___	___
5. Did it appear during your inspection that there was adequate monitoring and inspection by owner/operator every 15 minutes during hazardous waste incineration for:			
- waste feed	___	___	___
- auxiliary fuel feed	___	___	___
- air flow	___	___	___
- incinerator temperature	___	___	___
- scrubber flow	___	___	___
- scrubber pH	___	___	___
- relevant level controls	___	___	___
Every hour for:			
- stack plume (color and opacity)	___	___	___
5. Is there open burning of hazardous waste?	___	___	___

a. If "YES", what is being burned? (only burning or detonation of explosives is permitted)

b. If open burning or detonation of explosives is taking place, approximately what is the distance from the open burning or detonation to the property of others?

	YES	NO	DON'T KNOW
6. Does the incinerator appear to be operating properly? (Do emergency shutdown controls and system alarms seem to be in good working order?) Please explain.	___	___	___
a. Is there any evidence of fugitive emissions?	___	___	___
7. Is the residue from the incinerator treated by the owner as a hazardous waste? Please explain.	___	___	___

8. What types of air pollution control devices (if any) are installed on the incinerator?

CHEMICAL, PHYSICAL AND BIOLOGICAL TREATMENT (§265.400)

1. Does the treatment process system show any signs of ruptures, leaks, or corrosion? Please explain.	___	___	___
2. Is there a means to stop the inflow of continuously-fed hazardous wastes?	___	___	___
3. Is there ignitable or reactive waste fed into the treatment system?	___	___	___
If "YES", has it been treated or protected from any material or conditions which may cause it to ignite or react? If so, explain how.	___	___	___
Are the incompatible wastes placed in the same treatment process? If "YES", explain.	___	___	___

5. Describe the treatment system at this facility.

EXXON COMPANY, U.S.A.
POST OFFICE BOX 9000 • BAYONNE, NEW JERSEY 07002-9000

REFINING DEPARTMENT
BAYONNE PLANT

December 7, 1984

Exxon Bayonne Plant
Foot of East 22 Street
Bayonne, New Jersey
NJT350011144

Mr. Frank Coolick, Chief
Bureau of Hazardous Waste Engineering
32 East Hanover Street
Trenton, New Jersey 08625

Dear Mr. Coolick:

This letter is in response to your request for additional information required by the Bureau to complete a review of the Exxon Bayonne TSD Status Delisting Request. The following information is submitted in response to your specific questions in your letter of November 20, 1984. The information is numbered to correspond to your letter.

(1) Tank Storage (S02) and Treatment (T01) are concrete separators, five steel storm water retention tanks, and one steel oil recovery tank associated with our NJPDES facilities (NJ0002089). Attached is a schematic of plant water flow which was submitted with our most recent NJPDES renewal application. This schematic shows all sources of waste generation on-site which subsequently use the aforementioned S02 and T01 facilities.

(2)
- Effluent is discharged from these facilities through two permitted discharge points to Upper New York Bay and the Kill Van Kull.
- Oil skimmed from the facilities is recycled and blended with #6 Fuel Oil for sale.
- Sludge removed from the facilities is disposed of at CECOS International, Niagara Falls, New York, a licensed TSD facility (NYD080336241). Recent sampling of this material shows it to be non-hazardous under RCRA. A copy of the Lab Analysis was attached to our letter of June 25, 1984,

Hopefully, this information clarifies any questions concerning our delisting request. If any additional information is needed, please contact Mr. R. E. Scerbo at 201-858-5544.

Very truly yours,

W. L. Taetzsch

W. L. Taetzsch
Environmental Coordinator

REScerbo:vh
Attachment

90
206

EXXON COMPANY, U.S.A.
POST OFFICE BOX 222 • LINDEN, NEW JERSEY 07036

REFINING DEPARTMENT
BAYWAY REFINERY

March 29, 1983

TSD Interim Status
Exxon Bayonne Plant
I. D. No. NJT 350011144
File No.: 10-6-4b-3

Frank Coolick, Chief
Bureau of Hazardous Waste Engineering
Department of Environmental Protection
32 East Hanover Street
Trenton, New Jersey 08625

Dear Mr. Coolick:

In response to your letter of February 16, 1983, regarding the submission of a 1982 TSD Annual Report for our Bayonne Plant, we request that the Plant be removed from the TSD interim status facility list.

Our letter of November 15, 1982 to David Shotwell, which was subsequently forwarded to your office, stated the reasons why the Plant is not a TSD facility. A copy of the letter is attached.

Since New Jersey has now received authorization from the EPA for the RCRA Phase I program and since your letter instructions note that no contact with the EPA is required, we do not plan to submit a revised Part A application to the EPA.

Should you require any additional information about the Bayonne Plant operations or its classification, please call me on (201) 474-7585.

Very truly yours,

W. L. Taetzsch
Environmental Coordinator

WLT/lk
Attachment

(3)

EPA I.D. No.	Name	City
NJD980526693	IT Corporation	Edison
NJD980526867	Shielding Technology	Piscataway
NJD980535959	Marko Engraving & Art Corp.	Fairview
NJD980594022	E.L. Beth Ltd.	Edison
NJD980642888	Kelbro, Inc.	Camden
NJD991304148	Viking Terminal Company	Sayreville
NJT000028134	Barone Barrel & Drum Company	Paterson
NJT350011144	Exxon Bayonne Plant	Bayonne
NJT350014585	Campbell Foundry Company	Kearny

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

MAY 26 1983

Mr. George Tyler
Assistant Commissioner for
Environmental Management and Control
New Jersey Department of
Environmental Protection
Labor and Industry Building, Room 805
P.O. Box CN 402
Trenton, New Jersey 08625

Dear Mr. Tyler:

On January 31, 1983, the Environmental Protection Agency (EPA) Region II sent 302 warning letters (sample copies enclosed) to owners and operators of hazardous waste facilities which were not in compliance with EPA's financial responsibility regulations. These regulations became effective in July 1982 and required facilities to demonstrate that funds are available for:

- meeting their obligations under the Resource Conservation and Recovery Act (RCRA) for proper closure and post-closure care of their facilities (i.e., "financial assurance"); and

- compensating others for bodily injury or property damage caused by accidents arising from operations of the facilities (i.e., "liability insurance").

The following is to summarize industry's compliance to date (or lack thereof) with the Federal financial responsibility regulations. See the enclosed computer printout for a listing of the facilities in compliance with the Federal regulations. Also enclosed is a listing of the facilities within each non-compliance category.

- Number of facilities which have submitted all required documents (including those facilities that have utilized the financial test and corporate guarantee methods of compliance) - 279

- Number of facilities which demonstrated financial assurance only - 10

- Number of facilities which demonstrated liability insurance only - 28

- Number of "non-submitters" (excluding facilities which either closed or requested to be declassified as hazardous waste facilities) - 56

The above numbers indicate that 94 facilities are in violation of the Federal and State financial responsibility requirements. Our concern is whether the State or EPA should proceed with enforcement follow-up activities for these 94 facilities. The State's financial regulations, which have been in effect since October 1981, are even more stringent than the Federal regulations in that they do not provide facilities with the option of using the corporate guarantee or the financial test for demonstrating proof of financial assurance and liability insurance. Two hundred and thirty facilities have utilized these alternative methods (see the enclosed computer printout for a listing of facilities which employed these methods). Now that New Jersey has received Phase I interim authorization, the State is responsible for enforcing financial regulations in lieu of EPA. However, the Phase I Memorandum of Agreement (MOA) does provide that EPA can initiate enforcement actions in cases where the State does not initiate timely and appropriate enforcement actions against violators. Regardless of which Agency takes the lead, enforcement actions must be based on the State's financial regulations (see enclosed EPA guidance on enforcement actions in authorized States).

Please notify me within the next two weeks as to the State's plan of action (including time frames) for conducting follow-up enforcement activities for the 94 facilities identified in the enclosure. (Of course, some of these facilities may have already provided the State with financial documentation pursuant to State regulations and would therefore not be considered enforcement candidates by New Jersey.) My staff and I are ready to provide assistance to New Jersey in implementing this high priority portion of the State's Phase I hazardous waste program. Alternatively, if the State chooses not to take the enforcement lead at this time, EPA is ready to proceed with initiating said enforcement actions and will keep New Jersey informed of its activities.

Form ADM-012

09-04-09

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO BHWE file Through Y.E. Yacoub DATE 3/28/88

FROM Chris FelicetTi

SUBJECT STATUS of Southern California chemicals NJD 062041108

An inspection was done 5/2/84. The facility was closed and demolished

Re Polios-fe

Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

John J. Trela, Ph.D., Acting Director
401 East State St.
CN 028
Trenton, N.J. 08625
609 - 633 - 1408

JUL 14 1987

M E M O R A N D U M

TO: Dave Shotwell, Chief
Bureau of Field Operations

FROM: Ernest J. Kuhlwein, Jr., Acting Chief EK
Bureau of Hazardous Waste Engineering

SUBJECT: Site Inspections for Closed TSD Facilities

Attached is a list of facilities who notified the DEP that their TSD activities had ceased at the indicated time. These facilities were referred to your Bureau in 1983 and we have not received a response regarding these facilities to date.

We are requesting a site inspection in order to determine whether or not these facilities had implemented a proper termination of RCRA TSD activities.

If an inspection was performed for a facility after January 1, 1986 a copy of that report would be sufficient.

Please copy this Bureau on your inspection reports.

EP48/abl
Attachment
c: Anthony Cavalier, MFO
Kevin Krause, NFO
Vince Krisak, CFO
Terry Ostrander, SFO

DDC000002

Facility (Location)	EPA ID No.	Closure Date
1. Active Oil Service (Newark)	NJD 045 661 170	6/80
2. Apex Color Works Inc. (Newark)	NJD 002 153 781	7/1/82
3. Barone Barrel & Drum Co. (Paterson)	NJD 000 028 134	Unknown
4. Beggs & Cobb Corp. (Newark)	NJD 065 825 481	4/1/81
5. B & L Oil Corp. (Kearny)	NJD 980 594 006	Unknown
6. Carpenter Tech. Corp. (Cranbury)	NJD 085 640 563	8/19/81
7. Frey Industries (Newark)	NJD 000 729 780	11/31/82
8. GMC - Warehouse Div. (Elizabeth)	NJD 061 072 948	5/31/82
9. Gould, Inc. (Saddle Brook)	NJD 061 347 860	6/82
10. Hermetite Div. Mundet Ind. (Carlstadt)	NJD 001 392 679	11/14/82
11. Penick Corp. (Montville)	NJD 000 692 327	5/80
12. Permutit R & D Center (Monmouth Junction)	NJD 097 408 678	7/1/81
13. Pride Electro Plating (Westville)	NJD 002 331 975	Unknown
14. SW Electronics & Mfg. Corp. (Cherry Hill)	NJD 002 488 989	3/3/83
15. Solar Compounds Corp. (Maywood)	NJD 075 424 960	Unknown
16. Southern California Chemicals (Bayonne)	NJD 062 041 108	4/81
17. Triangle PWC Corp. (New Brunswick)	NJD 078 268 968	Early 1981

NJDEP RCRA EVALUATION FORM

Facility Name: So California Chemical NJPDES: NJ00

Address: Foot of E. 22nd St. EPA ID#: NJD 062041108

Bayonne, NJ 07002 Inspection Date: 9-30-85

County: Hudson Reviewer: K. Swanson

TSD Activities on Original Part A Application

___	D79 Injection Well	___	S03 Waste Pile
___	D80 Landfill	___	S04 Surface Impoundment
___	D81 Land Application	✓	T01 Tank
___	D83 Surface Impoundment	✓	T02 Surface Impoundment
✓	S02 Tank	✓	T04 Trmt, other

Note: A surface impoundment with self-supporting sides is a tank under state and federal hazardous waste regulations.

TSD Activities on Revised Part A not filed

___	D79 Injection well	___	S03 Waste pile
___	D80 Landfill	___	S04 Surface impoundment
___	D81 Land application	___	T01 Tank
___	D83 Surface impoundment	___	T02 Surface impoundment
___	S02 Tank	___	T04 Trmt, other

Agency approving revised Part A: ___ USEPA ___ DWM ___ DWR

Form of approval: ___ Written ___ Verbal ___ Assumption of the part of the facility

---

Describe the activities that result in the generation of hazardous waste:

N.J.A.C.		YES	NO	N/A
7:26-8.5	WASTE ANALYSIS Is the waste hazardous?	___	___	✓
	If the waste is hazardous because of its characteristics, did the generator test its waste to determine whether it is hazardous?	___	___	✓
	Does the generator have a process-defined hazardous waste? Process Code _____	___	___	✓
7:26-11.2	TANKS Are there any tanks at the facility which treat or store hazardous waste?	___	✓	___
	Number of NON-HAZARDOUS tanks _____ Are the tanks above ground? How many? _____	___	___	✓
	Are the tanks below ground? How many? _____	___	___	✓
	Number of HAZARDOUS tanks _____ How many qualify as surface impoundments? ___ Are the tanks above ground? How many? _____	___	___	✓
	Are the tanks below ground? How many? _____	___	___	✓
	On the reverse side of this page identify the waste treated/stored in each tank.			
7:26-11.2(3)	Do uncovered tanks (surface impoundments) have at least 2 feet of freeboard or an adequate containment structure?	___	___	✓
7:26-11.3	SURFACE IMPOUNDMENTS How many surface impoundments does the facility have? 0			
	How many are RCRA? _____			
	Identify on the back of this page the lining material of each surface impoundment.			
7:26-11.3(a)	Is there at least 2 feet of freeboard in each surface impoundment?	___	___	✓
7:26-11.3(b)	Do all earthen dikes have a protective cover to preserve their structural integrity?	___	___	✓
	If yes, specify the type of covering: _____			

N.J.A.C.		YES	NO	N/A
	WASTE PILES How many waste piles are on-site? 0			
	How many do they claim are NON-HAZARDOUS? ____			
	Is the waste pile protected from wind erosion?	___	___	✓
7:26-9.3(a)5ii	Is the pile placed on an impermeable base that is compatible with the waste?	___	___	✓
	If no, explain. ____			
	Is there berming or diking around the waste piles?	___	___	✓
7:26-9.3(a)5iii	Is run-on diverted away from the pile?	___	___	✓
7:26-9.3(a)iv	Is leachate and run-off from the pile collected and managed properly?	___	___	✓
7:26-11.4	LANDFILLS Does the landfill have a state Solid Waste ID number?	___	___	✓
	How many landfills are there? 0			
	How many landfills were filed for on the Part A application? ____			
	Identify the types of waste disposed of in the landfill: ____			
7:26-11.4(a)1	Is run-on diverted away from all portions of the landfill?	___	___	✓
7:26-11.4(a)8i	Does the landfill have a liner which is chemically and physically resistant to the added liquid and a functioning leachate collection and removal system with a capacity sufficient to remove all leachate produced?	___	___	✓
7:26-11.4(a)8ii	Before disposal, is the liquid waste or waste containing free liquids treated or stabilized chemically or physically, so that free liquids are no longer present?	___	___	✓
7:26-11.4(b)	Does the owner or operator of a landfill to dispose of hazardous wastes subsequent to the detection of any liquid, in the secondary collection system?	___	___	✓

N.J.A.C.		YES	NO	N/A
	MONITORING WELLS			
7:14A-6.2	Does the owner/operator have a groundwater monitoring plan approved by the Department and capable of determining the facility's impact on the quality of groundwater?	___	___	✓
	How many monitoring wells does the facility have? _____			
7:14A-6.3(a)	Is the groundwater monitoring system capable of yielding samples for analysis?	___	___	✓
	Are the wells properly located?	___	___	✓
	Are the wells screened in the proper portion of the formation inorder to yield accurate information	___	___	✓
	SAMPLING PLAN			
7:14A-6.4(a)	Does the owner/operator have a sampling and analysis plan?	___	___	✓
	Does the plan include procedures and techniques for:			
	1. Sample collection	___	___	___
	2. Sample preservation and shipment	___	___	___
	3. Analytical procedures	___	___	___
	4. Chain of custody	___	___	___
	GROUND WATER QUALITY			
7:14A-6.15	Have any existing ground water monitoring wells been sampled?	___	✓	
7:9-6.1, Appendix F of 7:14A	Do ground water analyses violate State ground water quality standards or NJPDES permit toxic effluent limitations?	___	___	✓
	What groups of contaminants or hazardous constituents present in the ground water exceed the State ground water quality standards or NJPDES Appendix F limits?			
	___radionuclides ___nutrients ___pesticides ___organic chemicals ___metals			
7:14A-6.4; 7:14A-6.10	Has the facility performed statistical tests on ground water monitoring results?	___	___	✓
	Do the statistical tests indicate a statistically significant difference between upgradient and downgradient parameters used as indicators of ground water contamination?	___	___	✓

SOUTHERN CALIFORNIA CHEMICAL COMPANY

RCRA Inspection Report Fact Sheet

Operator: Southern California Chemical Co., Inc.
8851 Dice Road
Santa Fe Springs, CA 90670
(213) 698-8036

Facility Location: Foot of East 22nd Street
Bayonne
Hudson County

Southern California Chemicals, which leased the property, vacated the premisis at the end of 1979, at which time all TSD activities ended. The tanks and surface impoundment have been removed, as has the building.

WQM168

ADM-012

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO Ron Corcory, Chief, BFO

FROM Frank Coolick, Chief, BHWE DATE July 29, 1983

SUBJECT Closure of RCRA Part A TSD Facilities

The below listed companies have responded to the recent NOV's regarding failure to submit annual reports for TSD facilities on March 1, 1982 and/or this Bureau's recent instructions letter for annual reports due on March 1, 1983 by stating that the subject TSD activities have closed.

I would appreciate your Bureau's review of these facilities and confirmation by field inspection that a proper termination of RCRA TSD activity was implemented.

COMPANY NAME	COUNTY	EPA ID NO.	PART A ACTIVITY
Quanta Resources Corp. Edgewater	BERGEN	NJD000694307	S02, T01
Southern California Chemical Co., Inc. Bayonne	HUDSON	NJD062041108	S02, T01, T02, T04
S.W. Electronics & Mfg. Corp. 619 Hollywood Avenue Cherry Hill	CAMDEN	NJD002488989	S01
Barone Barrel & Drum Co. Paterson	PASSAIC	NJT000028134	S01

S01 = storage in containers
S02 = tank storage
T01 - treatment in tanks
T02 = treatment; surface impoundment
T04 = treatment other (unspecified)

F.C.

FC:BE:jb

ADM#12

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO Keith Onsdorff

FROM [redacted] Chief - Bur. of Haz. Waste RP DATE May 4, 1981

SUBJECT SOUTHERN CALIFORNIA CHEMICAL, BAYONNE, NEW JERSEY

Enclosed please find the lab analysis for soil samples taken from Southern California Chemical. High concentrations of Lead, Chronium and Nickel in several samples warrants further action by your office. At an investigation conducted by this Bureau on April 10, 1981, company officals stated that the site would be cleaned up prior to vacancy.

As you suggested, a move to prevent sale or lease of the property until clean-up is complete and may be appropriate.

Enclosure
RP:GP:ps

BUREAU OF HAZARDOUS
REFERRAL

To: Keith Onsdorff
From: G. Pikul
No: HW-ORSC-005-81
Priority:

DDC000007

FOR TSD FACILITIES ONLY

COMPANY NAME: Southern California Chemical CO., INC. EPA I.D. Number: NJD062041103

COMPANY ADDRESS: Foot of E. 22nd. Street Bayonne, NJ. 07002

COMPANY CONTACT OR OFFICIAL: John E. MAZAK 201-823-4300

TITLE: Production manager

OTHER ENVIRONMENTAL PERMITS HELD

BY FACILITY: ☒ NPDES to discharge Process water to Kill Van Kull.

☒ AIR

☐ OTHER

INSPECTOR'S NAME: Alphonse Iannuzzi

DATE OF INSPECTION: 3/24/81

BRANCH/ORGANIZATION: NJ. DEP HAZARDOUS WASTE

TIME OF DAY INSPECTION TOOK PLACE: 0840

(1) Is there reason to believe that the facility has hazardous waste on site?

a. If yes, what leads you to believe it is hazardous waste? Check appropriate box:

☒ Company admits that its waste is hazardous during the inspection.

☐ Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Application.

☐ The waste material is listed in the regulations as a hazardous waste from a nonspecific source (§261.31)

☐ The waste material is listed in the regulations as a hazardous waste from a specific source (§261.32)

☐ The material or product is listed in the regulations as a discarded commercial chemical product (§261.33)

☐ EPA testing has shown characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or has revealed hazardous constituents (please attach analysis report)

☐ Company is unsure but there is reason to believe that waste materials are hazardous. (Explain)

	YES	NO	DON'T KNOW
b. Is there reason to believe that there are hazardous wastes on-site which the company claims are merely products or raw materials?	___	X	___

Please explain:

c. Identify the hazardous wastes that are on-site, and estimate approximate quantities of each. 1) Alkaline etching material 2000 gallons. 2) Ferric chloride etching solution 3000 gallons 3) 45 drums sodium sulfate 4) 156 drums copper cement 5) 3,000 gallons mixed metal sludge and process water 6) Miscella... Sludge...

(2) Does the facility generate hazardous waste?	X	___	___
(3) Does the facility transport hazardous waste?	X	___	___
(4) Does the facility treat, store or dispose of hazardous waste?	X	___	___

VISUAL OBSERVATIONS

	YES	NO	DON'T KNOW
(5) SITE SECURITY (§265.14)			
a. Is there a 24-hour surveillance system? In Ind. Park.	X		
b. Is there a suitable barrier which completely surrounds the active portion of the facility?	X		
c. Are there "Danger-Unauthorized Personnel Keep Out" signs posted at each entrance to the facility?		X	
(6) Are there ignitable, reactive or incompatible wastes on site? (§265.27)		X	
a. If "YES", what are the approximate quantities?			
b. If "YES", have precautions been taken to prevent accidential ignition or reaction of ignitable or reactive waste?			
c. If "YES", explain			
d. In your opinion, are proper precautions taken so that these wastes do not:			
- generate extreme heat or pressure, fire or explosion, or violent reaction?			
- produce uncontrolled toxic mists, fumes, dusts, or gases in sufficent quantities to threaten human health?			
- produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions?			
- damage the structural integrity of the device or facility containing the waste?			
- threaten human health or the environment?			

Please explain your answers, and comment if necessary.

e. Are there any additional precautions which you would recommend to improve hazardous waste handling procedures at the facility?

(7) Does the facility comply with preparedness and prevention requirements including maintaining: (§265.32)

	YES	NO	KNOW
- an internal communications or alarm system? PA System	X		
- a telephone or other device to summon emergency assistance from local authorities? PA System, telephone	X		
- portable fire equipment?	X		
- adequate aisle space?		X	
- in your opinion, do the types of wastes on site require all of the above procedures, or are some not needed? Explain.	X		

In your opinion, do the types of wastes on site require all of the above procedures, or are some not needed? Explain.

All above procedures are needed.

*(8) Have you inspected to verify that the groundwater monitoring wells (if any) mentioned in the facility's groundwater monitoring plan (see no. 19 below) are properly installed?	X		
If you have, please comment, as appropriate.			
(9) a. Is there any reason to believe that groundwater contamination already exists from this facility? If "YES", explain. Spillage and rotted drums probably contaminated ground water.	X		
b. Do you believe that operation of this facility may affect groundwater quality?	X		

c. If "YES", explain.

Facility had several spills of material containing heavy metals and rotted, uncovered drums in poor condition. Precipitation can easily cause drums to overflow and percolate pollutents to ground water.

RECORDS INSPECTION

(10) Has the facility received hazardous waste from an off-site source since Nov. 19, 1980 (effective date of the regulations)? spent etching solution	X		
a. If "YES", does it appear that the facility has a copy of a manifest for each hazardous waste load received?		X	
b. How many post-November 19 manifests does it have? (If the number is large, you may estimate) 1 manifest			
c. Does each manifest (or a representative sample) have the following information?			
- a manifest document number	X		

* This requirement applies only after November 19, 1981.

	YES	NO	N/A
- the generator's name, mailing address, telephone number, and EPA identification number	X		
- the name, and EPA identification number of each transporter	X		
- the name, address and EPA identification number of the designated facility and an alternate facility, if any; no alternate facility	X		
- a DOT description of the wastes	X		
- the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle	X		
- a certification that the materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation under regulations of the Department of Transportation and the EPA.	X		
d. Are there any indications that unmanifested hazardous wastes have been received since November 19, 1980? If YES, explain. Facility did not manifest spent etching solution back from customers and addmitted not doing so.	X		
(11) Does the facility have a written waste analysis plan specifying test methods, sampling methods and sampling frequency? (§265.13)	X		
a. Does the character of wastes handled at the facility change from day to day, week to week, etc., thus requiring frequent testing? (You may check more than one) Waste characteristics vary ____ All wastes are basically the same ✓ Company treats all waste as hazardous ✓ Don't Know ____			
b. Does hazardous waste come to this facility from off-site sources?	X		
c. If waste comes from an off-site source, are there procedures in the plan to insure that wastes received conform to the accompanying manifest? See comment to a.	X		
(12) INSPECTIONS (§265.15)			
a. Does the facility have a written inspection schedule?		X	
b. Does the schedule identify the types of problems to be looked for and the frequency for inspections?		X	
c. Does the owner/operator record inspections in a log?		X	
d. Is there evidence that problems reported in the inspection log have not been remedied? If "YES," please explain.		X	

Test for copper conte and specific gravity on ea Shippment to facility. operator could not find copy of proceedures for co during inspection.

– an estimate of the maximum inventory of wastes in storage or treatment at any time during the life of the facility?	___	X	___
– a description of the steps necessary to decontaminate facility equipment during closure?	___	X	___
– a schedule for final closure including the anticipated date when wastes will no longer be received and when final closure will be completed?	___	X	___
b. What is the anticipated date for final closure?	___	X	___
†c. Does the owner/operator have a written post-closure plan identifying the activities which will be carried on after closure and the frequency of these activities?	___	X	___
d. Does the written post-closure plan include:			
– a description of planned groundwater monitoring activities and their frequencies during post-closure?	___	X	___
– a description of planned maintenance activities and frequencies to ensure integrity of final cover during post-closure?	___	X	___
– the name, address and phone number of a person or office to contact during post-closure?	___	X	___
*(17) Does the owner/operator have a written estimate of the cost of closing the facility? (§265.142) What is it?	___	X	___
*(18) Does the owner/operator have a written estimate of the cost for post-closure monitoring and maintenance? What is it? (§265.144)	___	X	___
*(19) Has a groundwater monitoring plan been submitted to the Regional Administrator for facilities containing a surface impoundment, landfill or land treatment process? (This requirement does not apply to recycling facilities.) (§265.90)	___	X	___
a. Does the plan indicate that at least one monitoring well has been installed hydraulically upgradient from the limit of the waste mangement area?	___	X	___
b. Does the plan indicate that there are at least three monitoring wells installed hydraulically downgradient at the limit of the waste management area?	___	X	___

† This section applies only to disposal facilities.

* Effective date for this requirement is May 19, 1981.

SITE-SPECIFIC

Please circle all appropriate activities and answer questions on indicated pages for all activities circled. When you submit your report, include only those site-specific pages that you have used.

STORAGE	TREATMENT	DISPOSAL
Waste Pile p. 9	Tank p. 8	Landfill pp. 10-11
Surface Impoundment p. 8	Surface Impoundment pp. 8-9	Land Treatment pp. 9, 10
(Container p. 7)	Incineration pp. 12-13	Surface Impoundment p. 8
(Tank, above ground p. 8)	Thermal Treatment pp. 12-13	Other _____
Tank, below ground p. 8	Land Treatment pp. 9-10	
Other _____	(Chemical, Physical) p. 13 and Biological Treatment (other than in tanks, surface impoundment or land treatment facilities)	

	YES	NO	DON'T KNOW
Other Acidification, precipitation of metals and neutr			

CONTAINERS (§265.170)

	YES	NO	DON'T KNOW
1. Are there any leaking containers?	X		

If "YES", explain.
Several 55 gallon metal drums corroded and pitted with no bottoms. Some drums are stored on their side, have no tops and material poured onto soil.

2. Are there any containers which appear in danger of leaking?	X		

If "YES", explain.
most drums contain solid material and have corroded, rusted, bo- and sides such that the material inside the drum is visible through the con Photographs were taken.

3. Do wastes appear compatible with container materials? Corrosive wastes were placed into metal containers.		X	
4. Are all containers closed except those in use?		X	
5. Do containers appear to be opened, handled or stored in a manner which may rupture the containers or cause them to leak?	X		

6. How often does the plant manager claim to inspect container storage areas? hourly during an 8 hour shift.

7. Does it appear that incompatible wastes are being stored in close proximity to one another? If "YES", explain.		X	
8. Are containers holding ignitable or reactive wastes located at least 15 meters (50 feet) from the facility's property line?		X	

9. What is the approximate number and size of containers with hazardous wastes?
approximatly 400, 55 gallon metal and plastic containers.

	YES	NO	DON'T KNOW
TANKS (§265.190)			
1. Are there any leaking tanks? If "YES", explain.	—	X	—
2. Are there any tanks which appear in danger of leaking. If "YES", explain.	—	X	—
3. Are wastes or treatment reagents being placed in tanks which could cause them to rupture, leak, corrode or otherwise fail? If "YES", explain.	—	X	—
4. Do uncovered tanks have at least 2 feet of freeboard or an adequate containment structure? was difficult to determine if containment was adequate.	—	—	X
5. Where hazardous waste is continuously fed into a tank, is the tank equipped with a means to stop this inflow?	X	—	—
6. Does it appear that incompatible wastes are being stored in close proximity to one another, or in the same tank? If "YES", explain.	—	X	—
7. How often does the plant manager claim to inspect container storage areas? hourly during an 8 hour shift.			
8. Are ignitable or reactive wastes stored in a manner which protects them from a source of ignition or reaction? If "YES", explain.	—	X	—
9. What is the approximate number and size of tanks containing hazardous wastes?	16 tanks; capacity from 6,000 to 20,000 gallons most tanks are 10 to 20,000 gallon		

	YES	NO	DON'T KNOW
SURFACE IMPOUNDMENTS **(§265.220)**			
1. Is there at least 2 feet of freeboard in the impoundment?	—	—	—
2. Do all earthen dikes have a protective cover to preserve their structural integrity? If "YES", specify type of covering.	—	—	—
3. Is there reason to believe that incompatible wastes are being placed in the same surface impoundment? If "YES", explain.	—	—	—

a. If "YES", what is being burned? (only burning or detonation of explosives is permitted)

b. If open burning or detonation of explosives is taking place, approximately what is the distance from the open burning or detonation to the property of others?

	YES	NO	DON'T KNOW
6. Does the incinerator appear to be operating properly? (Do emergency shutdown controls and system alarms seem to be in good working order?) Please explain.			
a. Is there any evidence of fugitive emissions?			
7. Is the residue from the incinerator treated by the owner as a hazardous waste? Please explain.			
8. What types of air pollution control devices (if any) are installed on the incinerator?			

CHEMICAL, PHYSICAL AND BIOLOGICAL TREATMENT (§265.400)

1. Does the treatment process system show any signs of ruptures, leaks, or corrosion? Please explain. leaks from hoses, spillage of material inside of building ~	X		
2. Is there a means to stop the inflow of continuously-fed hazardous wastes?	X		
3. Is there ignitable or reactive waste fed into the treatment system?		X	
If "YES", has it been treated or protected from any material or conditions which may cause it to ignite or react? If so, explain how.			
Are the incompatible wastes placed in the same treatment process? If "YES", explain.			

5. Describe the treatment system at this facility.

Spent Alkaline, or acidic etching solutions were brought to facility. Incoming Alkaline waste was analyzed for copper content, put into storage tanks, temperature raised to 160°F, add caustic soda, cooked for 4 hours and Copper Oxide was precipitated out. Solution is settled and alkaline decant (waste produced from system) pumped to waste waterholding tanks and has heavy metals precipitated out, salt water than flows into Kill Van Kull (salt tidal water).

Acidic waste pumped to cone tank iron in form of rejected television screens added - replates copper, material is then ferrous chloride which is chlorinated to obtain ferric chloride. Copper cemente is precipitated out and is collected and sent to smelter. (See attached sheets)

Southern California Chemical would sell etching solution to customers. When this solution was spent Southern Cal. would send one of their trucks to pickup spent solution and bring it back to their facility for treatment. Copper and Iron containing solutions would be stored in tanks, heated, cooled, settled, have pH adjusted, precipitate various metals, and discharge supernate to kill Van Kull. Metals are precipitated in a cemente pit outside of So. Cal's process building. Metal sludge percipitated is hauled from pit to Frontier Chemical Waste Process Inc., NY (See attached manifests). Frontier, Cartaret Industrial Warehousing (NY) Loiber Truck Sales and Services (NY) all hauled the material to Frontier. All are registered NJ special waste haulers except Cartaret Ind., however, vehicle ID numbers on manifests were not properly completed therefore it could not be determined if each individual vehicle was registered (see attached manifests).

Spent etching solution was not manifested from customers to So. Cal. except for 2 cases (See attached copies). In both cases So. Cal was the hauler. So. Cal. is not a registered TSD facility or special waste transporter in NJ.

Manifest Check revealed that metal sludges were sent to LiQwacon, Conn. (LiQwacon also hauled material) in 1979. Other metal sludges were sent to Modern Transportation, NJ., hauled by modern and Samson Tank, NJ in 1979-80.

Inspection of facility indicated poor drum storage and several spills. Two rail cars (8,000 and 10,000 gals) were loaded with spent Alkaline etching solution to be shipped to S.Cal. Chem., Illinois. Drums (166) of copper cemente (precipitated copper sludge) will be sent to Amax Corp. Carteret, NJ.

Facility is in process of shutting down and will be totally closed by April, 15, 1981. Corporate headquaters is located at: 8851 Dice Road.

Santafe Springs
California 90670
(213) 698-8036.

HAZARDOUS WASTE INVESTIGATION

Inspector: Thomas Brady Date: April 10, 1981

Location: Southern California Chemical Company, Inc. (SCC)

St: Foot of East 22nd Street

Town: Bayonne

County: Hudson

Lot: Block:

Origin of Complaint: RCRA Inspection

Complaint: Possible soil and groundwater contamination.

Findings: I inspected the site accompanied by Tessie Wishart, Office of Science and Research, and Richard Cahalan-Wynne, Division of Water Resources. We met with the plant Production Manager, John Mazak. The company is terminating its lease with Bayonne Industries, the owner of the industrial park in which they are located, and is moving out. Mr. Mazak claimed that Bayonne Industries plans to clear out the entire complex and construct a tank farm in its place.

Mr. Mazak stated that the company is stopping all business operations as of April 15, but will remain active for a few months to dismantle equipment and do any necessary cleanup. All usable items, such as pumps, vats, tanks etc., are being moved to other SCC facilities for further use.

The company was involved with reclamation of spent and contaminated etching solutions through neutralization and metal precipitation. Waste liquids are discharged into the park's sanitary sewer system, and sludges and solids are taken out by either Modern Transportation or Frontier Chemical Waste. The site is contaminated with past spills from loading and off loading operations and poor storage practices. The heaviest concentrations are of arsenic, lead, nickel, and chromium. The entire industrial complex is known to have contaminated groundwater, although how much of it has been cuased by SCC is unknown. Spills, as they occured within the plant building, had been collected in a sump and periodically pumped to a central outside pit, which was pumped out as needed, by either Modern or Frontier.

As far as the company's clean-up plan is concerned, company personnel are planning on gathering all drummed and otherwise containerized waste on site and dumping it into the outside pit, along with whatever can be cleaned up from the inside of the building. The spilled solids and contaminated soil on the outside will also be scraped up and dumped into this pit. Frontier will be brought in as needed to pump out the pit, and thoroughly clean it when all material has been removed. Mr. Mazak anticipates any drums or other metals will be dissolved because of the acidity of the materials in the pit, and claims that Frontier will take any and all materials of this sort. All loads are manifested.

State fines Pearl firm for polluting

TRENTON--The State Environmental Protection Department yesterday announced a $5,000 penalty against Ronda Pearl, a division of EM Induustries, Inc., East 22nd Street, Bayonne, for discharging untreated process water to the Kill Van Kull.

The penalty results from Rona Pearl illegal discharge of process water, a violation of the Water Pollution Control Act.

Responding to a citizen's complaint, the DEP representatives conducted an inspection last October. The firm, which manufactures pigments for the cosmetics industry, discharged 3,000 gallons of untreated process water to the Platty Kill Creek, a tributary of the Kill Van Kull, DEP said.

The unpermitted discharge was reported by Rona Pearl to be caused by an electrical power failure.

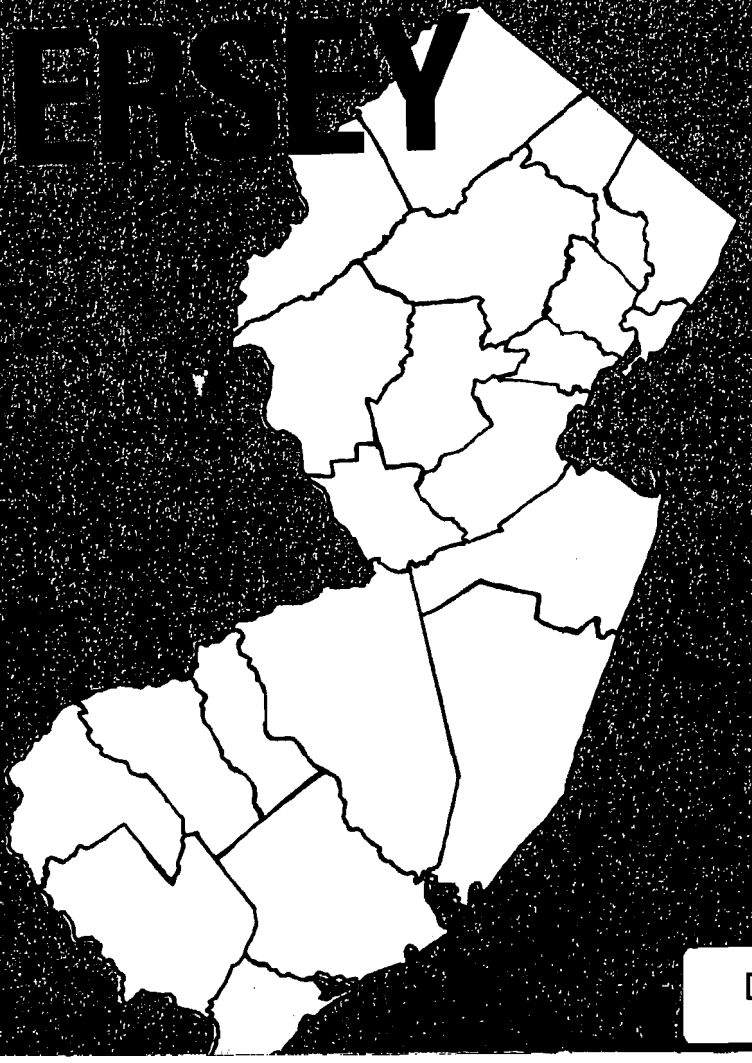
Jersey Journal 4/21/88

DDD000001

MacRAE'S INDUSTRIAL DIRECTORY

1985

NEW JERSEY



DDD000002

FISCHER, PHILIP INC.
31 Poplar St.
Williamstown, NJ 08094
Phone: 609-629-6136
Emp: 35
Dresses
SIC 2335

GABRIELLE, RAYMOND
Box 367
Williamstown, NJ 08094
Phone: 609-629-5505
Emp: 6
Metal Work
SIC 3446

MONROE TOOL & DIE INC.
Box 141, R.D. 4
Williamstown, NJ 08094
Phone: 609-629-5164
Sales: Up to $1,000,000 Est. 1964
Emp: 15
4,000 Sq. Ft.
Metal stampings & dies
SIC 3469, 3544
Pres: Robert W. Gingrich, Jr.

OK TOOL & DIE CO.
603 Bluebell Rd.
Williamstown, NJ 08094
Phone: 609-629-5757
Sales: Up to $1,000,000
Emp: 15
Dies & tools, for plastic molding
SIC 3544
Pres: Kenneth Ostapovich

PLAIN DEALER PRINTING CO., INC., THE
Box M, 19 Clinton Ave.
Williamstown, NJ 08094
Phone: 609-629-1001
Emp: 11
3,888 Sq. Ft.
Weekly Newspaper
SIC 2711
Pres: John R. Vernon
VP: Virginia B. Vernon
Sls Mgr: Alicia Beechler
Plant Mgr: Harold Vanemen

PRECISION METALCRAFTERS, INC.
17 Filbert St.
Williamstown, NJ 08094
Phone: 609-629-1020
Sales: Up to $1,000,000 Est. 1969
Emp: 15
24,000 Sq. Ft.
Sheet metal work
SIC 3444
Pres: F. Falconi

QEI CORP., PA. QEI CORP.
Box D
Williamstown, NJ 08094
Phone: 609-767-8052
Sales: Up to $1,000,000 Est. 1971
Emp: 20
3,500 Sq. Ft.
▲Broadcasting Equip.
★SIC 3662
Sec: William J. Hoelzel
Banks:
United Jersey Bank
Philadelphia National Bank

REMCOR
Blackhorse Pike, Box 165
Williamstown, NJ 08094
Phone: 609-629-7481
Sales: $1,000,000 to $5,000,000 Est. 1964
Emp: 50
60,000 Sq. Ft. 13 Acres
Fiberglass contract machining
★SIC 3599
Pres: M.J. Caparrelli
Exec VP: Wilbur Ganary
Sec: M.R. Ganary
GM: J.F. Caparelli
Plant Mgr: E. Kubat
MM: N. Denicola
Bank:
Heritage

SAYBROOK KNITTING MILLS, DIV OF U.S. INDUSTRIES INC.
128 Saybrook Ave.
Williamstown, NJ 08094
Phone: 609-629-7415
Emp: 15
30,000 Sq. Ft.
Ladies Sweaters
SIC 2253
Ch Exec: S. Barrer
Pres: E. Coopersmith
Compt: E. T. Slegowski
Plant Mgr: M. Johnston

SHARP BROTHERS, BUILDING SUPPLIERS INC.
134 Slicklerville Rd.
Williamstown, NJ 08094
Phone: 609-629-7474
Sales: Up to $1,000,000 Est. 1950
Emp: 15
2 Acres
Ready mixed cement; asphalt paving
SIC 2952, 3273
Partner: Richard W. Sharp
Partner: John W. Sharp
Bank:
First National State Bank
Pleasantville, NJ

TRIANGLE TUBE & SPECIALTY CO., INC.
R.D. 5, Box 122, J Thomas Ave.
Williamstown, NJ 08094
Phone: 609-728-1700
Sales: Up to $1,000,000
Emp: 25
5,000 Sq. Ft. 1.5 Acres
▲Tankless coils & heat exchangers for boilers & solar application
★SIC 3443, 3498
Pres: William Ensminger

VIOLET PACKING CO.
123 Railroad Ave.
Williamstown, NJ 08094
Phone: 609-629-7428
Emp: 50
Canned Sauce
★SIC 2033
Pres: J. V. Sclafani

WEST JERSEY MFG. CO.
Box W.
Williamstown, NJ 08094
Phone: 609-629-4776
Telecopier: 609-629-2107
Sales: $1,000,000 to $5,000,000 Est. 1966
Emp: 20
20,000 Sq. Ft.
Carbon & stainless steel flanges
SIC 3494
Pres: Joseph Walker
Sls Mgr: Michael Clarke

WOODBURY
Telephone Area Code-609

CONSTITUTION CO., THE
58 S. Broad St., Box 315
Woodbury, NJ 08096
Phone: 609-845-0225
Sales: Up to $1,000,000
Emp: 5
Commercial Printing
SIC 2751
Pres: Lewis C. Robinson
Sec: Marie A. Robinson
Treas: Marie A. Robinson

EVERGREEN LUMBER CO., INC.
640 S. Evergreen Ave.
Woodbury, NJ 08096
Phone: 609-845-2828
Sales: Up to $1,000,000 Est. 1972
Emp: 11
7,000 Sq. Ft.
Lumber & millwork
SIC 2431, 2491
Pres: Samuel Marcone
Treas: John Pasquini

FORWAY INDUSTRIES INC., SUB. OF SPECTRONICS INC.
122 Green Ave.
Woodbury, NJ 08096
Phone: 609-456-2511
Emp: 40
30,000 Sq. Ft.
Welded Assemblies, Sheet Metal, Precision Machined Parts
SIC 3599
Pres: Jacob Farber
Exec VP: William Blau
Sls Mgr: J. De Fay

GLOUCESTER COUNTY TIMES, THE
309 S. Broad St.
Woodbury, NJ 08096
Phone: 609-845-3300
Sales: $5,000,000 to $10,000,000 Est. 1897
Emp: 150
22,000 Sq. Ft. 4 Acres
◆Daily & weekly newspaper publishing; commercial printing; direct mail
SIC 2711, 2751, 7331
Pub: Dean Singleton
Pres: Dean Singleton
Compt: Frank Gargano
VP: Walter Holt
Ed: David Fiedler

HENRY CORP., E.P.
201 Park Ave.
Woodbury, NJ 08096
Phone: 609-845-6200
Sales: $5,000,000 to $10,000,000 Est. 1913
Emp: 27
20,000 Sq. Ft. 10 Acres
Customized & regular concrete products
SIC 3272
Pres: J.C. Henry
VP: E.P. Henry
Sec: Francis D. Weeks
Plant Mgr: Michael Kopie
Banks:
First People Bank

MINUTEMAN PRESS
142 S. Broad St.
Woodbury, NJ 08096
Phone: 609-853-0669
Sales: Up to $1,000,000
Emp: 5
Offset printing
SIC 2752
Pres: Leonard Rizzolo

POLYREZ CO., INC.
Box 320, S. Columbia & Railroad
Woodbury, NJ 08096
Phone: 609-845-1813
Est. 1950
Emp: 45
◆Phenolic Resins, Cashew Derivatives
★SIC 2821
Pres: N. R. Elliott
Treas: R. Berk
Sls Mgr: G. K. Smith
PA: B. Rizzo
Res Dir: J. Findlay
Plant Mgr: J. Washington
Bank:
Margan Guaranty Trust of N.Y.

SHELL CHEMICAL CO.
Mantua Grove Rd., Box 700
Woodbury, NJ 08096
Phone: 609-423-7900
Telex: 4234960
Sales: $10,000,000 and over Est. 1962
Emp: 200
100,000 Sq. Ft. 200 Acres
▲Polypropylene plastic, for extrusion, spun fiber & injection molding
SIC 2821, 3079
Compt: Lyle Stanley
PA: F.J. Izzo
Pers Mgr: L.D. McKinney
Plant Mgr: T. H. Wood
SD: L.J. Stanford
Plant Eng: L.R. Palme
MM: L.E. Tinkler
Corporate Headquarters:
TX: Houston, 241-6161

WOODBURY HEIGHTS
Telephone Area Code-609

AERO PLATING INC.
661 S. Evergreen Ave.
Woodbury Hts., NJ 08097
Phone: 609-848-7150
Sales: Up to $1,000,000 Est. 1980
Emp: 18
20,000 Sq. Ft.
Electroless nickel plating
SIC 3471
Partner: Thomas Kennedy
Partner: John Persic
Partner: Steve Voelinger
Pres: Thomas Kennedy
Exec VP: John Persic
Sec: Steve Voelinger
Treas: Steve Voelinger
Compt: John Persic
OM: Emily Bailey

CONCORD ROOF TRUSS CO., INC.
432 S. Evergreen Ave.
Woodbury Hts., NJ 08097
Phone: 609-845-3848
Emp: 14
Wood trusses
SIC 2439
Pres: Richard Phalines
Sec: John Gligor
Treas: John Gligor

MIDDLE ATLANTIC MILLWORK CO.
Chestnut Ave.
Woodbury Heights, NJ 08097
Phone: 609-848-8000
Sales: $5,000,000 to $10,000,000
Emp: 171
Building products
SIC 2431
Pres: William Costello

HUDSON COUNTY

BAYONNE
Telephone Area Code-201

ACE PRINTING CENTER
711 Broadway
Bayonne, NJ 07002
Phone: 201-436-6647
Sales: Up to $1,000,000 Est. 1944
Emp: 7
Printing, offset
SIC 2751
Owner: H. B. Lazare

AIRFLYTE ELECTRONICS CO.
56 New Hook Rd.
Bayonne, NJ 07002
Phone: 201-436-2230
Sales: $1,000,000 to $5,000,000 Est. 1952
Emp: 75
19,000 Sq. Ft. 2 Acres
▲Slip rings & rotary components
SIC 3621
Pres: Ben Novy
VP: John Piret
Sec: Ed Maceiko
Treas: John Piret
Ch Eng: George Hennicke
Bank:
Commercial Trust Co. of NJ
Bayonne, NJ

ATLANTIC CEMENT CO. INC., OF NEWMONT MINING CORP.
Box 273
Bayonne, NJ 07002
Phone: 201-437-2575
Emp: 14
Bulk cement
SIC 3297
Pres: J. L. Gordan
Exec VP: Louis U. Spellman
VP: Arthur C. Thompson

Plant Eng: T.F. Millea
Bank:
Commercial Trust Co.
Bayonne, NJ
DE: Wilmington

IDEAL ALUMINUM PRODUCTS CO.
100 W. Seventh St.
Bayonne, NJ 07002
Phone: 201-437-4300
Emp: 100
75,000 Sq. Ft.
Aluminum storm windows & doors
SIC 3442
Pres: Helen Rogow
Exec VP: Louis Rogow
Sec: David Schneiderman
Ad Mgr: Vance McClear

JEFFERSON ELECTRIC CORP.
Bldg. 15-A Army Base
Bayonne, NJ 07002
Phone: 201-437-8050
Emp: 20
5,000 Sq. Ft.
◆Marine electrical contracting & repair
SIC 3731
Pres: T. J. Briskey
OM: Gerard Costante

JERSEY BOLT, DIV. OF PORTLAND BOLT
21 Humphreys Ave.
Bayonne, NJ 07002
Phone: 201-339-7400
800-221-1740
Sales: $1,000,000 to $5,000,000
Emp: 25
60,000 Sq. Ft.
Bolts, rods, spikes, heavy construction hardware
SIC 3452
Pres: Melvin Peters
Sls Mgr: Brian Sonnenburg
Plant Mgr: James O'Donnell

JERSEY PRINTING CO., INC.
111 Linnet St.
Bayonne, NJ 07002
Phone: 201-436-4200
Sales: $5,000,000 to $10,000,000
Est. 1910
Emp: 150
45,000 Sq. Ft.
Printing, letterpress & corporate publications
SIC 2721, 2751
Pres: Bernard M. Shlossman
Exec VP: Steven Schnoll
Treas: Bernard Shlossman
GM: Lloyd Goldberg
PA: Irving Derfel
Traf Mgr: Chris Salomon

KAYDELL SPORTSWEAR INC.
41 E. 21 St.
Bayonne, NJ 07002
Phone: 201-436-7136
Sales: Up to $1,000,000 Est. 1972
Emp: 15
3,000 Sq. Ft.
Blouses
SIC 2331
Pres: Richard Mondello
VP: Catherine Mondello

KEENEN-CASHMAN CO.
50th St. & Ave. E.
Bayonne, NJ 07002
Phone: 201-339-2000
Pipe, valves & fittings
SIC 3494

KENRICH PETROCHEMICALS INC.
140 E. 22nd St.
Bayonne, NJ 07002
Phone: 201-823-9000
Sales: $10,000,000 and over
Est. 1949
Emp: 90
60,000 Sq. Ft. 6.5 Acres
▲Resins, plasticizers, dispersions & titanate coupling agents, chemicals
★SIC 2816, 2821, 2851, 2869
Ch Bd: Oscar A. Spiegelhalder
Pres: Salvatore J. Monte
CEO: Eric A. Spiegelhalder
VP Technology: Gerald Sugerman, PhD
VP Opn: Charles A. Lucania
VP Fin: William P. Athas
VP Sales: O.B. Samler
Natl Sls Mgr Coatings: D. Busker
Plant Mgr: Raja Dakwala
MM: Arthur Elling
District Sls Mgr: Jeffrey J. Buda
Lab Mgr: Gregory Kornutik
Buyer: Jim Harris
Sls Rep: Thomas J. Schirripa

KITZIS MANUFACTURING CO.
1222 J.F. Kennedy Boulevard
Bayonne, NJ 07002
Phone: 201-339-6070
Emp: 32
Women's Apparel
SIC 2339
Owner: E. Kitzis

KONIGSBERG & SON, I.M.
117 Prospect Ave.
Bayonne, NJ 07002
Phone: 201-436-2913
Emp: 50
Bricks
SIC 3251
Owner: Mark Konigsberg

KORENSTEIN, LEON
500 Ave. A
Bayonne, NJ 07002
Phone: 201-339-1805
Emp: 33
Children's Dress Contractor
SIC 2361
Owner: L. Korenstein

MAIDENFORM INC.
154 Ave. E.
Bayonne, NJ 07002
Phone: 201-436-9200
Emp: 1200
▲Bras, Girdles, Panties, Sleepwear, Swimwear
SIC 2342, 2399
Pres: Beatrice Coleman
Exec VP: D. C. Masket
VP: J. Yogman
VP: H. C. Heppen
VP Fin: A. P. Kanner
VP Mkt: M. Kornblatt
Compt: I. Nussbaum
PA: B. Netkin
Pers Mgr: Joseph Farbowitz
Branch Plants:
Perth Amboy, N.J.
Edison, N.J.

MARIE ANN SPORTSWEAR INC.
17-19 E. 27th St.
Bayonne, NJ 07002
Phone: 201-437-6550
Est. 1973
Emp: 25
Ladies' sportswear
SIC 2339
Pres: Nunzio Goglitore

MARIETTA DRESS CO.
477 Ave. C
Bayonne, NJ 07002
Phone: 201-436-6165
Emp: 40
Mfr. of Dresses
SIC 2335
Owner: Marion Deleto

MURALO CO., INC.
148 E. Fifth St.
Bayonne, NJ 07002
Phone: 201-437-0770
Sales: $10,000,000 and over
Emp: 400
▲Paint & paint products
SIC 2851
Pres: Edward F. Norton, Jr.
VP: J. W. Seaborg

NL INDUSTRIES, DIV OF INDUSTRIAL CHEMICALS
40 Ave. A
Bayonne, NJ 07002
Phone: 201-436-8800
Emp: 70
262,700 Sq. Ft. 6.2 Acres
Castor Oil & Castor Oil Derivatives
SIC 2076
VP: C. W. Moore

NORTON & SON INC.
148 E. Fifth St., Box 455
Bayonne, NJ 07002
Phone: 201-437-0770
Outside NJ: 800-631-3440
Est. 1946
Emp: 400
▲Commercial paints
★SIC 2851
Pres: C.P. Lee
VP: E.F. Norton, Jr.
VP: J.M. Seaborg
Sec: E.S. Seaborg
CA: Los Angeles, 685-7220

PDQ PLASTICS INC.
Seven Hook Rd., Box 1001
Bayonne, NJ 07002
Phone: 201-823-0270
Sales: $1,000,000 to $5,000,000
Est. 1969
Emp: 18
50,000 Sq. Ft. 2.5 Acres
▲Polyethylene returnable pallets
SIC 3079
Pres: Leo Nathans
OM: Evelyn M. Nathans
PA: Evelyn M. Nathans

PALMER ASPHALT CO.
196 W. Fifth St.
Bayonne, NJ 07002
Phone: 201-339-0855
ITT Telex: 466-1014; Cable: 466-1014 RISCO UI
Sales: $1,000,000 to $5,000,000
Est. 1932
Emp: 11
22,000 Sq. Ft.
▲Liquid roofing, waterproofing & paving products; cold process asphalt coatings & cements
★SIC 2952
Pres: Alton Adler
VP: Lewis S. Ripps
Bank:
Commercial Trust Co.
Bayonne, NJ

PAM MANUFACTURING CORP.
18 West Twenthith St.
Bayonne, NJ 07002
Phone: 201-823-3441
Emp: 25
Womens dresses
SIC 2335
Pres: Anthony Mariano

PENGAD CO. INC.
55 Oak St.
Bayonne, NJ 07002
Phone: 201-436-5625
Est. 1932
Emp: 66
40,000 Sq. Ft.
Looseleaf binders & book & catalog covers; court, legal, office & computer supplies
SIC 2782
Pres: R. Haftel
VP: F. Piacente
1106 E. Seymour St.
IN: Muncie
2837 South East Ave.
CA: Fresno

PRIDE BAKING CO.
460 Broadway
Bayonne, NJ 07002
Phone: 201-436-7557
Emp: 40
13,400 Sq. Ft.
Bread, Rolls, Cakes, Pastries, Cookies
SIC 2051
Partner: Norman G. Troum
Partner: Morton Troum
Partner: Leonard Troum
Plant Mgr: Theodore Wall

RELIANCE CHEMICAL PRODUCTS CO.
64 Ave. A, Box 336
Bayonne, NJ 07002
Phone: 201-437-4144
Sales: $1,000,000 to $5,000,000
Est. 1962
Emp: 9
32,500 Sq. Ft.
▲Defoamers, general defoamers, silicone emulsions, water & silicone repellents, textile wax emulsions
SIC 2843, 2899
VP: Paul J. Lombardi
Pres: Joseph P. Lombardi
Plant Mgr: Vincent Russo
Banks:
Commercial Trust Co.

ROBIN CRAVAT INC.
698 Broadway
Bayonne, NJ 07002
Phone: 201-436-4368
Emp: 21
2,500 Sq. Ft.
◆Necktie Contracting
SIC 2323
Pres: E. Thaler
Sec: I. Thaler
Plant Mgr: E. Thaler

RONA PEARL, AN ASSOCIATE OF E. MERCK
Four Hook Rd., Box 81
Bayonne, NJ 07002
Phone: 201-437-0800
Telex: 129286
Sales: $10,000,000 and over
Emp: 35
◆Natural & synthetic pearl essence; pearlescent pigments for cosmetics
★SIC 2816
Pres: Michael O'Brien
VP Opn: Mark Nagengust

ROYAL METAL FAB. CO., INC.
Box 351
Bayonne, NJ 07002
Phone: 201-339-5770
Emp: 9
8,000 Sq. Ft. 1 Acres
●Steel Fabricating & Heavy Bending
SIC 3443
Pres: A. Teleffsen
VP: B. Olsen
Sec: A. Visaggio

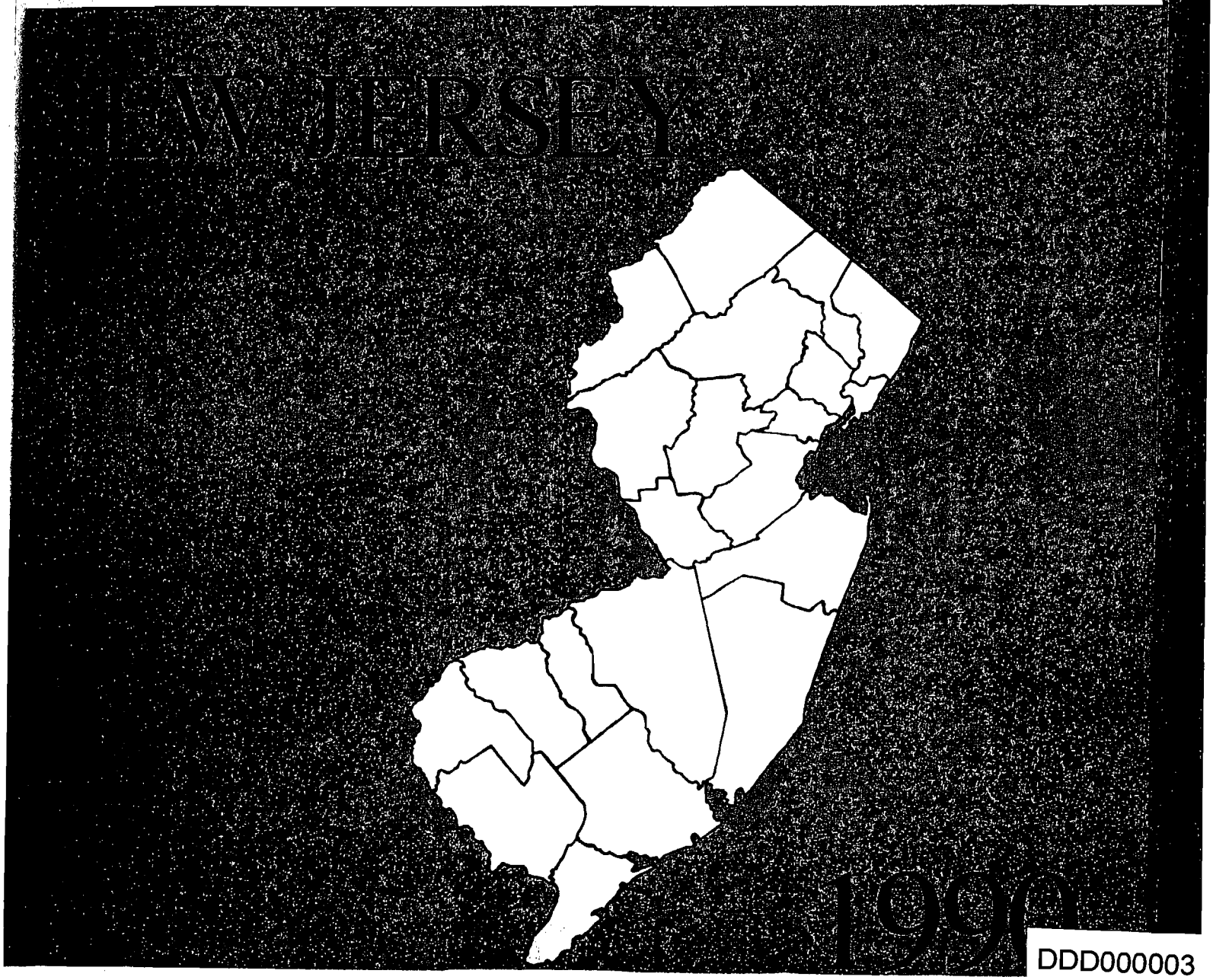
S & W PRECISION TOOL
43 Evergreen St.
Bayonne, NJ 07002
Phone: 201-437-8072
Sales: $1,000,000 to $5,000,000
Est. 1970
Emp: 15
Metal stamping
SIC 3469
Pres: J. Wielgus
VP: H. Somers

SELECT-A SPRING CORP./MULTI-PARTS INC.
39 Avenue C
Bayonne, NJ 07002
Phone: 201-339-0797
800-526-1443, Sales office
Sales: Up to $1,000,000 Est. 1962
Emp: 12
Springs; screws, washers, nuts, bolts, & clips
SIC 3452, 3493
Pres: Irene McFadden
VP: Carol Pfeiffer
GM: Carol Pfeiffer
Bank:
Commercial Trust Co.
Bayonne, NJ

SHALHOUB BROS.
119 W. 53rd St.
Bayonne, NJ 07002
Phone: 201-436-1529
Emp: 1
Schiffli Machine Embroideries
SIC 2397
Owner: A. J. Shalhoub
Pres: A. J. Shalhoub

SHARP BROTHERS INC.
201 Orient St.
Bayonne, NJ 07002
Phone: 201-339-0404
Sales: Up to $1,000,000 Est. 1910
Emp: 30
10,000 Sq. Ft.

MacRAE'S STATE INDUSTRIAL DIRECTORY



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VIOLET PACKING CO.
123 Railroad Ave.
Williamstown, NJ 08094-1639
Phone: 609-629-7428
Sales: $5,000,000 to $10,000,000
Emp: 50
Canned Sauce
★SIC 2033
Pres: J. V. Sclafani

WOODBURY
Telephone Area Code-609

CONSTITUTION CO., THE
58 S. Broad St., Box 315
Woodbury, NJ 08096-4629
Phone: 609-845-0225
Sales: $10,000,000 and over
Emp: 5
Commercial Printing
SIC 2759
Pres: Lewis C. Robinson
Sec: Marie A. Robinson
Treas: Marie A. Robinson

EVERGREEN LUMBER CO., INC.
640 S. Evergreen Ave.
Woodbury, NJ 08096-3512
Phone: 609-845-2828
Sales: Up to $1,000,000 Est. 1972
Emp: 11
7,000 Sq. Ft.
Lumber & millwork
SIC 2431, 2491
Pres: Samuel Marcone
Treas: John Pasquini

FORWAY INDUSTRIES INC., SUB. OF SPECTRONICS INC.
122 Green Ave.
Woodbury, NJ 08096-2728
Phone: 609-848-9336
Sales: $10,000,000 and over
Emp: 40
30,000 Sq. Ft.
Welded Assemblies, Sheet Metal, Precision Machined Parts
SIC 3593, 3599
Pres: Jacob Farber
Exec VP: William Blau
Sls Mgr: J. De Fay

GLOUCESTER COUNTY TIMES, THE
309 S. Broad St.
Woodbury, NJ 08096-2406
Phone: 609-845-3300
Sales: $10,000,000 and over Est. 1897
Emp: 150
22,000 Sq. Ft. 4 Acres
◆Daily & weekly newspaper publishing; commercial printing; direct mail
SIC 2711, 2759, 7331
Pub: Dean Singleton
Pres: Dean Singleton
Compt: Frank Gargano
VP: Walter Holt
Ed: David Fiedler

HENRY CORP., E.P.
201 Park Ave., Box 615
Woodbury, NJ 08096-3523
Phone: 609-845-6200
Sales: $10,000,000 and over Est. 1913
Emp: 40
20,000 Sq. Ft. 10 Acres
Mfr. & dist. customized & regular concrete products, interlocking concrete pavers, full line of masonry materials
SIC 3271, 3272
Pres: J.C. Henry, Jr.
VP Mkt: J.C. Henry III
Sec: Marianne W. Anzaldo
VP Paving Operation: A. Shafer Henry
VP Opn: John M. Poignard
Banks:
First People Bank
NJ: Vineland, 825-6200

MERCURY TOOL & MANUFACTURING CO.
180 N. Hurffville Rd.
Woodbury, NJ 08096-3868
Phone: 609-228-6166
Sales: $10,000,000 and over Est. 1958
Emp: 77
21,000 Sq. Ft. 9.4 Acres
Mfr. plastic molds for tool manufacturing
SIC 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3432
Pres: Joseph Pisko
Sls Mgr: Hal Greiner
Banks:
Princeton Bank, Highland
Blackwood, NJ

MINUTEMAN PRESS
142 S. Broad St.
Woodbury, NJ 08096-2430
Phone: 609-853-0669
Sales: Up to $1,000,000
Emp: 5
Offset printing
SIC 2752
Pres: Leonard Rizzolo

OLD FASHIONED CHOCOLATE CHIP (BRANCH OLD FASHIONED CHOCOLATE CHIP, EATONTOWN, NJ)
Deptford Mall St.
Woodbury, NJ 08096
Phone: 609-845-8910
Sales: Up to $1,000,000 Est. 1977
Emp: 25
2,500 Sq. Ft.
Cookies
SIC 2052
Pres: Harold I. Smith
VP: Arnold Freedman
PA: Harold I. Smith
Ad Mgr: Harold I. Smith
Bank:
Heritage Bank
Deptford, NJ
NJ: Eatontown, 544-8202

RCA DISTRIBUTOR & SPEC. PRODUCT, DIV. OF RCA
2000 Clements Br. Rd.
Woodbury, NJ 08096-2010
Phone: 609-541-3636
Sales: Up to $1,000,000
Emp: 125
Receiving tubes, picture & ind. tubes, semiconductors, electronic parts
SIC 3264, 3625, 3671, 3672, 3674, 3679, 3695
VP: Division - E. A. Boschetti
VP: Merchandising - D. R. Weisenstein
VP Sales: H. L. Craton
Ad Mgr: A. D. Ricketti

WOODBURY HEIGHTS
Telephone Area Code-609

AERO PLATING INC.
661 S. Evergreen Ave.
Woodbury Heights, NJ 08097-1005
Phone: 609-848-7150
Sales: Up to $1,000,000 Est. 1980
Emp: 18
20,000 Sq. Ft.
Electroless nickel plating
SIC 3471
Partner: Thomas Kennedy
Partner: John Persic
Partner: Steve Voelinger
Pres: Thomas Kennedy
Exec VP: John Persic
Sec: Steve Voelinger
Treas: Steve Voelinger
Compt: John Persic
OM: Patricia A. Tordella

CONCORD ROOF TRUSS CO., INC.
432 S. Evergreen Ave.
Woodbury Heights, NJ 08097-1003
Phone: 609-845-3848
Sales: $1,000,000 to $5,000,000
Emp: 14
Wood trusses
SIC 2439
Pres: Richard Phalines
Sec: John Gligor
Treas: John Gligor

HUDSON COUNTY

BAYONNE
Telephone Area Code-201

ACE PRINTING CENTER
711 Broadway
Bayonne, NJ 07002-4744
Phone: 201-436-6647
Sales: Up to $1,000,000 Est. 1944
Emp: 7
Printing, offset
SIC 2759
Owner: H. B. Lazare

AIRFLYTE ELECTRONICS CO.
56 New Hook Rd.
Bayonne, NJ 07002-5020
Phone: 201-436-2230
Sales: $1,000,000 to $5,000,000 Est. 1952
Emp: 75
19,000 Sq. Ft. 2 Acres
▲Mfr. slip rings & rotary components
SIC 3621
Pres: John Piret
VP: Ed Maceiko
Sec: Ed Maceiko
Treas: John Piret
Ch Eng: George Hennicke
Bank:
Commercial Trust Co. of NJ
Bayonne, NJ

ALLGOOD TERMINAL & WAREHOUSES
6369 Hook Rd., Box 425
Bayonne, NJ 07002
Phone: 201-339-8500
Warehousing services
SIC 4226

AMERADA HESS CORP.
Foot of E. 22nd St.
Bayonne, NJ 07002
Phone: 201-437-1017
Emp: 25
Dist. oil & petroleum products
SIC 4925

AMERICAN UNIVERSAL INC.
163 Ave. A
Bayonne, NJ 07002
Phone: 201-437-4600
Dist. tablecloths, placemats, napkins, etc.
SIC 5023

ANGUS TANK CLEANING CORP.
1 Ingham Ave.
Bayonne, NJ 07002-4249
Phone: 201-437-7853
Emp: 15
Tank cleaning services
SIC 1389

B&H MANUFACTURING CO.
586 Ave. A
Bayonne, NJ 07002
Phone: 201-436-3819
Clothing warehousing services
SIC 4226

B A WAREHOUSING INC.
53 Hook Rd.
Bayonne, NJ 07002-5006
Phone: 201-823-4901
Emp: 25
Dist. juniors' & children's apparel accessories
SIC 5137

BAYONNE ALUMINUM CORP.
39 E. 51st St.
Bayonne, NJ 07002-4116
Phone: 201-823-0387
Emp: 15
Mfr. aluminum products
SIC 3354

BAYONNE BLOCK CO. INC.
Hook Rd. at Avenue H
Bayonne, NJ 07002
Phone: 201-339-8585
Sales: $10,000,000 and over
Emp: 18
Concrete & Cinder Block
SIC 3271
Pres: Salvatore Cherchio
Exec VP: John Cherchio
Sec: Richard Cherchio

BAYONNE CHAIN LINK FENCE INC.
1026 Broadway
Bayonne, NJ 07002-4153
Phone: 201-436-1708
Sales: Up to $1,000,000 Est. 1946
Emp: 6
10,000 Sq. Ft.
Chain link fencing
SIC 3446
Pres: Joseph Toscano

BAYONNE FASHIONS
83-91 E. 30th St.
Bayonne, NJ 07002
Phone: 201-339-1607
Sales: $10,000,000 and over Est. 1968
Emp: 137
25,000 Sq. Ft.
Mfr. women's lingerie
SIC 2342
Pres: I. Mergel
Bank:
Fidelity Union Bank
Bayonne, NJ

BAYONNE LUMBER
37 Linnet St.
Bayonne, NJ 07002-4355
Phone: 201-339-0717
Emp: 25
Dist. lumber & building supplies
SIC 5031, 5032, 5033, 5039

BAYONNE NIPPLE CO.
Foot of E. 33rd St.
Bayonne, NJ 07002
Phone: 201-339-1810
800-526-1425
Sales: $1,000,000 to $5,000,000 Est. 1934
Emp: 40
40,000 Sq. Ft. 5 Acres
▲Mfr. & dist. malleable & cast iron screwed fittings including pipe nipples & merchant couplings
SIC 3498
Pres: George A. Rubine
VP & GM: Fred Walters

BAYONNE PLUMBING SUPPLY CO.
250 Ave. E
Bayonne, NJ 07002
Phone: 201-339-8000
Dist. plumbing supplies
SIC 5074

BAYONNE STAINLESS PRODUCTS
98 Ave. E
Bayonne, NJ 07002
Phone: 201-339-5655
Mfr. restaurant stainless steel products
SIC 3449, 3499

BEACON OIL CO.
746 Ave. E
Bayonne, NJ 07002
Phone: 201-437-0500
Dist. & deliner home heating oil
SIC 4925

BENDER BROS. SPORTSWEAR INC.
744 Broadway
Bayonne, NJ 07002-3948
Phone: 201-339-2654
Sales: Up to $1,000,000 Est. 1944
Emp: 50
Women's outerwear
SIC 2339
Exec VP: Seymour Bender

BERGEN POINT BRASS FOUNDRY INC.
179-185 West Fifth Street
Bayonne, NJ 07002
Phone: 201-339-1351
212-367-6738
Emp: 55
Non-ferrous castings, aluminum, brass bronze, sand castings, foundry work, etc.
SIC 3356, 3363, 3364, 3365, 3366, 3369
Pres: A. W. Lindberg, Jr.
Exec VP: H. E. Lindberg
Sec: Rose Marie Lindberg
OM: Cynthia Faser
PA: Lee Fayley
Plant Mgr: Machine Shop-Thaddius Hojnowski
PF: Foundry Foreman-Joseph Nagy

BEST FOODS INC.
99 Ave. A
Bayonne, NJ 07002
Phone: 201-339-6800
Mfr. mayonnaise & food products
SIC 2035

BLUE CIRCLE ATLANTIC, INC.
Box 273
Bayonne, NJ 07002
Phone: 201-437-2575
Emp: 14
Bulk cement
SIC 3297
Pres: John W. Bourdeaux
Exec VP: Sprague S. Silver
VP: William J. Franklin
VP Fin: Fred Kemph
Treas: Fred Kemph
OM: Ms. Germaine C. Bohrman
Sls Mgr: Bernard J. Clarke
Corporate Headquarters:
CT: Stamford, 327-3100
GA: Marietta

BURNETT ELECTRIC CO.
626 Ave. E
Bayonne, NJ 07002
Phone: 201-339-1501
Electrical contractors
SIC 1731

C&L WAREHOUSE DITRIBUTION CORP.
50 Pulaski St.
Bayonne, NJ 07002-5001
Phone: 201-436-4160
Emp: 25
Garments warehousing services
SIC 4226

CASCHEM INC.
40 Ave. A
Bayonne, NJ 07002
Phone: 201-858-7900
Mfr. castor oil derivatives
SIC 2076

DIAL PRODUCTS CO.
Box 456
Bayonne, NJ 07002-4334
Phone: 201-437-0720
Sales: Up to $1,000,000 Est. 1953
Emp: 25
12,000 Sq. Ft.
▲Mfr. magnetic brakes, clutches, flexible couplings, solid state miniature power supplies
★SIC 3625
Pres: M. Krull
GM: B. Malen
SALES OUTLET:
MINN.: St. Paul, 645-4647

DISCOVERIES INC.
235 W. First St.
Bayonne, NJ 07002-5251
Phone: 201-858-2500
FAX: 201-858-3189
Sales: $1,000,000 to $5,000,000 Est. 1912
Emp: 51
20,000 Sq. Ft.
◆Displays for s;tore w;indows & corp.s
SIC 3993
Pres: Frank Latino
GM: Cynthia Rush

DOMENICO BUS SERVICE
71 New Hook Access Rd.
Bayonne, NJ 07002
Phone: 201-339-6000
Passenger & charter bus services
SIC 4141, 4173

DOW CHEMICAL CO. U.S.A., TEXAS DIV.
Two Commerce St., Box 13
Bayonne, NJ 07002-5019
Phone: 201-823-2800
Sales: Up to $1,000,000
Emp: 38
100,000 Sq. Ft. 19 Acres
Anti-freeze
SIC 2899
Pers Mgr: F. A. Drummond
Plant Mgr: Mathew J. Burvett
MI: Midland

DUNBAR SALES CO., INC.
39 Ave. C
Bayonne, NJ 07002
Phone: 201-437-6500
Sales: $1,000,000 to $5,000,000 Est. 1962
Emp: 15
20,000 Sq. Ft. 3 Acres
◆Adhesives, protective coatings, sealants
SIC 2851, 2891

EFKA PLASTIC CORP.
163 Ave. A
Bayonne, NJ 07002
Phone: 201-437-4600
Sales: $10,000,000 and over Est. 1949
Emp: 150
105,000 Sq. Ft.
◆Mfr. table cloths, place mats, dollies, scarves, printing, embossing, laminating of plastic sheeting
★SIC 2392, 2759, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3432
Pres: A. Katz
Exec VP: G. Katz
Compt: M. Bitton
Sls Mgr: S. Rothbart
PA: M. Bitton
Traf Mgr: M. Glass
Plant Mgr: Bob Hess
PF: R. Greico
Bank:
Commercial Trust Co. of NJ
Jersey City, NJ
Branches:
New York City, N.Y.

ELDER & JENKS INC., DIV. OF: MURALO CO.
148 E. Fifth St.
Bayonne, NJ 07002-4252
Phone: 201-437-0770
Sales: $5,000,000 to $10,000,000 Est. 1793
Emp: 40
14,520 Sq. Ft.
▲Mfr. brushes & rollers
★SIC 3991
VP: Edward F. Norton, Jr.
VP Opn: Michael J. Norton
Banks:
Commercial Trust Company of New Jersey

EXXON CO., USA, BAYONNE PLANT
250 E. 22nd St.
Bayonne, NJ 07002
Phone: 201-858-5555
Sales: $10,000,000 and over
Emp: 50
Petroleum, lubricants, fuels, solvents, waxes
SIC 2899, 2911
Pers Mgr: R.W. Smith
Plant Mgr: C.B. Saunders

FARINA PATIO INC.
171 West 53rd St.
Bayonne, NJ 07002-2166
Phone: 201-436-4339
Sales: $1,000,000 to $5,000,000 Est. 1945
Emp: 22
20,000 Sq. Ft.
Concrete patio
SIC 3272
Pres: Bernard Farina
VP: Julia Farina
VP: Mary Farina
Sec: Anthony J. Farina

FLORTEK CORP.
39 West 55th St.
Bayonne, NJ 07002-4112
Phone: 201-436-7700
Emp: 50
Sample Books for Carpet Mfgs.
SIC 2789
Pres: Warren Harris

GARDEN STATE CONTAINER CORP.
Constable Hook Rd., Box 282
Bayonne, NJ 07002
Phone: 201-339-9100
NY: 212-943-5410
Sales: $10,000,000 and over Est. 1949
Emp: 140
220,000 Sq. Ft. 11 Acres
Mfr. shipping cartons, displays, die cuts, floor stands, multicolor printing; design specialists
SIC 2653
Pres: Sol Kleiner
Exec VP: Irving Perfit
VP Sales: Fred Jacoby
Compt: Richard Onderdonk
GM: Joel Kleiner
OM: Richard Onderdonk
Sls Mgr: Julius Sosnoff
Traf Mgr: Tony Lopez
Pers Mgr: Richard Onderdonk
Plant Mgr: Paul Lafaire
PF: Paul Lafaire
SD: Fred Lett
Ch Eng: Leizer Kaj
Plant Eng: Szulim Kaj
Bank:
Trust Company of New Jersey
Jersey City, NJ
SALES OFFICE:
NY: New York, 943-5410

GARDEN STATE CONVERTERS INC.
63-65 N. Hook Rd.
Bayonne, NJ 07002
Phone: 201-823-3270
Sales: $5,000,000 to $10,000,000
Emp: 43
185,000 Sq. Ft. 8 Acres
Paper converting to the trade
SIC 2679
Pres: L. Diamond
VP: D. Appelbaum
Compt: V. Barone
GM: D. Meahl
Plant Eng: C. Barbely

GENERAL IRON WORKS
12 W. Ninth St.
Bayonne, NJ 07002-2504
Phone: 201-436-1077
Emp: 25
Mfr. ornamental iron work

GORDON TERMINAL SERVICE CO. OF N.J., INC.
Two Hook Rd.
Bayonne, NJ 07002
Phone: 201-437-8300
TWX: 710-729-4484
Sales: Up to $1,000,000 Est. 1964
Emp: 80
1,200,000 Sq. Ft. 30 Acres
Mfr. one quart oil bottle
★SIC 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3432
VP Opn: J.D. Gordon
OM: C.W. Keating
Plant Mgr: C. Kessler
Bank:
Mellon Bank
Pittsburgh, PA
Corporate Headquarters:
PA: Chester, 876-1941
Pittsburgh, 331-9410

HOBART PRESS
153 Hobart Ave.
Bayonne, NJ 07002-4338
Phone: 201-339-8262
Sales: $10,000,000 and over
Emp: 15
Offset & letterpress job printing services
SIC 2752, 2759

HOLIDAY TREE & TRIM CO.
750 Broadway
Bayonne, NJ 07002-3948
Phone: 201-437-2222
Sales: $5,000,000 to $10,000,000 Est. 1959
Emp: 40
18,000 Sq. Ft.
●Christmas trees, garlands, balls
★SIC 3999
Owner: Sebastian Bartold
Partner: Ralph Minchello
Partner: Phillip Minchello

HUNT WESSON FOOD CO.
160 E. 22nd Street
Bayonne, NJ 07002-5005
Phone: 201-339-0800
Sales: Up to $1,000,000
Emp: 125
Vegetable Oils
SIC 2076
Pres: W. Hood

ICI AMERICAS INC.
229 E. 22nd St.
Bayonne, NJ 07002-5002
Phone: 201-858-8903
Sales: Up to $1,000,000
Emp: 175
37 Acres
Chlorinated rubber, chlorinated wax, polyurethanes & chemicals
SIC 2819, 2821, 2869, 2899
Compt: E.L. Crew
GM: Joseph Gallagher
PA: S.R. White
Traf Mgr: W.C. Lane
Pers Mgr: N. Perna
Res Dir: J. Buford
Plant Eng: T.F. Millea
Bank:
Commercial Trust Co.
Bayonne, NJ
DE: Wilmington

IDEAL ALUMINUM PRODUCTS CO.
100 W. Seventh St.
Bayonne, NJ 07002-1133
Phone: 201-437-4300
Sales: $10,000,000 and over
Emp: 100
75,000 Sq. Ft.
Aluminum storm windows & doors
SIC 2431, 3442
Pres: Helen Rogow
Exec VP: Louis Rogow
Sec: David Schneiderman
Ad Mgr: Vance McClear

JERKEL PLASTICS, INC.
63-69 Hook Rd.
Bayonne, NJ 07002
Phone: 201-436-6662
FAX: 201-436-6121
Sales: $10,000,000 and over Est. 1969
Emp: 75
40,000 Sq. Ft. 4 Acres
▲Plastic compacts & bottles
SIC 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3432
Pres: Jerry Mecca
Treas: Peggy Careccio
CEO: John A. Mazzanti
VP: Anna Battaglino
Sec: Helen Mecca
Bank:
National Westminster Bank
Denville, NJ

JERSEY PRINTING CO., INC.
111 Linnet St.
Bayonne, NJ 07002-4321
Phone: 201-436-4200
FAX: 201-436-9248
Sales: $10,000,000 and over Est. 1910
Emp: 156
78,000 Sq. Ft.
Printing, Prepress & Binding, Corporate publications, magazine and commercial printing
SIC 2721, 2759
Pres: Steven Schnoll
CEO: Arthur Shlossman
Treas: Bernard Shlossman
GM: Lloyd Goldberg
PA: Charles Sgnatrito
Traf Mgr: Bill Jackson
Ch Bd: Bernard M. Shlossman
Bank:
First Fidelity Bank
Newark, NJ

KENRICH PETROCHEMICALS INC.
140 E. 22nd St.
Bayonne, NJ 07002-0032
Phone: 201-823-9000
FAX: 201-823-0691; 800-LICA-KPI; TELEX: 12-5023
Sales: $10,000,000 and over Est. 1949
Emp: 90
60,000 Sq. Ft. 6.5 Acres
▲Resins, plasticizers, dispersions & titanate coupling agents, zirconate coupling agents, aluminate coupling agents, chemicals
★SIC 2816, 2819, 2821, 2851, 2869

Ch Bd: Oscar A. Spiegelhalder
Pres: Salvatore J. Monte
CEO: Eric A. Spiegelhalder
VP Technology: Gerald Sugerman, PhD
VP Opn: Charles A. Lucania
VP Fin: Thomas Zanetti
VP Mfg: Raja Dakwala
VP: Erika G. Monte
Environmental Affairs Mgr.: Thomas M. Putufka
PA: Thomas A. Dalfonso
District Sls Mgr: Jeffrey J. Buda
Lab Mgr: Gregory Kornutik
Buyer: Jim Harris
Sls Rep: Thomas J. Schirripa

KONIGSBERG & SON, I.M.
117 Prospect Ave.
Bayonne, NJ 07002-4570
Phone: 201-436-2913
Emp: 50
Bricks
SIC 3251
Owner: Mark Konigsberg

LAY-CEE PLASTICS
163 Ave. A
Bayonne, NJ 07002
Phone: 201-437-4600
Mfr. plastic household products
SIC 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3432

MURALO CO., INC.
148 E. Fifth St.
Bayonne, NJ 07002-4252
Phone: 201-437-0770
Sales: $10,000,000 and over
Emp: 400
▲Paint & paint products
★SIC 2851
Pres: Edward F. Norton, Jr.
VP: C.L. Lee

MURPHY INC., C.J.
222 Ave. E
Bayonne, NJ 07002
Phone: 201-436-3205
Dist. lube & fuel oil
SIC 4932

NATIONAL SODA
32-36 W. 21st St.
Bayonne, NJ 07002
Phone: 201-436-2934
Emp: 25
Dist. soft drinks & non-alcoholic beverages
SIC 5149

NORTON & SON INC.
148 E. Fifth St., Box 455
Bayonne, NJ 07002-4252
Phone: 201-437-0770
Outside NJ: 800-631-3440
Sales: $10,000,000 and over
Est. 1946
Emp: 400
▲Commercial paints
★SIC 2851
Pres: E.F. Norton, Jr.
CA: Los Angeles, 685-7220
IL: Chicago
GA: Atlanta

PDQ PLASTICS INC.
Seven Hook Rd., Box 1001
Bayonne, NJ 07002-1001
Phone: 201-823-0270
800-447-7141; FAX: 201-823-0345
Sales: $1,000,000 to $5,000,000
Est. 1969
Emp: 18
50,000 Sq. Ft. 2.5 Acres
▲Mfr. polyethylene returnable pallets
SIC 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3432
Pres: Leo Nathans
OM & PA: Evelyn M. Nathans
PA: Evelyn M. Nathans

PALMER ASPHALT CO.
196 W. Fifth St.
Bayonne, NJ 07002-1102
Phone: 201-339-8055
FAX: 201-339-8320
Sales: $1,000,000 to $5,000,000
Est. 1932
Emp: 11
22,000 Sq. Ft.
▲Mfr. liquid roofing, waterproofing & paving products; cold process asphalt coatings & cements
★SIC 2952
Ch Bd: Alton Adler
Pres: Lewis S. Ripps
Bank:
UJB/Commercial Trust Co.
Bayonne, NJ

PENGAD CO. INC.
55 Oak St.
Bayonne, NJ 07002-4307
Phone: 201-436-5625
Sales: $10,000,000 and over
Est. 1932
Emp: 66
40,000 Sq. Ft.
Looseleaf binders & book & catalog covers; court, legal, office & computer supplies
SIC 2782
Pres: R. Haftel
VP: F. Piacente
1106 E. Seymour St.
IN: Muncie
2837 South East Ave.
CA: Fresno

POLYTEX PLASTIC CORP.
163 Ave. A
Bayonne, NJ 07002
Phone: 201-437-4600
Dist. plastic tablecloths, shower curtains, placemats, etc.
SIC 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3432

PRIDE BAKING CO.
460 Broadway
Bayonne, NJ 07002-3620
Phone: 201-436-7557
Sales: $10,000,000 and over
Emp: 40
13,400 Sq. Ft.
Bread, Rolls, Cakes, Pastries, Cookies
SIC 2051
Partner: Norman G. Troum
Partner: Morton Troum
Partner: Leonard Troum
Plant Mgr: Theodore Wall

RELIANCE CHEMICAL PRODUCTS CO.
64 Ave. A, Box 336
Bayonne, NJ 07002
Phone: 201-437-4144
Sales: $1,000,000 to $5,000,000
Est. 1962
Emp: 9
32,500 Sq. Ft.
▲Defoamers, general defoamers, silicone emulsions, water & silicone repellents, textile wax emulsions
SIC 2899, 3843
VP: Paul L. Lombardi
Pres: Joseph P. Lombardi
Plant Mgr: Vincent Russo
Banks:
Commercial Trust Co.

RONA PEARL, AN ASSOCIATE OF E. MERCK
Four Hook Rd., Box 81
Bayonne, NJ 07002-5007
Phone: 201-437-0800
Telex: 129286
Sales: $10,000,000 and over
Est. 1947
Emp: 35
◆Natural & synthetic pearl essence; pearlescent pigments for cosmetics and toiletries
★SIC 2816
Pres: Joseph F. Senackerib
Mkt Dir: Judith E. Grossman
Technical Director: Jane C. Hollenberg
Plant & R&D:
NJ: Bayonne
Plants:nl
GA: Savannah
ME: Eastport
Corporate Headquarters:nl
NY: Hawthorne

RONA PIGMENTS INC.
4 Hook Rd.
Bayonne, NJ 07002
Phone: 201-437-0800
Emp: 8
Synthetic Pearl Pigments
SIC 3961
OM: L. Detura
Plant Mgr: N. V. Mullio

S & W PRECISION TOOL
43 Evergreen St.
Bayonne, NJ 07002-4352
Phone: 201-437-8072
Sales: $10,000,000 and over
Est. 1970
Emp: 15
Metal stamping
SIC 3449, 3469
Pres: J. Wielgus
VP: H. Somers

SELECT-A SPRING CORP./MULTI-PARTS INC.
39 Avenue C
Bayonne, NJ 07002
Phone: 201-339-0797
800-526-1443, Sales office
Sales: Up to $1,000,000 Est. 1962
Emp: 12
15,000 Sq. Ft.
▲Dist. springs; screws, washers, nuts, bolts, & clips
SIC 5072, 5085
Pres: Irene McFadden
VP: Carol Pfeiffer
GM: Carol Pfeiffer
Bank:
Commercial Trust Co.
Bayonne, NJ

SHALHOUB BROS.
119 W. 53rd St.
Bayonne, NJ 07002-3116
Phone: 201-436-1529
Emp: 1
Schiffli Machine Embroideries
SIC 2397
Owner: A. J. Shalhoub
Pres: A. J. Shalhoub

SHARP BROTHERS INC.
201 Orient St.
Bayonne, NJ 07002-4342
Phone: 201-339-0404
Sales: Up to $1,000,000 Est. 1910
Emp: 30
10,000 Sq. Ft.
▲Mfr. automatic cutting machines: cheese, yeast extruders, patterns & non-ferrous casting
SIC 3364, 3369, 3449, 3469, 3556, 3565
Pres: Donald A. Sharp
Sec: Janet M. Sharp
Banks:
Commercial Trust Co. of New Jersey
Bayonne, NJ

STANDARD BRONZE CO., DIV. BERGEN POINT BRASS FOUNDRY INC.
179-185 W. Fifth St.
Bayonne, NJ 07002-1102
Phone: 201-339-1351
Sales: $1,000,000 to $5,000,000
Est. 1888
Emp: 55
200,000 Sq. Ft.
▲Brass & bronze assemblies, sub-assemblies, & specialty items including mail boxes & gavels
SIC 3364, 3369, 3449, 3469
Pres: A.W. Lindberg

SWAN MICHIGAN OIL CO.
180 W. Fifth St.
Bayonne, NJ 07002-1102
Phone: 201-437-0440
Sales: $1,000,000 to $5,000,000
Est. 1957
Emp: 9
10,000 Sq. Ft. .33 Acres
Cutting oils & industrial lubricants
SIC 2992
Pres: Alvin A. Birne
GM: Robert S. Hennigan

VINCO CIRCUITS
50 Oak St.
Bayonne, NJ 07002
Phone: 201-437-5364
Emp: 33
Children's Dress Contractor
SIC 2361
Owner: L. Korenstein

EAST NEWARK
Telephone Area Code-201

SEAL-O-MATIC CO.
900 Passaic Ave.
E. Newark, NJ 07029
Phone: 201-481-6500
Outside NJ: 800-631-2072
Sales: $1,000,000 to $5,000,000
Est. 1933
Emp: 60
25,000 Sq. Ft. 10 Acres
◆Mfr. box openers, tape sealers
SIC 2394, 3545, 3952, 3999
Pres: S. Ortner
Exec VP: Lee Chesim
Compt: Seymour Goldman
Sls Mgr: Roy Miller
Plant Mgr: Mel Ortner
Banks:
Midlantic Bank

TRI-CAST FOUNDRY
27 Searing Ave.
E. Newark, NJ 07029
Phone: 201-483-1858
Sales: $10,000,000 and over
Est. 1959
Emp: 8
5,000 Sq. Ft.
Mfr. aluminum & bronze sand castings
SIC 3363, 3364, 3365, 3366
Pres: John Grap
Exec VP: Roderick Fraser

EAST NORTH
Telephone Area Code-201

LARCADA CO., INC., H.
255 Grant Ave.
E. North, NJ 07029-2726
Phone: 201-484-1260
Sales: $1,000,000 to $5,000,000
Est. 1953
Emp: 8
18,500 Sq. Ft.
▲Leather shoes & handbags, tanning oils & other supplies, art

GUTTENBERG
Telephone Area Code-201

BARI KNITTING
6809 Palisade Ave.
Guttenberg, NJ 07093
Phone: 201-854-1856
Emp: 10
Knitted Outerwear
SIC 2253
Pres: D. Rotenberg
VP: S. Rotenberg

FAMAX EMBROIDERY CO., INC.
6805 Jackson St.
Guttenberg, NJ 07093
Phone: 201-868-4013
Sales: Up to $1,000,000 Est. 1967
Emp: 6
2,500 Sq. Ft.
▲Schiffli machine embroideries & emblems
SIC 2395, 2397
Pres: Ida Muttillo

GRUNWERG & SONS, CHARLES
124 68th St., Box 3056
Guttenberg, NJ 07093-3212
Phone: 201-861-0555
Sales: Up to $1,000,000
Emp: 24
▲Schiffli machine embroideries
SIC 2397
Partner: J. Grunwerg
Partner: F. Grunwerg
Partner: R. Grunwerg

L & S MACHINE CO.
6824 Polk St.
Guttenberg, NJ 07093-1823
Phone: 201-869-8173
Sales: $10,000,000 and over
Est. 1981
Emp: 6
▲Feeder for roll leaf printing, press parts & repairs for embroidery industry
SIC 3593, 3599
Pres: Ronald Cappelletti
Treas: Henry Nielsen

Bay. Environmental Pollution D 5/3/1976 p. 1 & 34

Bayonne chemical explosions injure 2 workers

By JUDSON HAND
Staff Writer

BAYONNE—Two chemical workers were injured last night when a series of small explosions rocked a mixing vat in a chemical factory, fire officials said.

The two workers were adding petroleum resin flakes into a 30-foot-high vessel through a portal about 6:50 last night at the Kenrich Petrochemicals Inc. plant located at the foot of E. 22nd Street when the flakes ignited, according to Kenrich President Salvatore Monte.

The flakes were being added to 2,000 gallons of aromatic hydrocarbons heated to 500 degrees inside the vessel, Monte said. "The hyrdrocarbon mixture was about 50 degrees too hot," he said.

One of the men loading the flakes into the vessel, Willesy Christian, 54, of 253 19th St., Newark, remained in fair condition in Bayonne Hospital last night with first- and second-degree burns, according to medical authorities.

The other worker, William Jerido, of 125 Ave. E, Bayonne, was treated at Bayonne Hospital and released, medical authorities said.

Deputy Fire Chief Al Hurley said the explosions inside the vessel occurred about once a minute and lasted from ten to twelve minutes.

"There were very loud bangs," Hurley said. "The whole building shook each time it happened."

Hurley said firefighters extinguished a burning piece of insulation surrounding the reactor vessel.

The incident involved relatively non-toxic materials which posed no threat to anyone outside the mixing vessel area, according to Environmental Specialist Gregory Olds of the Hudson Regional Health Commission (HRHC).

"About the only way the stuff could make you sick would be if you drank two cups," he said.

Monte said that Sprague Dawley laboratory tests where rats ate the chemical, technically known as a tetramer of Dimethyl Napthylene and commonly known as Kenflex, showed the amount needed to kill half the animals was four times greater than the amount of aspirin needed.

Ironically, the accident occurred while plant officials were experimenting with a safer method of manufacturing Kenflex, which is used in the manufacture of rubber goods such as automotive ignition wire insulation.

Workers recently started to use the mixing vessel in which the flakes ignited to manufacture Kenflex, said Monte.

The process was being switched to a new mixing vessel in order to create a closed system in which waste products would not be vented into the surrounding air, Monte said.

Kenrich officials expressed concern over how the incident would be described by the news media. Monte insisted that the resin flakes did not explode but "popped."

"We're standing in a goldfish bowl around here after the Elizabeth fire and leak at ICI Americas," he said. "Three years ago this would have just been another industrial accident."

Monte, perhaps the city's most outspoken chemical industry advocate, had met only nine days ago with Mayor Dennis P. Collins and several other local chemical company executives to discuss how officials should deal with the media during an emergency.

Bay--Industries--Kenrich Petrol Chemical Co.

D. 8-27-77 Pg 3

3 badly burned in Bayonne

An industrial accident yesterday hospitalized three Bayonne men with severe chemical burns.

One man—with burns on 40-60 per cent of his body—was transferred to the burn unit at St. Barnabas Hospital, Livingston.

The condition of Dong Ik Cho, 42, of 72 W. 25th st. was not available, hospital officials said. Conditions on burn patients are not released until after the patient has been hospitalized 24 hours, officials said.

Both Charles Lucania, 27, of 214 Avenue A, and Willocy Christain, 52, of 253 S. 19th st., were reported in satisfactory condition in Bayonne Hospital.

The accident took place at the Kenrich Petrol Chemical Co. in Bayonne when one of the chemical processes reacted bizarrely—shooting burning chemicals into the air and onto the three men.

Cho, the laboratory chemist, received burns on both the front and back of his body. He tried to run away from the scalding chemicals, but ran the wrong way.

Lucania, the production manager, and Christain ran the right way and were only struck on their legs with the chemicals. Christain was burned on both legs and both feet. Lucania was only burned in the feet and ankle areas.

The process that misfired is a usual one at the chemical plant, Lucania told fire prevention officials.

Water, caustic soda and cumyl phenol are combined to create an end product which the company sells. The process was successfully completed and the mixture had cooled down to 200 degrees, Lucania said.

As usual, the mixture was then blended. Instead of everything going smoothly, the reaction took off. Chemicals boiled out of the small manhole cover at the top.

The accident took place around 8:30 a.m. yesterday at the plant, which is located at the foot of E. 22nd st.

The plant was the site of a death five years ago when a man mixing chemicals had the batch blow up in his face.

Robert Burns, 37, died in Bayonne Hospital following that accident on Feb. 23, 1972.

Plant officials are investigating to determine what caused yesterday's accident.

...tment ...ought

...al, a local acceptance of the plan ...ired, he said.
...icania said Kenrich would treat its water twice before dumping it into ...ll Van Kull.
...e construction of the treatment would include a collection reser-...blending and settling tanks, an ... lines leading into storm sewers carry the waste into the river, he

...pected to be released from ... week, Monte ... said.
...abas Mospital, ...ivingoton is ...n the state.
... general surgeons and six ...tached to it.
...is is assigned to the burn ...ally trained nurses, physical ...eticians and social service

...ntrols exist for each room ...ecially controlled for each

...ed in April of this year and ...rough treatment ...enters in

DDE000002

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WATER RESOURCES
P. O. BOX CN 029
TRENTON, NEW JERSEY 08625

ARNOLD SCHIFFMAN
DIRECTOR

NOV 19 1981

Dr. Richard A. Baker, Chief
Permits Administration Branch
Planning and Management Division
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, New York 10278

HUDSON COUNTY [illegible]
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NOV [illegible] 198[illegible]

Kenrich Petrochemicals, Inc.
East 22nd Street
Bayonne, New Jersey 07002

RE: Kenrich Petrochemicals, Inc.
City of Bayonne, Hudson County, New Jersey
NJ0003018

Gentlemen:

This letter serves to inform you that the State of New Jersey, Department of Environmental Protection (hereinafter "NJDEP") hereby certifies, pursuant to Section 401 of the Federal Clean Water Act of 1977 (hereinafter "the Act") the discharge(s) of Kenrich Petrochemicals, Inc., City of Bayonne, Hudson County, New Jersey which is the subject of Federal application No. NJ0003018. Certification for this application was requested by EPA, Region II in a letter dated October 21, 1981. A copy of a preliminary draft permit was not provided with the certification request.

It is understood that public notice of the NJDEP certification will be in conjunction with the notice of the EPA, Region II intent to issue a NPDES permit and that NJDEP will be provided copies of such conjunctive notice and properly advised by EPA of any procedures or actions resulting from such notice.

The above process is intended to satisfy the requirements of Section 401 of the Act regarding public notice for certification.

This letter is also intended to serve as certification according to the provisions of Section 401 of the Act with respect to Sections 301,

New Jersey Is An Equal Opportunity Employer

302, 303, 306, and 307. It is understood that the USEPA will develop a draft permit which will include the appropriate requirements of Sections 301, 302, 303, 306, and 307, unless specific limitations are provided below.

This certification shall become a final certification of the NPDES permit at the expiration of the public comment period, unless NJDEP has just cause to modify the certification.

This 401 certification is issued with the intent of assuring compliance with New Jersey's water quality standards and other appropriate requirements of State law, as provided by Section 401 (d) of the Act, and herein requires the following effluent limitations, other limitations, and conditions:

I. The permittee shall discharge so as not to violate Surface Water Quality Standards for the Kill Van Kull classified as TW-3 waters, pursuant to N.J.A.C. 7:9-4.1 et seq., including, but not limited to, the following:

A. Floating, Colloidal and Settleable Solids; Color; Petroleum Hydrocarbons and Other Oils and Grease

1. None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses.

2. For "Petroleum Hydrocarbons" the goal is none detectable utilizing the federal EPA - Environmental Monitoring and Support Laboratory Method (Freon Extractable - Silica Gel Adsorption - Infrared Measurement); the present criteria, however, are those of paragraph 1. above.

B. Toxic or Hazardous Substances

None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the waters unsuitable for the designated uses. None which would cause standards for drinking water to be exceeded after appropriate treatment.

II. The permittee shall discharge so as not to violate Interstate Sanitation Commission (ISC) Water Quality Regulations promulgated pursuant to the authority conferred upon the ISC by the Tri-State Compact (N.J.S.A. 32:18-1 et seq.). The ISC Water Quality Regulations include, but are not limited to, the following provision(s):

A. Biochemical Oxygen Demand shall not exceed:

30 mg/l on a 30 consecutive day average.
45 mg/l on a 7 consecutive day average.
50 mg/l on a 6 consecutive hour average.

B. Total Suspended Solids content shall not exceed:

30 mg/l on a 30 consecutive day average.
45 mg/l on a 7 consecutive day average.
50 mg/l on a 6 consecutive hour average.

C. Oil and Grease: None noticeable in the effluent.

III. The permittee shall comply with the Sludge Quality Assurance Regulations, N.J.A.C. 7:14-4.1 et seq.

IV. The permittee shall dispose of sludge from this facility in compliance with the New Jersey Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Regulations promulgated pursuant to the Federal Resource Conservation and Recovery Act of 1976 governing the treatment, storage and disposal of hazardous waste.

V. The permittee shall monitor for the above parameters in accordance with the following schedule. The results of such monitoring shall be included in the permittee's Discharge Monitoring Reports.

Parameter	Frequency	Sample Type
Biochemical Oxygen Demand	Monthly	Grab
Total Suspended Solids	Monthly	Grab
Oil and Grease	Montly	Grab

Pursuant to the "Administrative Procedure Act," N.J.S.A. 52:14B-1 et seq., Kenrich Petrochemicals, Inc. may be entitled to an adjudicatory hearing concerning this certification before the Office of Administrative Law. If Kenrich Petrochemicals, Inc. intends to raise objections to this certification, a request for a hearing must be postmarked within thirty (30) days of receipt of this letter and should be sent to:

Office of Permits Administration
Water Quality Management Element
Division of Water Resources
CN 029
Trenton, New Jersey 08625

An additional copy of the request for a hearing should be sent to:

Permits Administration Branch
EPA, Region II

26 Federal Plaza
New York, New York 10278

Requests for an administrative hearing shall contain the following information:

(1) State each legal or factual question alleged to be at issue, and their relevance to the permit decision, together with a designation of the specific factual areas to be adjudicated and the hearing time estimated to be necessary for that adjudication. Information supporting the request or other written documents relied upon to support the request shall be submitted unless it is already in the administrative record.

(2) The name, mailing address and telephone number of the person making such requests.

(3) A clear and concise factual statement of the nature and scope of the interest of the requester.

(4) The names and addresses of the persons whom the requester represents.

(5) A statement by the requester that, upon motion of any party, or upon order of the Administrative Law Judge or the Judge's own motion and without cost or expense to any other party, the requester shall make available to appear and testify, the following:

i. The requester;
ii. All persons represented by the requester; and
iii. All officers, directors, employees, consultants and agents of the requester and the persons represented by the requester.

(6) Specific references to the contested permit conditions, as well as suggested revised or alternative permit conditions (including permit denial) which, in the judgment of the requester, would be required to implement the purposes and policies of the State and Federal Acts.

(7) In the case of challenges to the application of control or treatment technologies, identification of the basis for the objection, and the alternative technologies or combination of technologies which the requester believes are necessary to meet the requirements of the State and Federal Acts.

(8) Identification of the permit obligations that are contested or are inseparable from contested conditions and should be stayed if the request is granted by reference to the particular contested conditions warranting the stay. Any request for a stay shall be considered by the Department pursuant to N.J.A.C. 7:14A-8.10.

If any provision of this certification or the application of any provision of this certification to any person or circumstance is stayed because of challenge or is held invalid, such stay or invalidity shall not affect other provisions or applications which can be given effect without the stayed or invalid provisions or applications, and to this end the provisions of this certification are declared to be severable.

In accordance with Section 8.10 of the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System", N.J.A.C. 7:14A-1.1 et seq., an appeal from any effluent limitation or permit condition shall not automatically result in staying the conditions challenged.

Any questions concerning this certification may be addressed to Mr. Edward H. Post at (609) 292-0407.

Very truly yours,

Paul C. Kurisko

Paul C. Kurisko, P.E., Chief
Industrial Waste Management Bureau

BY AUTHORITY OF

ARNOLD SCHIFFMAN, DIRECTOR
DIVISION OF WATER RESOURCES

Dr. Marwan M. Sadat, P.E.
Assistant Director
Water Quality Management

SD#1:WQM98-D/3:fmm

cc: Mayor and Council, City of Bayonne
Mr. B. Pyle, Division of Fish, Game and Wildlife
Mr. B. Cohen, EPA
Mr. P. Harvey, EPA
Dr. A. Mytelka, ISC
Hudson County Sewerage Authority

Theobold Sells Bayonne Plant To Concern from Minneapolis

BAY-INDUSTRIES-GEN

11-25-66 NJ

The Bayonne plant of Theobold Industries, one of the nation's major industrial oil and shortening compound producers, has been sold to the Archer Daniels Midland Co. of Minneapolis.

Details of the sale, including the purchase price were not revealed by either company.

Also involved in th sale is a tank lease agreement with Bayonne Industries, on whose property is presently located.

The Theobold plant was formerly operated by the Allie Crude Vegetable Oil Refining Co., headed by Anthony "Tino" DeAngelis.

Following the collapse of the DeAngelis oil empire in 1963 after it was revealed that DeAngelis had attempted to corner the vegetable oil market by holding "non-existant" oils, the plant was put on auction.

Almost a year later, Theobold Industries purchased it and started operations.

In 1965, Theobold started trading with the federal government under the school lunch program and the Bayonne plant received federal contracts totalling over $1 million.

This September Theobold received a governmental contract to supply 4,388,600 pounds of shortening for the school lunch program and a company spokesman said at that time that nearly all of the materials ordered in this contrac and "in all subsequent contracts would be shipped from Bayonne.

A federal spokesman stated that Theobold was considered as one of the nations major suppliers in this area.

Archer Daniels has been attempting to start a food-grade and industrial oils complex in the east for many years. According to a Wall Street source, the company is considered No. 2 in its field.

At present it has a major plant in Minneapolis and according to a governmental source is eligible to deal under the expanded Food for Peace program.

Under this program the company could deal, through the government, with foreign concerns, shipping materials directly overseas.

The Bayonne plant has facilities suitnable for ocean-going vessels and barges and its docking facilities are in excellent condition, a governmental source said.

DDF000001

BAY-IND-THEOBOLD IND

Theobold Firm Gets U.S. Pact

BAY. INDUS.-GEN.

9-21-66 B-T.

Theobold Industries of Bayonne has received a contract from the Consumer and Marketing Service to provide part of a 4,388,600 pound contract in shortening for the national school lunch program.

A spokesman for the Department of Agriculture said yesterday that Theobold was granted the federal contract on Sept. 15 to supply approximately 1,692,000 pounds of shortening compound at approximately $.17 per pound. The total price would be almost $287,640.

A spokesman for Theobold's general office in Kearny confirmed this yesterday afternoon.

"We have been receiving governmental contracts almost bi-weekly."

Asked what role, Bayonne's plant will play, the spokesman said, "All of the materials will be shipped via rail from Bayonne."

According to the governmental spokesman, Theobold is now being considered one of the nation's major suppliers in shortening.

The other companies that are sharing the Sept. 15 contract are Swift and Company, Wilson and Company and Anderson, Clayton and Company.

"We are more than happy with Theobold's performance," the spokesman said and continued, "this could mean a great deal of rail activity out of Bayonne."

According to the Theobold spokesman, the company's main plant is in Jersey City, but all of its shipping activities will be conducted out of Bayonne.

On Sept. 1, Theobold also received a contract from the government. In this one, Theobold was to supply a major portion of a 388,000-pound shortening contract.

In addition, the company, according to the federal spokesman, also is eligible to participate in the food for peace program.

"Theobold qualifies to enter into sales agreements with foreign nations to supply vegetable oil and shortening under the federal statutes."

"As of this point, however, they have not indicated that they wish to do so under the Food for Peace program, although they may be doing this privately," the spokesman said.

Theobold Industries is located on the property formerly owned by Allied Crude Vegetable Oil Refining Company on Bayonne Industries property and some of its equipment was purchased when the Allied plant was put up for auction.

DDF000002

May 10, 1971.

MEMORANDUM:

To: Dr. Alan I. Mytelka
From: Fred W. Ulrich

RE: METROPOLITAN RENDERERS ASSOCIATION, Bayonne, N.J.

Following industrial survey information from Jack Osser, Plant Manager, on 5/7/71.

I. - GENERAL SITE PLAN

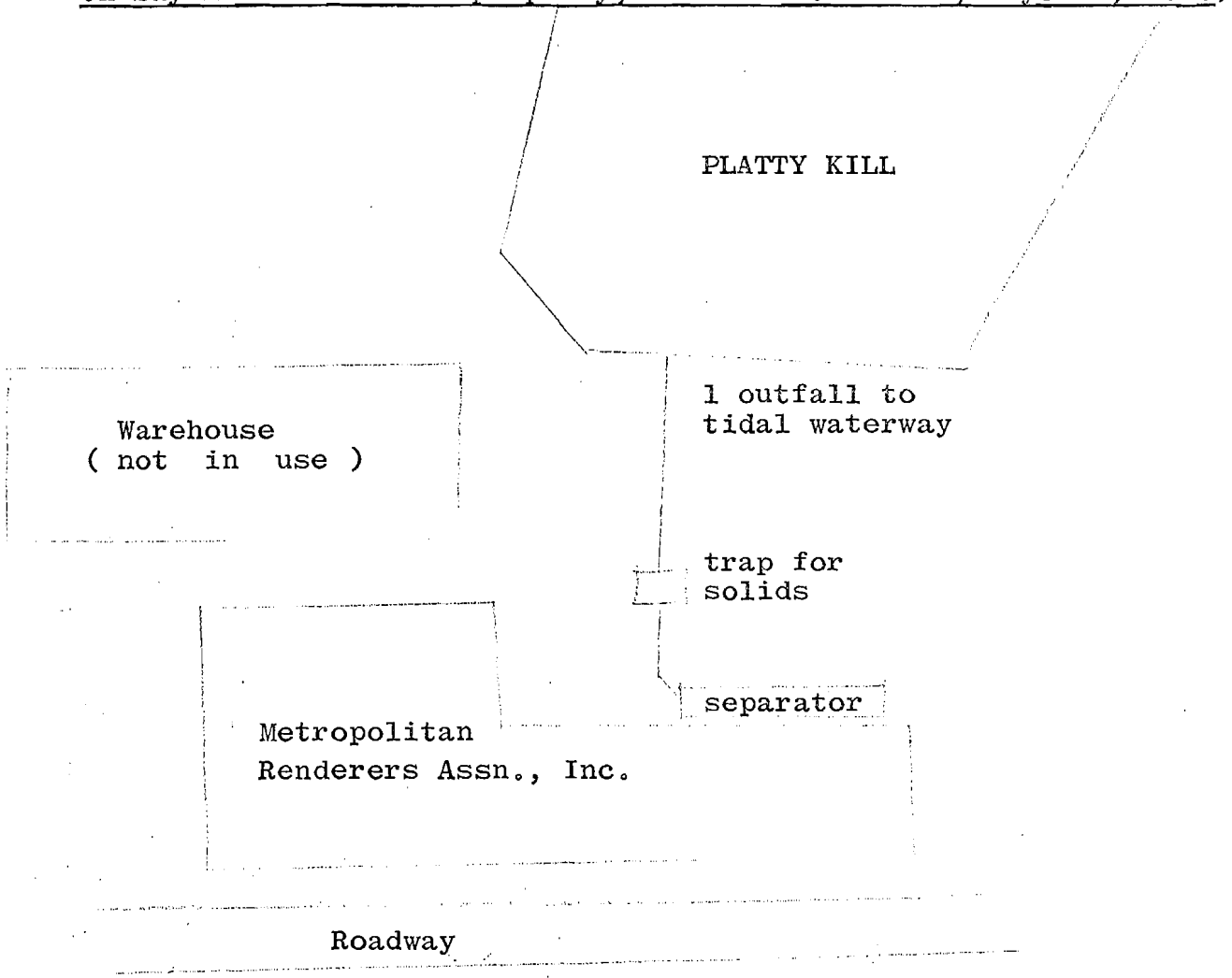
(A) See attached sketch for building location.
Metropolitan Renderers Association is a tenant located on the Bayonne Industries property, East 22nd. Street, Bayonne, N.J.

(B) All water supply is obtained from Bayonne Industries.
Fresh water - 7,500 to 15,000 gallons per month used for sanitary purposes only.
Salt water - 6 million gallons per month.
About 15% used for cleaning up and 85% for the barometric condensers.

(C) All sanitary wastes are discharged to the city sewer.
All salt water passes through a separator and trap prior to discharge to the Platty Kill.
The Platty Kill has a barrier which holds back all floating material from entering the Kill Van Kull. A dam will be constructed across the Platty Kill by the end of the summer to completely

DDG000001

SITE PLAN - METROPOLITAN RENDERERS ASSOCIATION, INC. (Tenant on Bayonne Industries property, East 22nd. Street, Bayonne, N.J.)



separate it from the Kill Van Kull.

II. - PLANT STATISTICS

(A) Finished products:

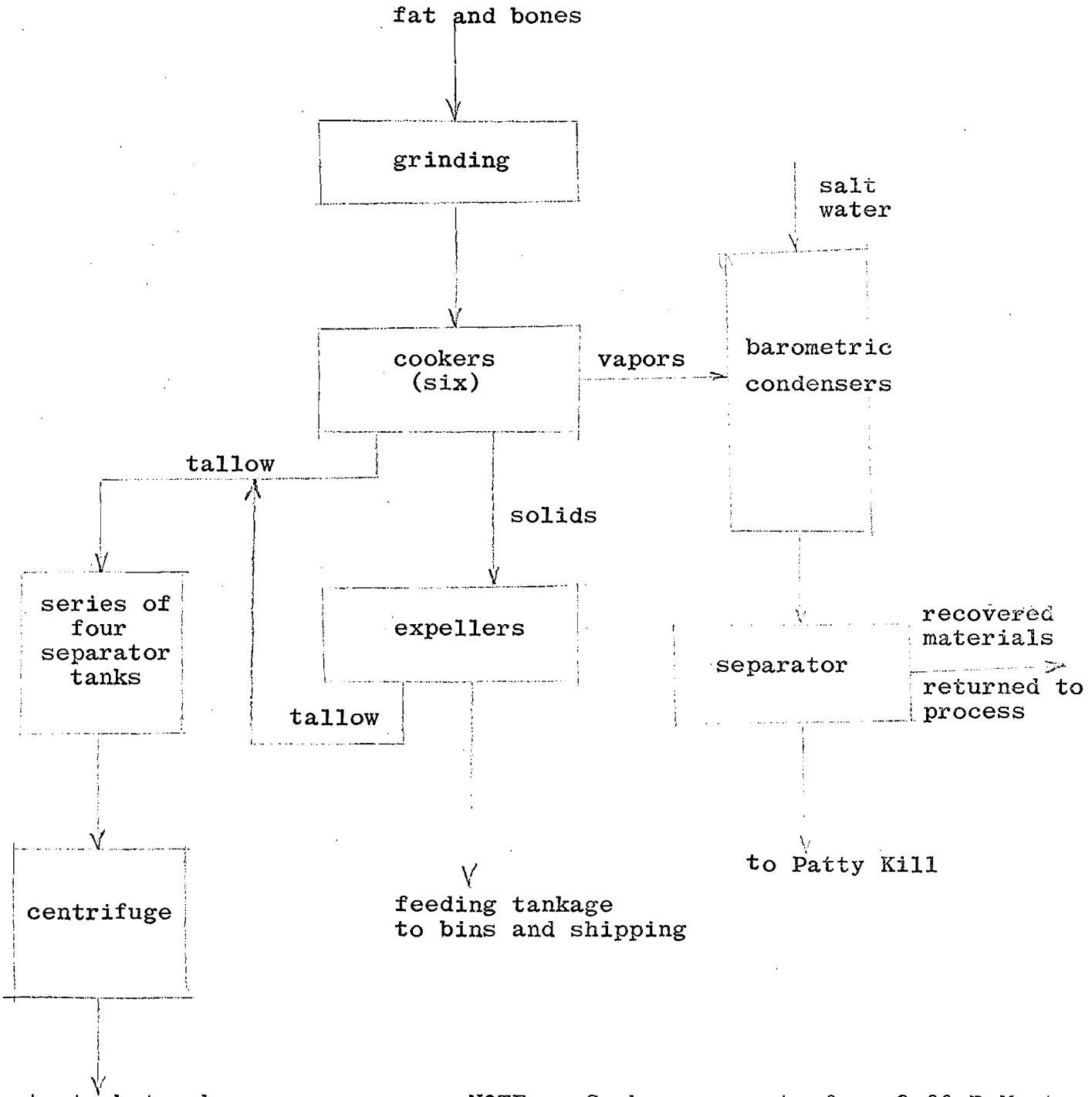
Tallow - 3/4 million lbs. per week, feeding tankage (used for dog food, chicken feed etc.)

(B) Raw materials:

Butcher Scraps - (fat & bones) about 1.5 million lbs. per week.

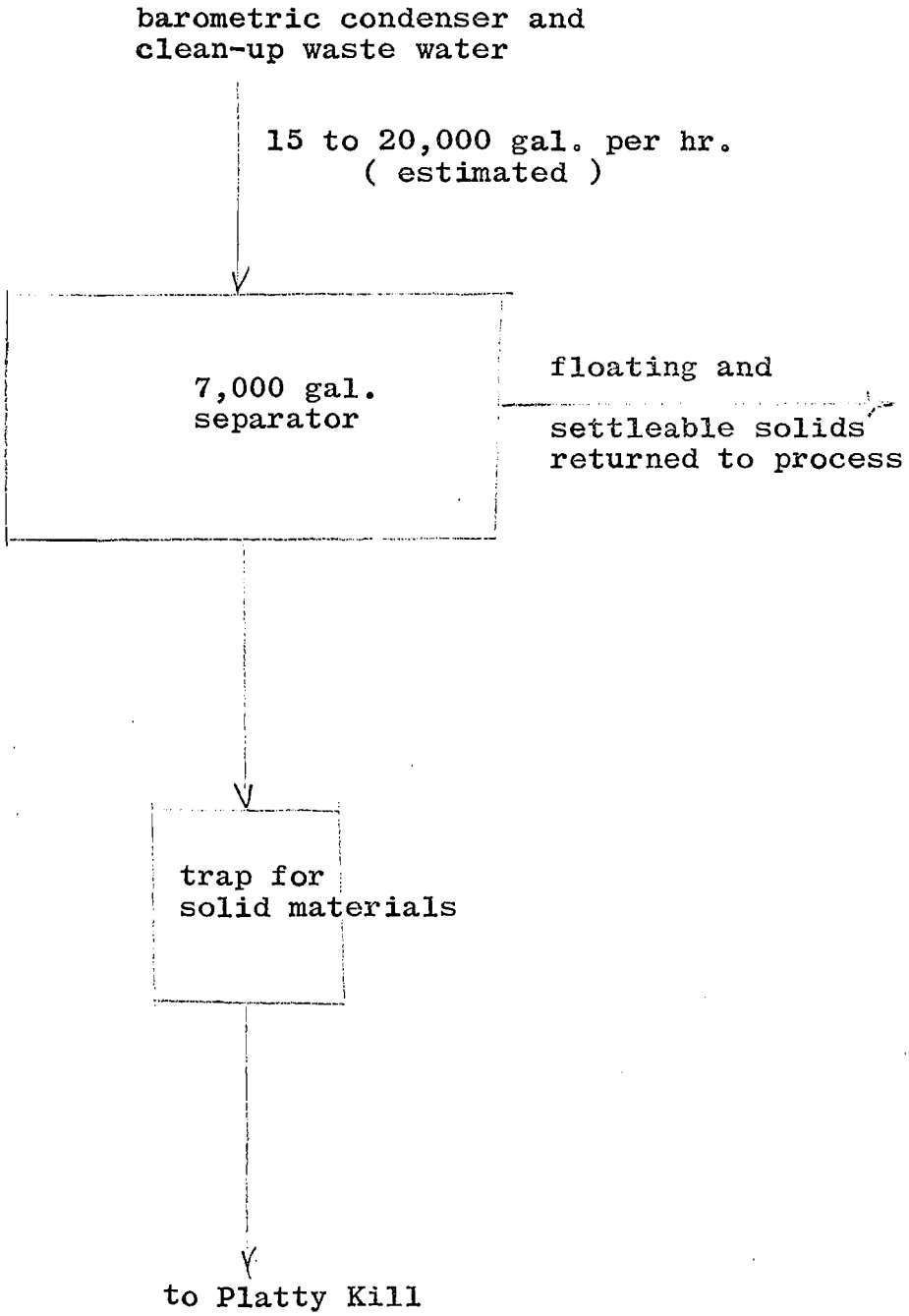
NOTE: - 75% of the raw material is converted to finished prodct and 25% is moisture which leaves the plant as steam.

III. - PLANT PROCESSES - (Dry Rendering Plant)



NOTE: - Cookers operate from 3:00 P.M. to 8:00 A.M. only.
The plant runs 24 hrs./day, 5 days/wk.
There are 30 employees including office personnel.

IV. - EXISTING WASTE TREATMENT FACILITY



V. - PRESENT STATUS OF ENFORCEMENT PROCEEDINGS

(A) No water pollution abatement orders have been issued against Metropolitan Renderers Assn., Inc.

FWU:gig.

WHITE CHEMICAL CORPORATION
FOOT OF EAST 22ND STREET
BAYONNE, HUDSON CO., NJ
EPA ID. # NJD001239185
VOLUME 1 of 2

WHITE CHEMICAL CORPORATION
FOOT OF EAST 22ND STREET
BAYONNE, HUDSON COUNTY, NEW JERSEY
EPA ID NO. NJD001239185

GENERAL INFORMATION AND SITE HISTORY

The White Chemical site is located in the heavily industrialized section of Bayonne known as Constable Hook, and within the industrial complex known as Bayonne Industries. Prior to 1870, the area of Constable Hook was used agriculturally. By the 1870s, however, most of the Hook was occupied by petroleum refining industries. Presently petroleum and bulk chemical storage occupy most of the area.

The Bayonne Industries complex encompasses approximately 225 acres on what was the original site of the Tide Water Refinery. In general, the Bayonne Industries property has been used extensively for shipping, receiving, storage, and manufacturing of bulk chemicals for at least fifty years. Many of these bulk chemicals were used in hydrocarbon processing and refining operations on the Bayonne Industries facility.

The White Chemical site is located on a 3.4 acre portion located approximately 0.75 miles from the main gate of Bayonne Industries. Operations took place at the facility from 1961 to 1983 with the manufacture of a wide variety of compounds, predominantly chlorinated and brominated organics. Operations moved to their present location at 660 Frelinghuysen Avenue in Newark in 1983. Currently, the site is inactive and is undergoing remedial actions under the direction of NJDEP Bureau of Case Management.

The site is located less than one quarter of a mile east of the densely populated areas of the City of Bayonne, which has a population of approximately 65,000 people.

SITE OPERATIONS OF CONCERN

A wide variety of products were produced at White Chemical during their tenure at the Bayonne facility. Four main product lines were being manufactured just prior to when the productions were moved to Newark. These include acid chlorides, alkyl bromides, brominated flame retardants, and specialty chemicals. The flame retardant compounds and acid chloride manufacturing represented 60% to 80% of the facility's business. Associated with these productions were numerous drums of raw materials, finished products, intermediates, re-works, and waste materials. The reactions were run in glass lined reactors with capacities ranging from 100 to 4000 gallons. Production was carried out in batch type operations.

Acid chlorides were manufactured using two 18 carbon fatty acids, such as lauric, caprilic, steric, acetic, and pivalic acids, as the raw materials. The acids were reacted with phosphorus trichloride which yielded a phosphoric acid layer and an acid chloride, with both being sold as products. The phosphoric acid was sold as a boiler treatment chemical and as a starting material in the production of agricultural chemicals. The acid chloride was used in the manufacturing of adhesives and pharmaceuticals. The wastes which were produced during this process were the still bottoms from the purification of the acid chlorides. These bottoms were wasted after being distilled for the second time. This waste

was corrosive, having a pH of approximately 1.0 Standard Units.

Alkyl bromide products were manufactured by reacting alcohols (propyl to 18 carbon staryl alcohols) with phosphorus tribromide to yield alkyl bromides (3 carbon propyl bromide to 18 carbon staryl bromide) and phosphoric acid. The alkyl bromides were to be used in certain types of soaps and emulsifiers. Lower chain compounds such as propyl bromides may have been used in further organic synthesis for the agricultural, chemical, and pharmaceutical industries. The wastes generated during these processes included aqueous wastes that could not be recycled, phosphoric acid that could not be sold, and a filter cake. All wastes generated were considered hazardous due to contamination with hydrogen bromide.

Decabromobiphenyl oxide, a brominated flame retardant sold under the trade name "Teno" was manufactured by brominating biphenyl oxide in the presence of a chlorinated solvent. A byproduct of the process, hydrochloric acid, was sold as a product as well. The wet solid flame retardant was custom dried off-site at Alnot Inc., Camden, with the dried product being sent back to White in drums. Wastes generated from this process were chlorinated solvent still bottoms from the purification of the product. This waste was both corrosive and flammable with a pH of approximately 1.0 Standard Units and a flash point of less than 100°F. Scrubber waste generated during the processes was neutralized with sodium bisulfate, and disposed of as hazardous waste.

A variety of specialty chemicals were manufactured at this facility, mainly for pharmaceutical industry. These products would include, but was not limited to, hydriotic acid, (made by mixing water, red phosphorus, and iodine in a reactor), esters, methyl butyrate, bromoacetyl bromide, alphabromo caproic acid, and bromoacetic acid. Wastes generated during these manufacturing operations included hydrochloric acid, distillation bottoms, and wastewaters.

Up until January 1977, White Chemical manufactured Polybrominated Biphenyls (PBB). PBB production at the facility terminated on the following dates: hexabromobiphenyl, August 25, 1975, octobromobiphenyl, January 19, 1977, nonabromobiphenyl, January 11, 1977, and decabromobiphenyl, March 8, 1977.

The PBB manufacturing process took place in three buildings, each separately utilized for storage, drying and grinding, and for housing the reactor. However during the latter years of production, the drying and grinding operations took place off site at Fluidized Processing in Newark. This company received wet-cakes, which they dried and grinded, returning the finished product to White Chemical in drums.

The raw materials used in PBB production were stored in a variety of containers. The biphenyl was stored in bags, the catalyst was stored in cans at 40°F, and solvents and bromine were stored in above ground tanks.

The process by which PBB was manufactured took place in a closed kettle which was mechanically agitated and equipped with various condensers, scrubbers, and tanks to treat and reclaim raw materials from contaminated source streams. The process proceeded as follows. A measured amount of tetrachloroethylene was added to the kettle initially. To this, either biphenyl (solid) or diphenyl oxide (liquid) was added, as well as a slurry consisting of aluminum chloride, the catalyst, and a solvent. Finally, the

bromine liquid was added and the mixture was heated to approximately 130°F. The heat generated by the reaction was controlled by a non-contact heat exchanger. The process gave off hydrogen bromide gases as well, which passed through condensors and entered a packed tower in which tetrachloroethane flowed countercurrently to the gas stream. A certain quantity of solvent from a hold tank was recirculated through the packed tower as well to remove bromine from the hydrogen bromide gas stream.

The hydrogen bromide gas which left the top of the packed tower was sent through two additional packed towers in which fresh water was recirculated, downflow, through both towers and returned. This water, which normally built up to a 45% solution of hydrogen bromide, was pumped to a above ground storage tank for bromine recovery.

Gases which were emitted from these fresh water towers were directed to a final packed tower which contained a countercurrent stream of salt water. The flow of salt water which left the bottom of this tower was discharged directly to the industrial sewer lines which discharged to the Bayonne Industries separation basin.

After the reaction was complete, in approximately two days, the liquid phase was passed through bag filters to which aluminum hydroxide had been added, with the filtrate being directed to the industrial sewer lines. The bags with the filtered material were disposed of off-site. The solid PBB was dewatered in a centrifuge. Following dewatering, methanol was added to improved cake solubility and the product was shipped off-site for drying and grinding.

Waste products generated during operations consisted of process effluent and organic residues. Waste products which were stored in drums on-site included acid solutions, non-halogenated organic solvents, trichloroethylene, acetone, alcohol, filter aids, filter clays, organic sludges, organic still bottoms, and lead solid residues. The integrity of these drum storage areas is unknown. However, poor drum storage practices were repeatedly observed. Distillation residues were reportedly hauled and incinerated at Rollins Environmental and the process wastes were hauled, by Earthline, to a landfill run by SCA Chemical Services.

In response to the production of PBB at the White Chemical facility and the documentation of the harmful effects to the health of people and animals which are exposed to PBBs, the USEPA initiated an investigation to determine the degree of PBB contamination at this facility in 1977.

A report prepared by Environmental Science and Engineering, Inc. of Gainsville, Florida on June 16, 1977, indicated that a variety of samples had been collected at White and were analyzed for PBB isomers. The media from which the samples were collected included soil, surface water and sediment from Platty Kill, sediment of the Kill Van Kull, air, algae, lichen, fish, and human hair. Analysis indicated PBB isomers to be present above the detection limit in all media tested with the exception of the sediment of the Kill Van Kull and the algae.

On August 17, 1977, a 24-hour sampling survey was initiated by USEPA to determine the extent of PBB in the industrial wastewater effluent discharge to the Bayonne Industries separator basin. Additionally, samples were collected from the surface oil on the separator basin, and from the surface

oil in a storage tank. Both a three location composite water and a three location composite sediment sample were collected from the basin, and a surface water sample from the Platty Kill was collected as well. As the plant was not producing PBB oxides at the time of sample collection, the sampling results indicated the extent of PBB residuals in the plant and sewers. All samples were analyzed for PBB oxides as well.

Analysis of the samples indicated that a concentration of 41.4 parts per billion (ppb) of PBB was present in the overall plant effluent which, on the day of sampling, discharged to the separator basin at a rate of 0.741 million gallons per day. The pilot plant wastewater, which discharged through a separate line, contained 0.9 ppb PBB. The concentration and load of PBB oxides in the overall wastewater effluent was determined to be 71.6 ppb and 0.44 pounds per day respectively. The water sample collected from the basin was found to contain 3.3 ppb PBB and a PBB oxide concentration of 16 ppb. The sediment from this basin contained no detectable concentration of PBB but had a PBB oxide concentration of 26,500 ppb. No detectable levels of PBB or PBB oxides were found in the surface water of Platty Kill, or in the surface oil samples collected from the tank and the basin.

Through review of inspection reports prepared by both USEPA and NJDEP, it is apparent that poor waste handling procedures where common at the White Chemical facility. Frequently, deteriorated drums, associated spills, and in general, large areas of visually contaminated soils were observed throughout the facility. Additionally, standing puddles of water were frequently present which were visually contaminated. An NJDEP inspection on July 5, 1983 noted the existance of uncapped discharge pipes leading from the bromine tank farm. Spillage of product and raw materials were also noted throughout the facility. Drum washing took place on the facility and may have involved direct dumping on the ground or in potentially unlined troughs.

White Chemical filed their initial application to the USEPA for a NPDES permit on July 1, 1971. This application was revised on February 1, 1972 and again on January 5, 1977. The final NPDES permit was to regulate the discharge, through sewer lines, of cooling and scrubber water to Platty Kill Creek via a separation basin owned by Bayonne Industries, which was also used by other tenants in the complex. Platty Kill Creek flows into the Kill Van Kull approximately one quarter of a mile from the plant.

A letter from White Chemical dated February 2, 1977, indicated that the NJDEP had collected effluent discharge samples in conjunction with the NPDES permit application. Analysis of these samples indicated that chloroform (5.5 ppb), carbon tetrachloride (245 ppb), toluene (3.2 ppb), xylene, (7.8 ppb) and tetrachloroethane (48 ppb) were present in the effluent. Other correspondence from that time indicated that due to the nature of the discharge, pretreatment of the waste prior to discharge, would be needed. The final permit (No. NJ0001538) was issued by USEPA in March 1979 and was subject to a discharge compliance schedule which was outlined in a Findings of Violation and Order for Compliance, issued to White by USEPA on March 29, 1979. This document was issued pursuant to Section 309 (a) (5) (A) of the Clean Water Act.

The individual sewer lines which collected wastewater from the manufacturing and pilot plant operations were described in the following

manner. The process wastewater from the outside manufacturing area entered one of two trenches which ran alongside this area. Trench No. 2 wastewater, salt water from the final scrubber, and the wastewater discharges from the adjacent side of Industrial Processing Building "A" combined in a sump and then dropped to a lower section where they combined with the discharge from Trench No. 1. These combined wastewaters entered a main collection pit, where the remaining discharge from Building "A" also entered. From this point, the combined manufacturing wastewater flowed through an underground sewer line to the separator basin at Bayonne Industries. Additionally, wastewater from Pilot Plant Building "B" discharged directly to this basin via a separate sewer.

Wastewaters which were to be shipped offsite for disposal were stored in drums on-site in an often haphazard fashion resulting in frequent spills, according to early NJDEP and USEPA reports.

In an attempt to comply with the provisions of a November 1979 Notice of Violation issued by NJDEP, White installed, in late 1980, two above ground 7500 gallon fiberglass tanks to hold saleable byproducts and four above ground 7500 gallon fiberglass tanks to hold wastewater prior to shipment off-site to an authorized treatment and disposal facility. Use of these tanks was also supposed to reduce the amount of spills occurring when transferring the contents of drums for off-site disposal.

In 1983, White Chemical relocated its operations from the Bayonne Industries complex to 60 Frelinghuysen Avenue, Newark, Essex County, the former site of the Lancaster Chemical Company. The moving of the facility and the decommissioning of the apparatus at the Bayonne facility was approved by NJDEP and overseen by the NJDEP Metro Regional Office from June 8, 1983 to July 7, 1983.

On August 5, 1983, an Administrative Consent Order (ACO) was issued to White Chemical by NJDEP. As a result of the findings outlined in this document, White was ordered to submit an engineering plan which outlined the operational areas of the Bayonne facility as well as developing a sampling/analytical plan to address all areas of the site. Based on the sampling results, White would also be required to submit and implement a comprehensive site cleanup plan.

Due to the inherent contamination of the entire complex with oil, difficulties were encountered in developing such a plan that would gather reliable data. Finally, on July 8, 1987, White Chemical submitted a revised sampling and analytical plan for the Bayonne site in accordance with the ACO. This plan was found acceptable by NJDEP Bureau of Case Management by letter dated August 10, 1987. This sampling episode was conducted on November 18, 1987, and a total of 58 soil samples were collected from 9 formerly operational areas on the site. Analysis indicated extensive contamination with organics, metals, cyanides, phenols, petroleum hydrocarbons, and pesticides.

GROUNDWATER ROUTE

The main portion of the Bayonne Industries Complex lies on reclaimed marshland, which is underlained by unconsolidated gravel, sand, silt, and clay which varies in thickness from a few feet to as thick as 40 to 45 feet. The upper portion of the area is composed of fill which consists of cinders, bricks, timbers, coal dust, stones etc. This is the material

which was used to reclaim the swampy land. This fill is underlain by low permeability grey clayey silt, meadow mat, swamp muck, and marsh deposits. Alternating beds of fine to coarse grained sand or gravel, and clay of varying thickness underlies the upper confining clays and silt. Unconsolidated bedrock is present approximately 100 feet below sea level. Ground water flow is generally toward the Kill Van Kull, where the tidal fluctuations are on the average of 4 to 5 feet. Automatic water level recorders on two wells installed at Bayonne Industries to monitor the tidal affect on ground water levels indicated fluctuations of no more then 1.5 feet. This indicates a relative tightness and damming of water at the bulkheads along the Kill Van Kull. Ground water is encountered at depths of 5 to 7 feet.

There are no ground water monitoring wells on site. A computer generated water withdrawal map which identifies wells within a 5 mile radius of the site indicates that the nearest off-site well is located within 3.2 miles of the site and is owned by Port Liberte Partners. The depth and quality of this water is unknown. There are no municipal supply wells located within a 5 mile radius. Potable water supply for Bayonne is obtained from upstate reservoirs.

Numerous test wells and test borings were made on the Bayonne Industries property during a hydrogeologic investigation performed by Weston Associates in 1978. The integrity of these wells are unknown and it is not believed that any of these wells or borings are on the property leased by White Chemical.

The potential exists for contamination of the ground water due to operations at White Chemical. There is documented contamination of ground water in the area with oil and petroleum products due to historical uses as petroleum refinery and storage facilities. No site specific ground water samples have been collected.

SURFACE WATER ROUTE

The nearest downslope water body is Platty Kill Creek which received discharge from the Bayonne Industries separation basin, located less than 1000 feet of the facility. Platty Kill Creek discharges to the Kill Van Kull about 0.25 miles from the plant.

In conjunction with the USEPA investigation, of potential PBB contamination, in 1977 several samples were collected from the water and sediments of the Platty Kill, and of the sediments of Kill Van Kull. The June 1977 sampling episode indicated the following concentrations of total PBB isomers were found above the detection limit.

LOCATION	TOTAL PBB ISOMERS (ppb)
1. Water at the mouth of the Platty Kill	6.6
2. Water at the head of the Platty Kill	31
3. Sediment at the head of the Platty Kill	290,000

4. Sediment at the mouth of the Platty Kill <10

5. Sediment in the Kill Van Kull <10

The surface water sample collected during the August 17, 1977 sampling episode showed no detectable levels of PBB. No additional records of sampling episodes were found.

The potential for further contamination of these waterways exists due to the analytical verification, in 1977, of contamination of the separation basin waters and sediments, and of the effluent discharge by White to the basin. In addition, numerous tenants in the complex have discharged to this basin. The potential exists that residual contamination in the basin could continue to be released to Platty Kill Creek and, in turn, to the Kill Van Kull.

During operations at White Chemical, intake water underwent no pretreatment and was drawn from the Kill Van Kull at a rate of 530,000 gallons per day in 1976. This water supply was also supplemented by 112,000 gallons per day from the Bayonne municipal water system. In addition to such industrial withdrawals from these surface water bodies, they are used commercially and recreationally.

Due to the proximity of these water bodies and the presence of contamination throughout the entire Bayonne Industries complex, the potential exists for continued contamination of both the Platty Kill Creek and the Kill Van Kull via runoff, discharge of ground water, and release from sediments.

AIR ROUTE

In conjunction with the June 1977 investigation by USEPA into the potential for PBB contamination at the site, two air samples were collected, however the method and the location of sample collection is unknown. Analysis of both a crosswind air sample and a downwind air sample for PBB isomers indicated levels of 0.6 nanograms per cubic meter of air sampled.

Throughout the history of operations at the Bayonne facility, several Orders were issued and numerous compliants were received.

On November 7, 1975, a citizen complaint was received due the emission of a white mist which was irritating to the eyes. On March 16, 1977, a complaint was received due to the presence of strong onion-type odors which rendered workers in adjacent facilities unable to work. Again, on April 24, 1977, a complaint of lachrimatory odors was received. However the odors on the date could not definitively be identified as originating from White Chemical.

On June 26, 1980, there was a spill of pivaloyl chloride when a pallet cracked causing two drums to fall to the ground, one of which ruptured. Instead of notifying the local fire officials, White proceeded to clean up the spill by flooding the area with water. When pivaloyl chloride comes in contact with water, it forms solid pivalic acid and hydrogen chloride. As a result, a vapor cloud was formed and traveled west beyond the perimeter of the Bayonne Industries complex. The police detected the vapor cloud and alerted fire officials, who directed White to collect the residues of the

spill into drums. However, on June 27, 1980 detectable hydrogen chloride odors were noted by representatives of the Hudson Regional Health Commission.

On April 13, 1981, an inspection was conducted by Gary Garetano of the Hudson Regional Health Commission in response to a distinct odor which seemed to be originating from White Chemical. The odor was identified by the plant manager as methyl butyrate, which was being used in a reaction process. There were no reported equipment malfunctions, according to the plant manager, however he stated that the pollution control apparatus would be checked.

On September 25 and September 26, 1982, anonymous complaints were received concerning yellow orange fumes which were being emitted from White Chemical facility.

During its tenure at its facility in Bayonne, White Chemical was issued two Orders by NJDEP. The first Order was issued to Bayonne Industries and White Chemical on June 9, 1976 due to the operation of a bromination kettle, controlled by a packed tower and scrubber, without a permit. The apparatus was apparently installed about two years previous and consisted of a 4000 gallon P. Fandler kettle for the bromination of biphenyl. The bromine, hydrogen bromide, and hydrogen chloride were absorbed in packed columns using tetrachloroethane as an absorber. The final exaust was to an existing wood scrubber. The report indicated that the control apparatus appeared to be adequate for the operation involved at the time.

On July 14, 1981, an Order was issued to White Chemical due to the failure of the company to submit a plan to achieve compliance for source operations relating to volatile organic substance emissions. The company stated that, as they were planning to move operations to a new facility in Newark, they had not filed the report. By letter dated August 3, 1981, White Chemical indicated that their usage of volatile orangic solvents was small, with the largest tank having a 12,000 gallon capacity. This tank was used to store methanol. They reported that no open tanks were used to store solvents.

At least eleven air pollution permits were issued to White Chemical Company to regulate reaction vessels, tanks, and air pollution control apparatus.

SOIL

Numerous soil samples have been collected at the facility and have verified contamination of the soils on site. The first record of samples collected was in conjunction with USEPA investigation into PBB contamination on site in June 1977. During this sampling episode two soils were collected, however their exact location is not clear. Analysis of these samples for PBB isomers indicated levels of 2800 ppb and 750 ppb total isomers in the soil samples.

The findings of an Administrative Consent Order (ACO), issued to White by NJDEP on August 5, 1983 indicated that soil samples had been collected

throughout the site on July 22, 1981. The following hazardous substances were analytically detected in these samples.

CONTAMINANT	CONCENTRATION (ppm)
benzene	22
2-chloronapthalene	130
nitrobenzene	100
phenols	63
toluene	23

The ACO also indicated that, on June 7, 1983, soil samples were collected and were analyzed for 2,3,7,8-TCDD (dioxin). Analysis of the samples was complicated by the high levels of other contaminants in the soil. No levels of dioxin were detected, however, the detection limit of the analysis was at 1.7 ppb. Further analysis of the samples was attempted to determine the nature of the chemical compounds responsible for the interferences. It was reported that identification was impossible due to the extent of the interference caused by the large concentrations of these compounds in the sample.

Two surface soil samples were collected by NJDEP on July 5, 1983. The first sample was a composite of five areas, collected at 1 to 2 inches in depth, near a low area north of a drum pad. In the area, the report indicated a 50 by 15 foot area of a black material. According to the plant manager, empty drums were cut up in this area. At the time of sample collection, the spill appeared to be fairly recent. The second sample was composited from four areas at depths of 1 to 4 inches, in a drainage trough by the acid chloride drum storage area south of the pilot plant.

Analysis of both samples indicated the qualitative presence of dibromo-, tribromo-, tetrabromo-, pentabromo-, hexabromo-, heptabromo-, octabromo-, nonabromo-, and decabromophenyl compounds. These samples also contained 2.2% and 6.0% oil and grease respectively. Extractable metals at the following concentrations were detected in the soils.

CONSTITUENT	CONCENTRATION (ppm)	
	SOIL NO. 1	SOIL NO. 2
Barium, total	1.6	<0.10
Chromium, total	0.11	<0.05
Mercury, total	0.009	0.001
Nickel, total	1.4	1.0

Quality assurance data was included in the final data package submitted by Stablex - Reutter Inc., Camden, New Jersey.

On November 18, 1987, approximately 58 soil samples were collected and analyzed at AnalytiKem, Cherry Hill, as required by the 1983 ACO. Six samples were collected from each of nine areas throughout the facility. These areas corresponded to sites of operations that may have resulted in contamination. Additionally, four off-site samples were collected. Of the six samples collected in each area, four were near-surface samples along the perimeter of the area and two were collected in the center. The center

samples were analyzed for priority pollutants plus forty and were collected at depths ranging from 8 to 48 inches. The perimeter samples were collected at depths of 0 to 6 inches, and were analyzed for target compounds. The target compounds were selected based on several factors namely, consistent presence in previous analytical reports, the relative concentrations of previously detected compounds, as indicators of White Chemical products, and due to environmental fate and persistance considerations. These target compounds included cyanides, total phenol, antimony, arsenic, lead, mercury, petroleum hydrocarbons, 4-bromophenyl phenylether, 2-chloronapthalene, napthalene, decabromophenyl phenylether, 1-bromotetradecane, bromododecane, and bromooctadecane. Four background samples were collected at this time as well, from within the Bayonne Industries complex. These four samples were collected from two locations at shallow (0 to 6 inches) and deep (30 to 48 inches) depths.

Analysis of the on-site samples indicated significant contamination of the soil with semivolatile organics, metals, cyanides, phenols, petroleum hydrocarbons, White Chemical indicator compounds, pesticides, and decabromophenyl phenylether.

As previously noted, historical site inspections have revealed poor housekeeping practices and numerous site-wide spills. An inspection by the Hudson Regional Health Commission on July 19, 1979 revealed the storage of rusted drums near the pilot plant and material from other rusted drums in the area, which were unlabeled, to be seeping into the ground.

On August 10, 1979, NJDEP inspectors observed approximately 3,000 drums of material stored in the waste storage area, most in an advanced stage of deterioration, some of which were leaking. It is unknown whether these drums were on a pad or upon bare soil. An acid spill, covering approximately 15 square feet, and observed to be giving off visible fumes and to be bubbling on the ground, was in contact with many of these drums. Oil was observed on the ground as well. According to company officials, the drum contents included trichloroethylene still bottoms, various halogenated organics, and various acids. As a result of these observations, a Notice of Violation (NOV) was issued on November 7, 1979, ordering White to cease all waste storage, processing, and disposal activities. They were to identify the total number of drums, volumes, and contents, identifying any materials which had leaked or spilled. They were to remove all chemical wastes from the facility, excavate any spilled chemical materials, and repackage any container which was of poor integrity.

An inspection conducted on July 14, 1980 to ascertain compliance with the NOV, indicated that although storage area conditions had improved since the previous inspection, haphazard storage practices were still evident. Drums were observed in an advanced stages of deterioration, exposing the plastic liners. Several spills were observed eminating from the drums, one being identified as a trichloroethylene heavy layer. An oily sludge-like material was observed to be stored on a platform around which White Chemical stored their drums of waste.

A second compliance inspection was conducted on December 11, 1980. The spill on the platform had been removed by an oil reclaiming company, Angus Tank Cleaning of Bayonne. Upon inspection of the waste storage area, many deteriorated drums and spills were observed. As was previous policy, drums

of waste, raw materials, and finished products were stored in such a manner as it was difficult to differentiate between the contents.

A third compliance inspection was conducted on January 6, 1981. Again, the inspection of the waste storage area revealed many deterioated drums, some of which had exposed polyethylene liners. Wastes which had been stored for greater than 90 days were observed.

The fourth compliance inspection conducted on May 29, 1981, indicated that White had improved its housekeeping and had reduced the number of drums of wastes, by-products, and products stored on-site. The inspection also served to outline and select potential sampling points as per an agreement between White and NJDEP.

As previously discussed, a NJDEP inspection was conducted at the facility on July 5, 1983. Approximately 20 separate areas of spillage were noted. In some cases, the material could not be identified by the plant manager. At the time of this inspection, demolition and decomissioning of the facility and process equipment was occurring. A follow up inspection, conducted on August 21, 1984, confirmed that White Chemical had shutdown its operation in Bayonne in June 1983. It was noted that a waste pile was on site which was potentially contaminated with PBB. This soil was scraped from a parking lot on-site and was awaiting sampling and analysis prior to disposal. It is unknown whether this analysis was ever performed.

DIRECT CONTACT

Four human hair samples were collected in conjunction with the USEPA's June 1977 investigation into PBB contamination at the site. Of the four samples analyzed for PBB isomers, only one sample contained detectable levels. This sample of male and female hair had a total PBB isomer concentration of 8100 ppb. It is unknown whether or not this sample was taken from employees on-site.

The ongoing construction, by the Department of Transportation, of Route 169 through the Constable Hook area, does not go through the White Chemical site but some work associated with the construction has occurred on the site. The exact locations of samples collected during the early 1980s in conjunction with this project in close proximity to White is unclear. However, analysis of these samples indicate contamination with cyanides, volatile organics, acid extractable and base neutral compounds, and heavy metals. Workers have complained during excavations, of odors, irritating vapors, and of dermatological irritations. It is unknown, however, whether the compounds which potentially caused these complaints, were/had eminated from White Chemical operations or were indicative of the contamination throughout the industrial areas of Constable Hook.

As previously noted, complaints were received on November 7, 1975, March 16, 1977, and April 24, 1977 by NJDEP regarding emissions from the White Chemical facility resulting in lachrimatory odors. These odors rendered workers in nearby industries unable to work. The spill of pivaloyl chloride on June 26, 1980 resulted in off-site migration of a vapor cloud which may have allowed off-site population to come in direct contact with these materials.

Due to extensive reports outlining poor housekeeping practices, poor drum storage and transfer operations, and standard operating procedures which

included the use of open tanks and trenches, the potential for on-site workers to come in direct contact with contamination on-site is great. There were no report of injurys due to potential exposures in any files reviewed.

The facility, as previously stated, was located within the Bayonne Industries complex. This complex is completely fenced and access is restricted by on-site security. Therefore, the potential for exposure due to unauthorized access is remote.

FIRE AND EXPLOSION

There were no recorded incidents of fire or explosions at the facility, however the potential existed due to the use and storage of flammable materials on site. The potential continues to exist due to the possibility of residuals of flammable materials to remain on-site as a result of documented soil contamination.

ADDITIONAL CONSIDERATIONS

As previously mentioned, algae, lichen, and fish samples were collected as part of the June 1977 PBB contamination investigation conducted by USEPA. The exact location of sample collection is unknown. Lichen were found to contain 900 ppb total PBB isomers, fish contained 160 ppb total PBB isomers, and no detectable levels were found in the algae tested. The potential for continued impact on such flora and fauna and the potential effects on the food chain continue to exist due to the potential for release of contaminants due to storm water runoff, ground water discharge, and release from the sediments of the Platty Kill.

As was previously outlined, air releases which occurred during site operations may have resulted in damage to off-site properties as well.

Inspections of the facility by various authorities frequently indicated poor housekeeping practices, and questionable drum storage operations. Such observed unstable containment of wastes, raw materials, and products had resulted in numerous spills and releases.

Numerous references were made to a warehouse located elsewhere in the Bayonne Industries complex which was utilized to store, presumably, finished product. However, the integrity of this storage facility and, therefore, the potential for release, as well as the actual contents stored, is unknown.

ENFORCEMENT ACTIONS

There have been no enforcement actions taken against White Chemical other than those outlined previously.

PRIORITY DESIGNATION

There is documented contamination of soil on site with a variety of compounds due to the operations at White Chemical. Similarly, the potential for release to ground water and surface water exists. The site, which is an inactive at this time, is located within the Bayonne Industries complex. Remedial activities are ongoing at the facility under the direction of NJDEP Bureau of Case Management, and as such, the site is assigned a high priority for assessment.

RECOMMENDATIONS

As previously stated, remedial activities are ongoing at the site under the direction of NJDEP Bureau of Case Management. A continuation of these activities is recommended. Further recommendations for the site are as follows.

1. Ground water monitoring wells should be installed and sampled to determine the impact of previous site operations. It should be determined if some of the highly toxic contaminants, analytically confirmed in the soils of the site, have entered the ground water and are being released to the Kill Van Kull.

2. Further sampling episodes should include the analysis for dioxin, as precursors were historically used at the facility and previous analysis have proved inconclusive. Additionally, future analysis should include a more comprehensive list of parameters (e.g. Hazardous Substance List Compounds), as the facility handled such a wide variety of chemicals and produced a wide variety of products. The potential for any of these compounds to have been released to the soil and ground water is great due to poor housekeeping practices. A list of chemicals utilized and products manufactured is included in Attachment A.

3. An investigation should be conducted into the troughs and underground sewer lines which carried effluent to the Bayonne Industries separation basin to determine the integrity and the potential release of contaminants to the surrounding soils.

4. The location of the warehouse used to store presumably finished products in the Bayonne Industries Complex should be ascertained. An investigation should be conducted to determine if these storage activities resulted in any release to the environment.

Submitted by:

Clare P. Sullivan, HSMS III
NJDEP, Bureau of Planning and Assessment
October, 1988

Hours Worked: 120

Preliminary Assessment

White Chemical Company
Foot of East 22nd Street
Bayonne, Hudson County, New Jersey
EPA ID NJD001239185

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

EPA

I. IDENTIFICATION
01 STATE: NJ | 02 SITE NUMBER: D001239185

II. SITE NAME AND LOCATION

01 SITE NAME	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
White Chemical Company	Foot of East 22nd Street

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG. DIST
Bayonne	NJ	07002	Hudson	09	

09 COORDINATES LATITUDE	LONGITUDE	
40° 40° 00"	74° 07' 12"	Block 381 A Lot A 1

10 DIRECTIONS TO SITE (Starting from nearest public road)
Take Exit 14A from the New Jersey Turnpike. Follow Avenue E South to East 22nd Street and turn left. Entrance to Bayonne Industries is on the right.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Bayonne Industries	Foot pf East 22nd Street		
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**
Bayonne	NJ	07002	( )
07 OPERATOR (If known and different from owner)	**08 STREET (Business, mailing, residential)**		
White Chemical Company, Inc.	Foot of East 22nd Street		
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**
Bayonne	NJ	07002	( )

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (Month Day Year) ☒ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (Month Day Year) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES ☐ NO DATE numerous (Month Day Year)
BY (Check all that apply)
☒ A. EPA ☒ B. EPA CONTRACTOR ☒ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION	
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN	1961 (Beginning Year)	1983 (Ending Year) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Organics, heavy metals, pesticides.
Attachment: A,C,D,E,F,G,L,M

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Documented contamination of soil and surface water. Potential exists for contamination of groundwater. Numerous air emission complaints during active site operations..
Attachments: D,E,F,G,H,I,J,K,L,M

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 3 - Waste Information and Part 4 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspection at your discretion) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Coleen Kokas	NJDEP/DHWM/BCM	(609) 633-0701

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Clare P. Sullivan	NJDEP	DHWM/BPA	(609) 633-2218	10 / 17 / 88 (Month Day Year)

EPA FORM 2070-12 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D001239185

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

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

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

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

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Decabromophenyl Phenyl Ether	1163195	Soil	56,000,000	ppb
OCC	Napthalane	91-20-3	Soil	24,000	ppb
MES	Antimony	7440-36-0	Soil	59,000	ppb
MES	Arsenic	7440-38-2	Soil	120,000	ppb
MES	Beryllium	7440-41-7	Soil	9,600	ppb
MES	Cadmium	7440-43-9	Soil	13,000	ppb
MES	Chromium	7440-47-3	Soil	110,000	ppb
MES	Copper	7440-50-8	Soil	5,500,000	ppb
MES	Lead	7439-92-1	Soil	940,000	ppb
MES	Mercury	7439-97-6	Soil	580,000	ppb
MES	Nickel	7440-02-0	Soil	1,600,000	ppb
MES	Selenium	7782-49-2	Soil	3,000	ppb
MES	Thallium	7440-28-0	Soil	1,700	ppb
MES	Zinc	7440-66-6	Soil	1,400,000	ppb
IOC	Cyanide	57125	Soil	990	ppb
OLW	Petroleum Hydrocarbons	999	Soil	23,000,000	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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

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

Attachment A: White Chemical Operations, raw materials, and finished products.
Attachment B : USEPA PBB Investigation, 1977
Attachment M: Analytical results, November 18, 1987 Sampling eposides.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D001239185

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

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

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

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

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	1-Bromooctadecane	999	SOIL	77,000,000	ppb
OCC	1-Bromotetradecane	999	soil	2300	ppb
OCC	Bromododecane	999	soil	180,000	ppb
SOL	Tetrachloroethene	127-18-4	soil	2200	ppb
SOL	Trichloroethene	79-01-6	soil	1600	ppb
OCC	Bis(2ethyl hexyl)phthalate	117-81-7	soil	6800	ppb
OCC	N-nitrosodiphenylamine	62-75-9	soil	6400	ppb
PSD	Aldrin	309-00-2	soil	2900	ppb
PSD	delta-BHC	319868	soil	11,000	ppb
PSD	Endrin Ketone	72-20-8	soil	120,000	ppb
OCC	Benzo(a)anthracene	56-55-3	soil	3000	ppb
OCC	Chrysene	218-01-9	soil	4800	ppb
OCC	Fluoranthene	206440	soil	7600	ppb
OCC	Hexachlorobutadiene	87683	soil	9400	ppb
OCC	Phenanthrene	85-01-8	soil	9400	ppb
OCC	Pyrene	129-00-0	soil	8600	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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

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

Attachment A: White Chemical operations, raw materials, and finished products.
Attachment F: USEPA PBB Investigation, 1977
Attachment M: Analytical results, November 18, 1987 Sampling episode.

EPA

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

I. IDENTIFICATION
01 STATE: NJ | 02 SITE NUMBER: D001239185

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

C1 X J. DAMAGE TO FLORA — 02 X OBSERVED (DATE 1977) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Lichen samples collected in June 1977 by USEPA, indicated 900 ppb of total PBB isomers to be present. Potential exists for further impact due to the potential of release of contaminants from stormwater run-off, groundwater discharge & release from sediments.
Attachment F

01 X K. DAMAGE TO FAUNA — 02 X OBSERVED (DATE 1977) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names of species)
Fish samples collected in June 1977 by USEPA indicated 160ppb of total PPB isomers to be present. Potential exists for further impact due to the potential for release of contaminants from storm water run-off, ground water discharge & release from sediments.
Attachment F

01 X L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE _____) X POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION Linchen and Fish samples collected in June 1977 indicated detectable levels of total PBB isomers to be present. As PBB accumulates in body fat, and the potential for continued release of these and other contaminants exists, the potential remains for contamination of the food chain. Attachment F

01 X M. UNSTABLE CONTAINMENT OF WASTES (Spills Runoff Standing liquids Leaking drums) — 02 X OBSERVED (DATE numerous) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
Numerous inspections revealed spills throughout the property, poor drum handling procedures and the use of unlined trenches for waste conveyance. Attachment: A, E,

01 X N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE _____) X POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Air releases which occurred during site operations may have resulted in damages to off site property.
Attachment: D

01 X O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 X OBSERVED (DATE 1977) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Samples collected from on-site sewer lines in 1977 indicated contamination with PBB isomers. These sewer lines on-site discharge to the Bayonne Industries separator basin. Attachment: F

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
There has been no evidence of illegal or unauthorized dumping at the site.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
As Dioxin precursors have been used at this site, the potential exists for dioxin to be present. Previous analysis for dioxin have been inconclusive due to interferances from other contaminants. Attachment: A

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

COMMENTS: A warehouse locate elsewhere in the Bayonne Industries complex was used for the storage of presumably finished product. The location is unknown.

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

Attachment A; White Chemical operations, raw materials and finished products.
Attachment B; Hydrogeologic Investigation, Bayonne Industries, July 1978.
Attachment E: NJDEPS Permit # NJ 0001538
Attachment D: Memo Re: DEQ Permits and violations

EPA FORM 2070-13 (7-81)

Attachment F: USEPA PBB Investigation, 1977
Attachment G : NJDOT Route 169 Construction Project
Attachment J: ACO, November 7, 1979
Attachment K : Facility Inspections, July 1979 to August 1984

EPA

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

I. IDENTIFICATION

01 STATE: NJ | 02 SITE NUMBER: D001239185

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

TONS: Unknown
CUBIC YARDS:
NO. OF DRUMS:

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

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

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	Chloroform	67-66-3	SOIL	1500	ppb
OCC	Benzo(b)fluoranthene	205-99-2	soil	5300	ppb
OCC	4-Bromophenyl Phenyl Ether	999	soil	8100	ppb
OCC	Benzo (a) pyrene	50-32-8	soil	6200	ppb
OCC	4,6-Dinitro-2-methyl phenol	534-52-1	soil	5600	ppb
OCC	2,4- Dinitrophenol	51-28-5	soil	6500	ppb
OCC	Pentachlorophenol	87-86-5	soil	9500	ppb
PSD	4,4"- DDD	6088-51-3	soil	83000	ppb
SOL	Trans-1,2-Dichloroethene	540-59-0	soil	1900	ppb
SOL	Benzene	71-43-2	soil	420	ppb
SOL	Methylene Chloride	75-09-2	soil	520	ppb
SOL	Monochlorobenzene	108-90-7	soil	1300	ppb
OCC	Phenol	108-95-2	soil	6100	ppb
SOL	Tetrachloroethane	79-34-5	soil	50000	ppb
OCC	Polybrominated Biphenyl Isomers	59536651	soil	2800	ppb
OCC	Polybrominated Biphenyl Isomers	59536651	surface water	31	ppb

V. FEEDSTOCKS (See Appendix for CAS numbers)

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

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

Attachment A: White Chemical operations, raw materials, and finished products.
Attachment F: USEPA PBB Investigation, 1977
Attachment M: Analytical results, November 18, 1987 sampling episode

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D001239185

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

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

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

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

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Polybrominated Biphenyl	59536651	Air	0.06	ng/m air
OCC	Polybrominated Biphenyl Isomers	59536651	Sediment	290000	ppb
OCC	Polybrominated Biphenyl Isomers	59536651	lichen	900	ppb
OCC	Polybrominated Biphenyl Isomers	59536651	fish	160	ppb
OCC	Polybrominated Biphenyl Isomers	5953665	human hair	8100	ppb
SOL	Carbon tetrachloride	56-23-5	effluent	245	ppb
SOL	Chloroform	67-66-3	effluent	5.5	ppb
SOL	Toluene	108-88-3	effluent	3.2	ppb
SOL	Xylene	1330-20-7	effluent	7.8	ppb
SOL	Tetrachloroethane	79-34-5	effluent	48	ppb
OCC	Polybrominated Biphenyl Oxides	59536551	effluent	71.6	ppb
OCC	Polybrominated Biphenyl	59536651	effuent	41.4	ppb
	See attachment A for a complete list of compounds and products which were present on site.				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling results)

Attachment A: White Chemical operations, raw materials and finished products.
Attachment F: USEPA PBB Investigation, 1977
Attachment M: Analytical results, November 18, 1987, sampling eposide.

EPA

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

I. IDENTIFICATION	
01 STATE: NJ	02 SITE NUMBER: D001239185

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

There is documented contamination of soil on-site. Ground-water is present at 5 feet. Additionally, wastes were discharged to an unlined separator basin owned by Bayonne Industries. There are no monitoring wells on-site. Attachment,B,E,F,M

01 ☒ SURFACE WATER CONTAMINATION — 02 ☒ OBSERVED (DATE June 1977) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Samples collected in the Platty Kill by USEPA in 1977 indicated contamination with PBB isomers to be present. The potential exists for continued contamination via runoff, discharge of groundwater, and release from sediments. Attachment: F

01 ☐ C. CONTAMINATION OF AIR — 02 ☒ OBSERVED (DATE June 1977) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Downwind and crosswind air samples collected by USEPA in June 1977 indicated levels of PBB isomers at 0.6 nonograms per cubic meter of air sampled. Through the history of site operations numerous complaints of odors and emissions were received.
Attachment: D,F

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

The potential exists due to the use of flammable materials and the potential for residuals of these materials to remain in the soil of the site.
Attachment A

01 ☒ E DIRECT CONTACT — 02 ☒ OBSERVED (DATE 1977) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Human hair samples collected in June 1977 indicated levels of 8100ppb total PBB isomers. Numerous complaints were received concerning lachrimatory odor. Poor housekeeping practices frequently observed would allow for the potential for direct contact
Attachment: D,F,G,K

01 ☒ F CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE numerous) — ☐ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED _____ (ACRES) — 04 NARRATIVE DESCRIPTION

There is observed contamination of soil on-site with organics and inorganics.
Attachment: J,M

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

Water supply for the city is from upstate resevoirs.

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

Potential for exposure exists due to numerous spills and releases. The potential for exposure continues to exist during site remediation. Lachrimatory odors rendered workers in near-by facilities unable to work when facility was active. Human hair samples ***

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

Previous air releases had the potential to affect off-site populations. The Bayonne Industries complex is fenced and guarded to prevent unauthorized access to the site. Attachment D

*** collected in 1977 showed elevated levels of PBB isomers. Attachment: D,F,G, K

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D001239185

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
X A. NPDES	NJ0001538	March 1979	Unknown	DSW
☐ B. UIC				
X C. AIR	Plant ID 10412	variable		11 permits regulating emissior
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				Attachment C,D,E

III. SITE DESCRIPTION

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

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify) N/A

05 OTHER

☐ A. BUILDINGS ON SITE
Not at present

06 AREA OF SITE

3.4 (Acres)

07 COMMENTS

Poor drum handling practices noted on numerous inspections. Corroded drums observed exposing the plastic liners to the elements. Pipes leading from tanks observed to lead to the ground surface. Unlined trenches used to transport wastewater to separatio basin in the Bayonne Industries Complex. Attachment A,E,F,I,J,K,L

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE XX C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

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

Poor housekeeping practices were noted during all inspections. Drums were observed in such a deterioated conditions that the plastic liners were exposed. Spills were noted throughout the facility. Attachment K

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES X NO

02 COMMENTS

Wastes are not easily accessible to unauthorized personnel as a fence, operated by security surrounds the Bayonne Industries Complex.

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

AttachmentA : White Chemical operations, raw materials, and finished products.
Attachmnet C: DEQ Permits
Attachment D: Memo Re: DEQ Permits and violations
ATtachment E: NJDES Permit # NJ 0001538
~~Attachment F: USEPA PBB Investigation, 1977~~

Attachment J: NOV, November 7, 1987
Attachment J: ACO, August 5, 1979
Attachment K: Facility Inspections, July 1979 to August 1984
Attachment L: White Chemical Sampling and Analtyical Plan, July 1987

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D001239185

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

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

N/A

02 STATUS

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

N/A

03 DISTANCE TO SITE

A. _____ (mi)
B. _____ (mi) N/A

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

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

02 POPULATION SERVED BY GROUND WATER N/A

03 DISTANCE TO NEAREST DRINKING WATER WELL N/A (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
5 to 7 (ft)	West	5 to 7 (ft)	Unknown (gpd)	☐ YES ☒ NO

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

Within a five mile radius of the facility, there are at least 11 wells ranging in depth from 35 to 400 feet in depth. The nearest well is located within 3.2 miles and the depth is unknown.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: Site is located on reclaimed marsh land.	☒ YES ☐ NO	COMMENTS: Site is located on reclaimed marsh land.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

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

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Platty Kill Creek	☒	≤1000 ft (mi)
Kill Van Kull	☐	0.25 (mi)
Newark Bay	☐	1.1 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 22,000 NO. OF PERSONS	B. 104,000 NO. OF PERSONS	C. 172,000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

~ 2000 ft (mi)

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

Numerous

04 DISTANCE TO NEAREST OFF-SITE BUILDING

adjacent (mi)

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

The facility is located within the densely populated city of Bayonne and north of Staten Island, New York, across the Kill Van Kull.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D001239185

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} – 10^{-8} cm/sec ☐ B. 10^{-4} – 10^{-6} cm/sec ☐ C. 10^{-4} – 10^{-3} cm/sec ☒ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

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

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
80 to 100 (ft)	Unknown (ft)	Unknown	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
12 (in)	2.5 (in)	N/A %	N/A	Unknown %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

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

N/A

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. _____ (mi)

OTHER: B. > 2 miles (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

N/A (mi)

ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL, INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. adj. (mi)	B. ~2000 ft (mi)	C. N/A (mi)	D. N/A (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The topography of the surrounding area is generally flat and poorly drained. The area immediately surrounding the site is heavily industralized. The area between the property and the Upper New York Bay is covered by mainly oil-related industries. The residential area of the City of Bayonne lies to the West, Northwest, and North of the ares.

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

Attachment B: Hydrogeologic Investigation, Bayonne Industries, July 1978

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D001239185

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	--		
SURFACE WATER	~ 5	Environmental Science & Engineering, Gainsville, Fla 1977	
WASTE	--		
AIR	2	Environmental Science & Engineering, Gainsville, Fla. 1977	
RUNOFF	--		
SPILL Soil/Sediment	~ 7	Environmental Science & Engineering, Gainsville, Fla. 1977	
SOIL	~ 50	Northeast Research Institute Inc, Farmington CT., March 1988	
VEGETATION algae lichen fish	3	Environmental Science &Engineering, Gainsville, Fla 1977	
OTHER human hair	6	Environmental Science & Engineering, Gainsville, Fla 1977	

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
	N/A

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL N/A

02 IN CUSTODY OF N/A
(Name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS N/A

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

N/A

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

Attachment F: USEPA PBB Investigation, 1977
Attachment M: Analytical Results, November 18, 1987 Sampling Episode.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D001239185

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	04 SIC CODE
Bayonne Industries		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE
Foot of East 22nd Street	Bayonne	NJ	07002

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	11 SIC CODE
IMTT		

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE
321 St. Charles Street	New Orleans	LA	70130

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER	11 SIC CODE

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER	11 SIC CODE

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER	11 SIC CODE

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE

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

01 NAME	02 D+B NUMBER	04 SIC CODE
Tide Water Refinery		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE
Foot of East 22nd Street	Bayonne	NJ	07002

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

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

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

Bayonne Tax Assessor
Attachment B: Hydrogeologic Investigation, Bayonne Industries, July 1978

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D001239185

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
N/A - Inactive	

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

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER
	Bayonne Industries

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

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

01 NAME	02 D+B NUMBER
White Chemical Company	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Foot of East 22nd Street	2869

05 CITY	06 STATE	07 ZIP CODE
Bayonne	NJ	07002

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
1961- 1983	Bayonne Industries

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER
Tide Water Refinery	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Foot of East 22nd Street	

05 CITY	06 STATE	07 ZIP CODE
Bayonne	NJ	07002

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
1880 to unknown	Tide Water Refinery

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

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

Bayonne Tax Assessor

Attachment B: Hydrogeologic Investigation of the Subsurface Occurrence of Oil and Alternative Methods. Bayonne Industries, July 1978.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D001239185

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
N/A	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
N/A			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
N/A			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

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

N/A

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D001239185

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ H. ON SITE BURIAL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ L. ENCAPSULATION 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ N. CUTOFF WALLS 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	
01 ☐ Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	NONE REPORTED	

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D001239185

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE REPORTED

01 ☒ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

In June 1983, White Chemical relocated operations from Bayonne to Newark. The moving and decommissioning of all equipment was overseen by NJDEP Metro Regional Office. Currently, remedial activities are taking place at the Bayonne site under the direction of NJDEP Bureau of Case Management.

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

Attachment L: White Chemical Sampling and Analytical Plan, July 1987

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D001239185

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION XX YES ☐ NO

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

An Order was issued to both Bayonne Industries and White Chemical on June 9, 1976 for the operation of a bromination kettle, controlled by a packed tower and scrubber, without a permit. This apparatus was apparently installed about two years previously and consisted of a 4000 gallon P. Fandler kettle for the bromination of biphenyl.
The USEPA issued a Findings of Violation and Order for Compliance to White on March 29, 1979. This document outlined a discharge compliance schedule which was to be met as a contigency for issuance of NJDES Permit # NJ 0001538.
The NJDEP issued a Notice of Violation on November 7, 1979 in response to conditions observed at the facility on August 10, 1979. White was ordered to cease all waste storage, processing, and disposal activities and to identify total number of drums, contents, and to identify and remove materials which had leaked or spilled from the drums. These materials were then to be properly manifested and shipped off-site to an authorized disposal facility.
On July 14, 1981, an Order was issued by NJDEP due to the failure of White to submit a plan to achieve compliance for source operations relating to violatile organic substances. The company stated the reason for not filing the report was the pending move to Newark. An Administrative Consent Order was issued on August 5, 1983, which oulined the necessary steps that must be taken regarding site remediation by White Chemical.

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

Attachment H: Findings of Violation and Order for Compliance, March 29, 1979
Attachment I: NOV, November 7, 1979
Attachment J: ACO, August 5, 1983.

ATTACHMENTS

MAPS

1. USGS QUADRANGLE MAP
2. SITE MAP
3. TAX MAP
4. N.J. ATLAS BASE MAP
5. GEOLOGIC OVERLAY
6. WATER SUPPLY OVERLAY
7. COMPUTER GENERATED WATER WITHDRAWAL MAP

ATTACHMENTS

A. WHITE CHEMICAL OPERATIONS, RAW MATERIALS, AND FINISHED PRODUCTS.

B. HYDROGEOLOGIC INVESTIGATION OF THE SUBSURFACE OCCURRENCE OF OIL AND ALTERNATIVE RECOVERY METHODS. BAYONNE INDUSTRIES, JULY 1978.

C. DEPARTMENT OF ENVIRONMENTAL QUALITY PERMITS.

D. MEMO RE: DEPARTMENT OF ENVIRONMENTAL QUALITY PERMITS AND VIOLATIONS.

E. NPDES PERMIT NO. NJ0001538.

F. USEPA POLYBROMINATED BIPHENYL INVESTIGATION, 1977.

G. NJDOT ROUTE 169 CONSTRUCTION PROJECT.

H. FINDINGS OF VIOLATION AND ORDER FOR COMPLIANCE, MARCH 29, 1979.

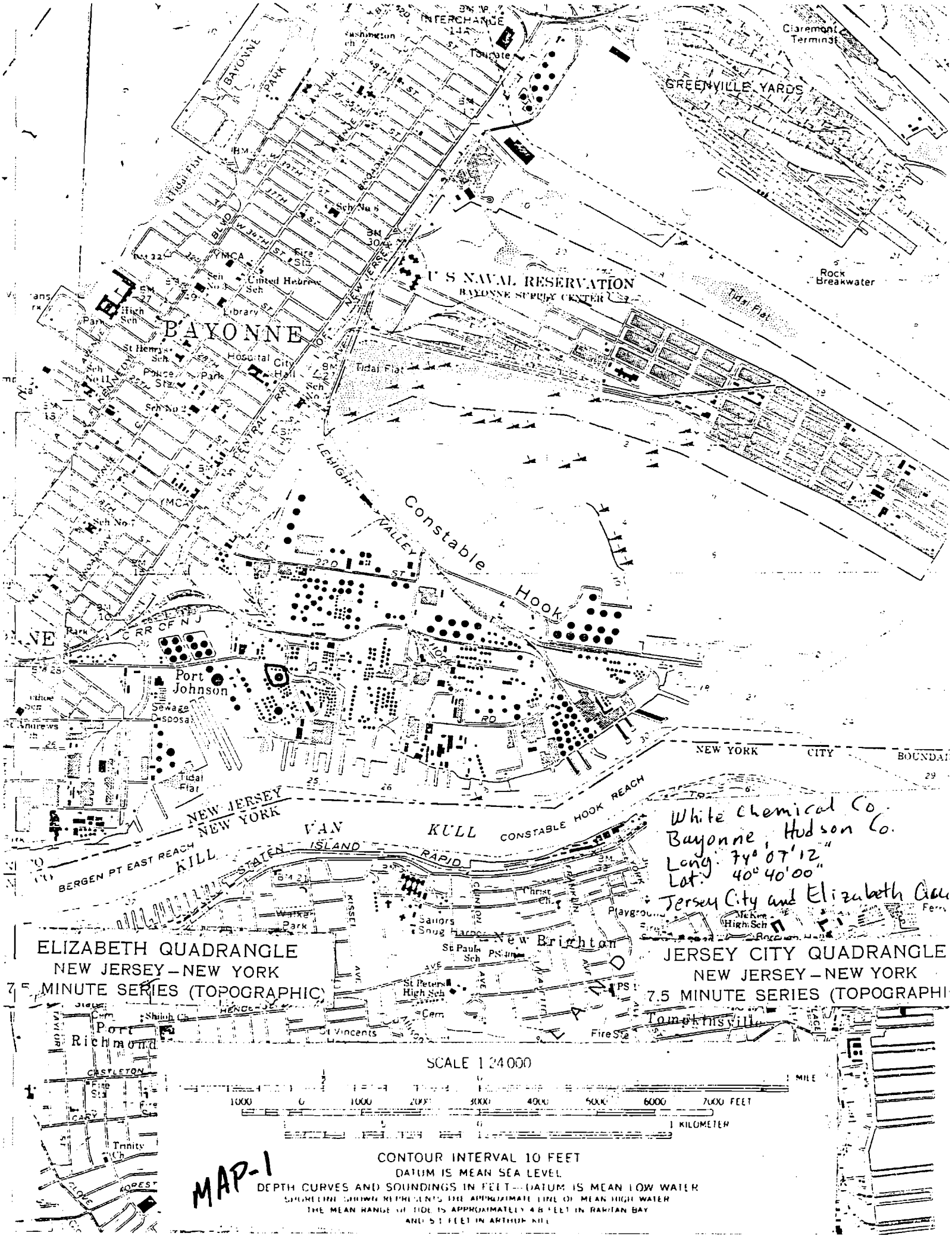
I. NOTICE OF VIOLATION, NOVEMBER 7, 1979.

J. ADMINISTRATIVE CONSENT ORDER, AUGUST 5, 1983.

K. FACILITY INSPECTIONS, JULY 1979 TO SEPTEMBER 1984.

L. WHITE CHEMICAL SAMPLING AND ANALYTICAL PLAN, JULY 1987.

M. ANALYTICAL RESULTS, NOVEMBER 18, 1987 SAMPLING EPISODE.



White Chemical Co.
Bayonne, Hudson Co.
Long. 74° 07' 12"
Lat. 40° 40' 00"

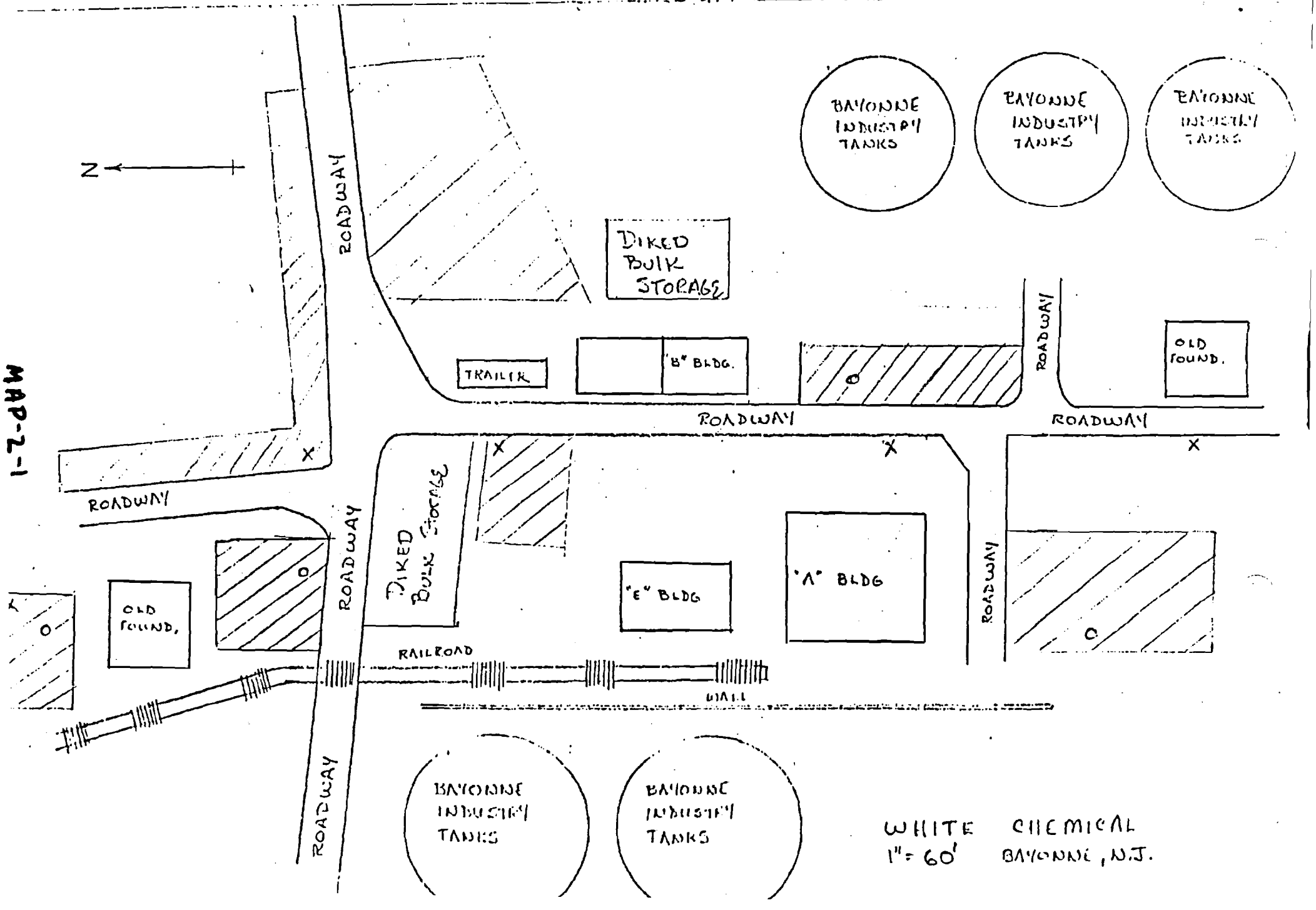
MAP-1

WHITE CHEMICAL CORP
MAP 7-2
36"
24"
16"
PLATTY
KILL
PROPERTY LINE
ROAD
SHOP
1701
1704
1705
1702
1709
1710
1708
1707
1706
1700
G-205
120 x 43
G-206
120 x 43

D - DRUM STORAGE AREAS

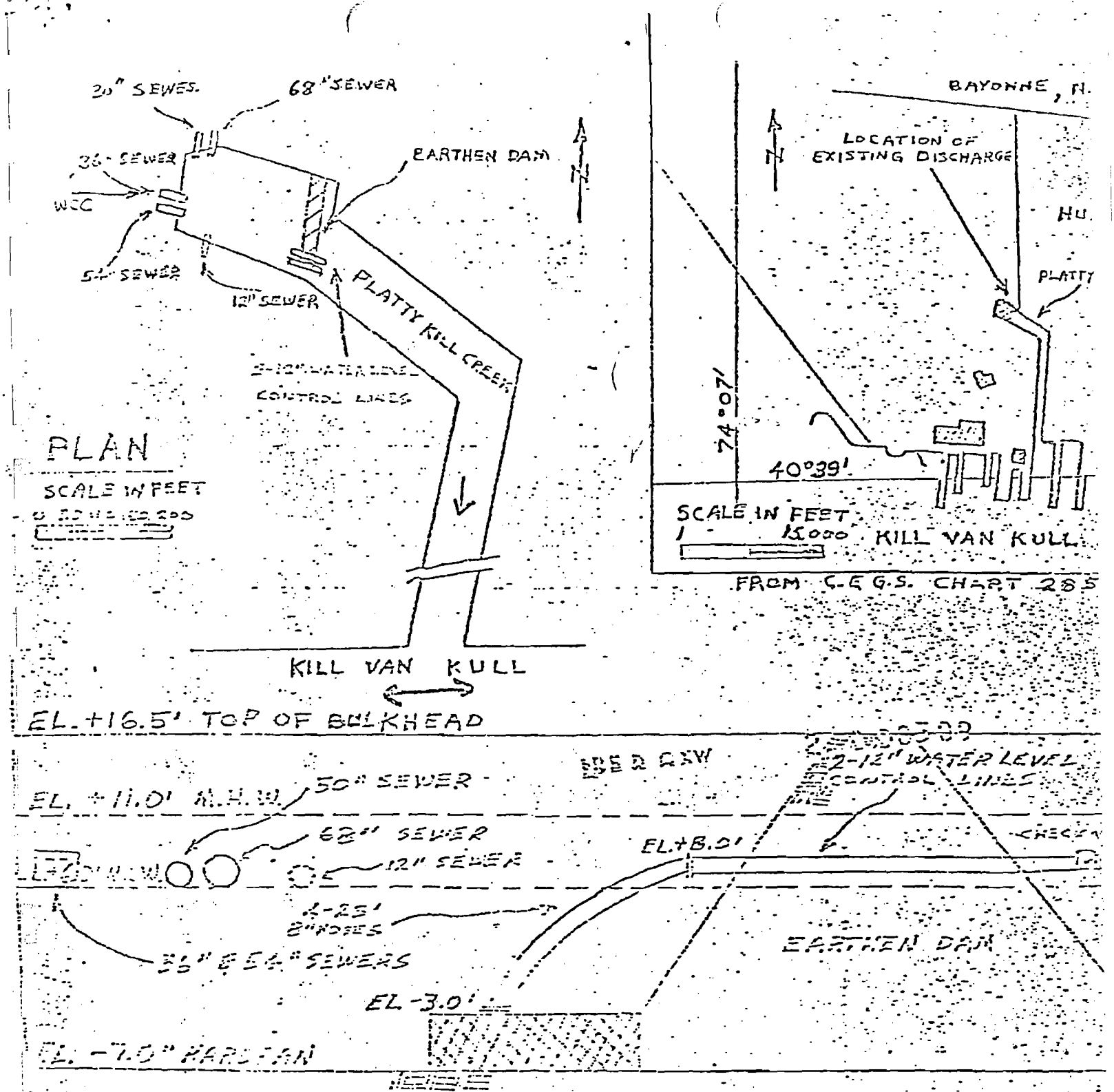
X - DENOTES STABLEX SAMPLING POINTS

O - AREAS WHERE DRUM SPILLS HAD OCCURRED AND WERE CLEANED UP



MAP-2-1

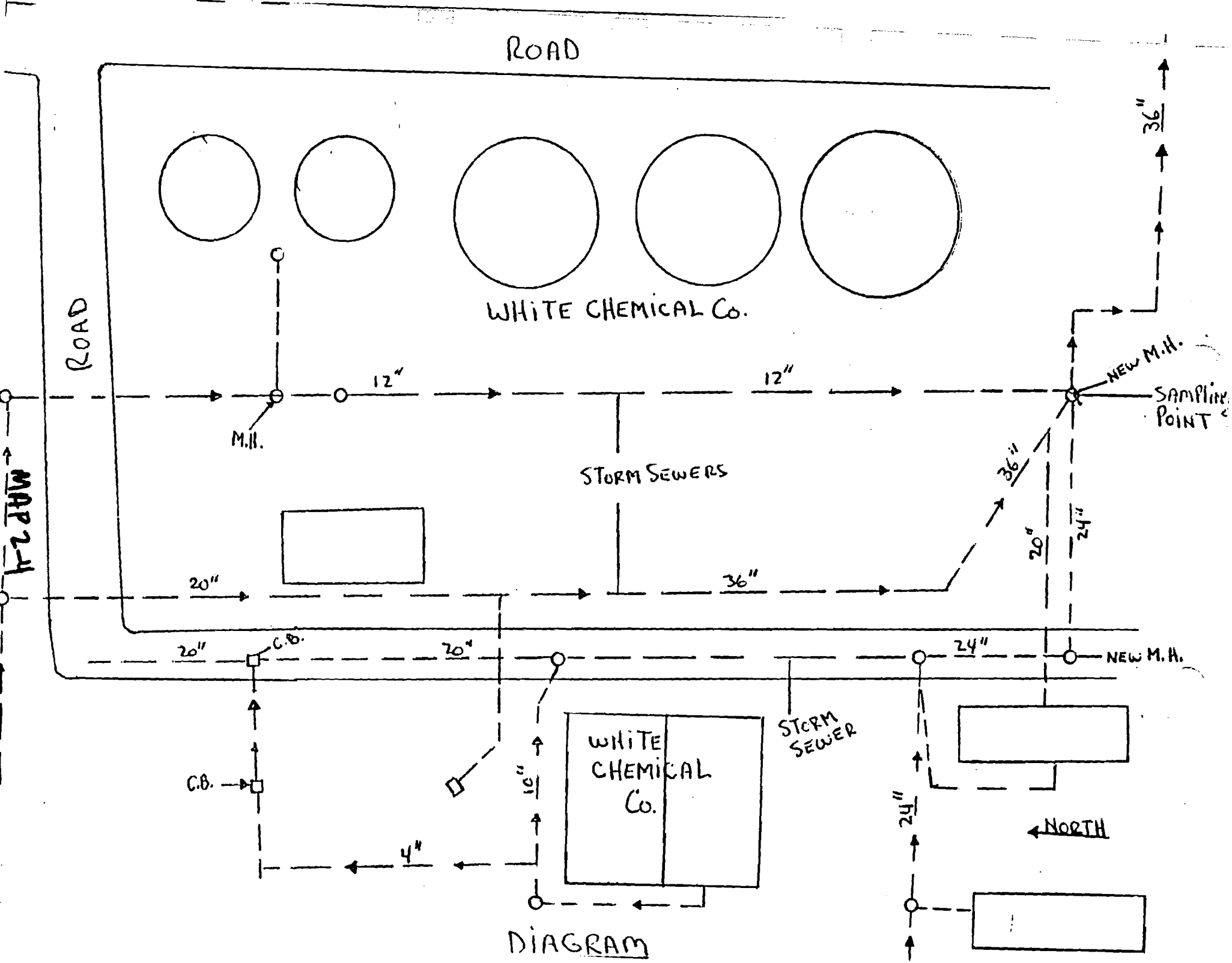
WHITE CHEMICAL
1" = 60' BAYONNE, N.J.



DRAWING 11A

LOCATION MAP
WHITE CHEMICAL CORPORATION
Bayonne Industries

MAP 2-3


ROAD
ROAD
WHITE CHEMICAL Co.
36"
NEW M.H.
SAMPLING POINT
12"
12"
M.H.
STORM SEWERS
36"
20"
24"
20"
36"
MAP 24
20"
C.B.
20"
24"
NEW M.H.
C.B.
10"
WHITE CHEMICAL Co.
STORM SEWER
24"
NORTH
4"
DIAGRAM

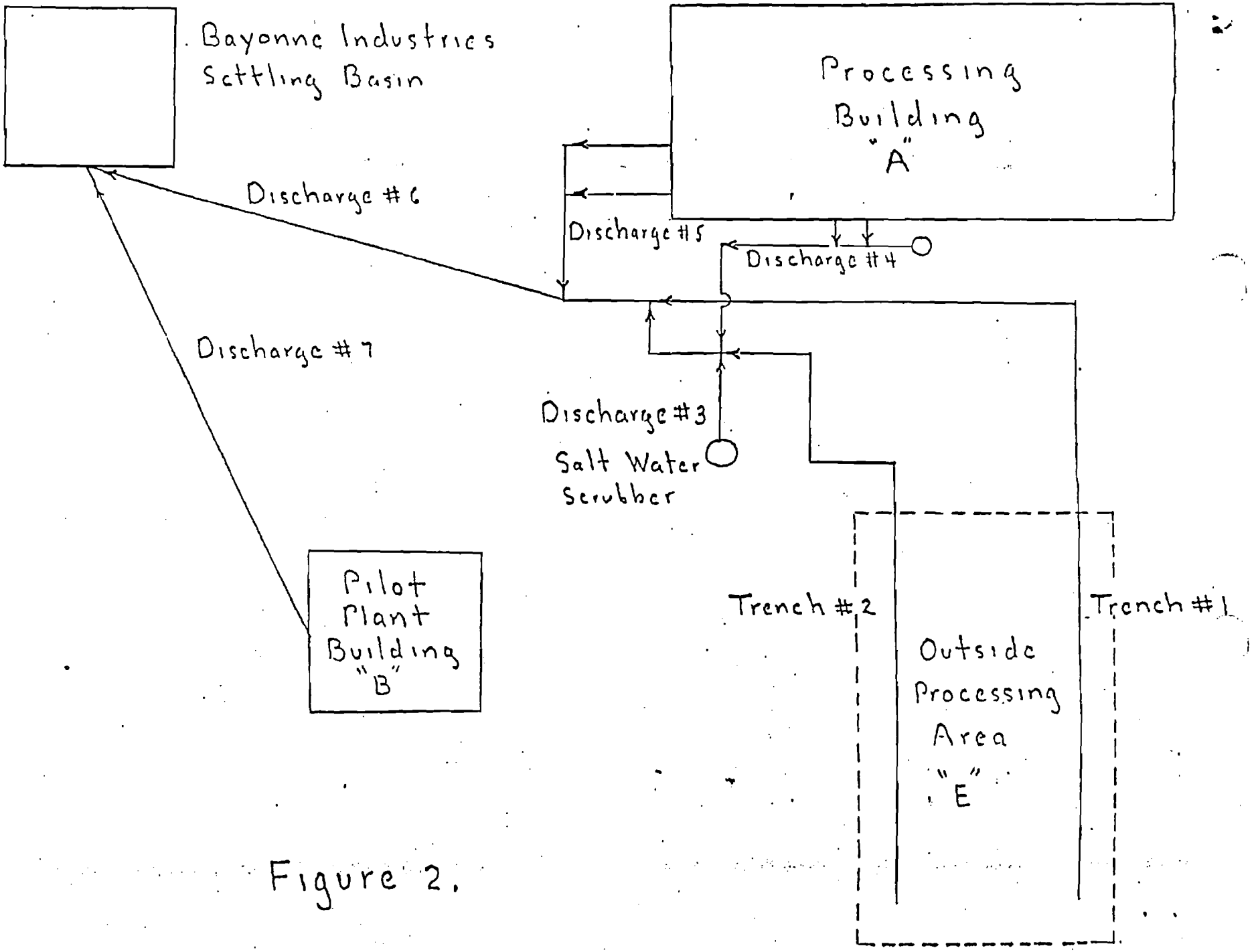
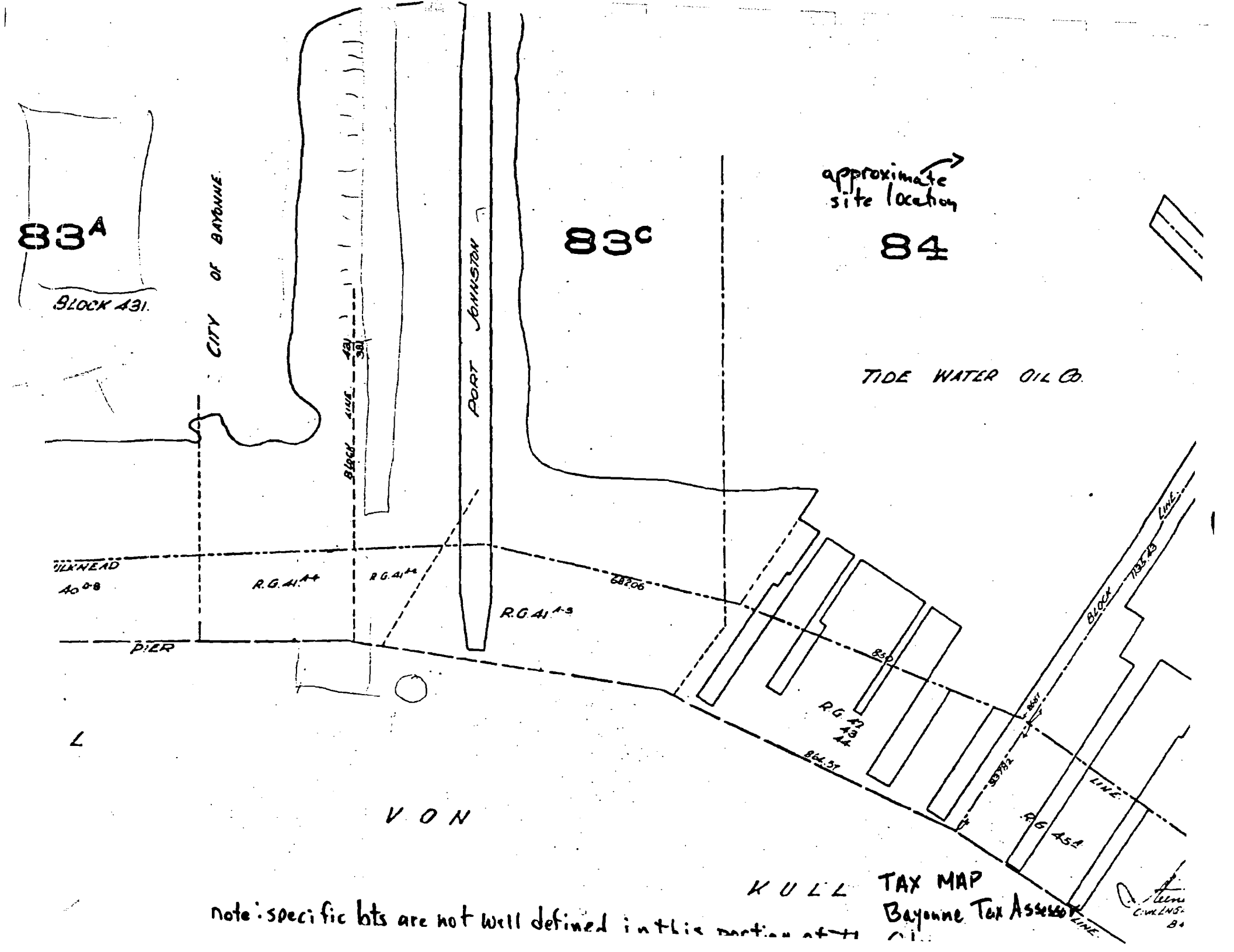
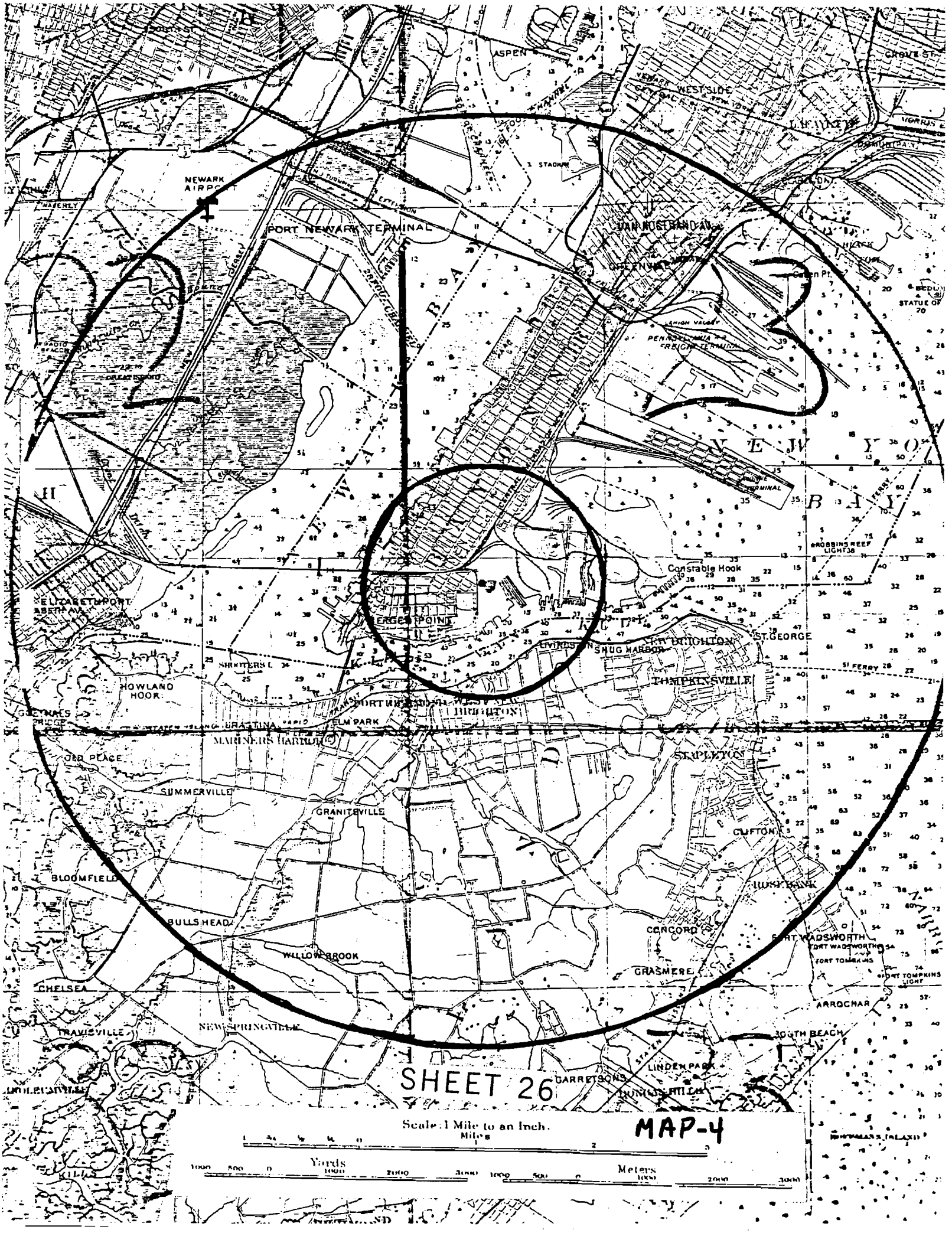


Figure 2.

MAP 2-5



note: specific lots are not well defined in this portion of the City



ASPEN
WEST SIDE
NEWARK AIRPORT
PORT NEWARK TERMINAL
VAN NOSTRAND AV.
GREENVILLE
LEHIGH VALLEY
PENNSYLVANIA R.R. FREIGHT TERMINAL
STATUE OF
NEW YORK BAY
ROBBINS REEF LIGHT
Constable Hook
ELIZABETHPORT
BERGEN POINT
ST. GEORGE
NEW BRIGHTON
SNUG HARBOR
TOMPKINSVILLE
HOWLAND HOOK
PORT RICHMOND
WEST NEW BRIGHTON
ELM PARK
MARINERS HARBOR
OLD PLACE
STAPLETON
SUMMERVILLE
GRANITEVILLE
CLIFTON
BLOOMFIELD
ROSEBANK
BULLS HEAD
CONCORD
FORT WADSWORTH
FORT TOMPKINS
WILLOW BROOK
GRASMERE
CHELSEA
ARROCHAR
TRAVISVILLE
NEW SPRINGVILLE
SOUTH BEACH
LINDEN PARK
GARRETSONS
SHEET 26
Scale: 1 Mile to an Inch.
Miles
Yards
Meters
MAP-4

LEGEND FOR ATLAS SHEET 26 (GEOLOGY)

△ — INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE (INCLUDING PRIVATE WELLS)

□ — PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE

⊕ — UNSUCCESSFUL ROCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊙ — UNSUCCESSFUL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊡ — NO TEST – NO DATA ON YIELD

——— FAULT (DASHED WHERE INFERRED)

——— CONTACT (DASHED WHERE INFERRED)

PHYSIOGRAPHIC PROVINCE BOUNDARY

WATER SUPPLY TRANSMISSION LINE

NOTE: WHERE THE PRECAMBRIAN FORMATION BOUNDARIES TERMINATE ABRUPTLY, IT IS THE GEOLOGIST'S OPINION THAT THE GEOLOGICAL COMPLEXITY OF THE AREA PREVENTS FURTHER INTERPRETATIONS.

Kmr — CRETACEOUS MAGOTHY AND RARITAN FORMATIONS (SAND AND CLAY)

Trb — TRIASSIC BRUNSWICK FORMATION

Trc — TRIASSIC CONGLOMERATE BEDS OF THE STOCKTON FORMATION

Trl — TRIASSIC LOCKATONG FORMATION

Trdb — TRIASSIC DIABASE

Trbs — TRIASSIC BASALT FLOWS

Sd — SILURIAN DECKER LIMESTONE AND LONGWOOD SHALE FORMATIONS

Sgp — SILURIAN GREEN POND CONGLOMERATE

Omb — ORDOVICIAN MARTINSBURG SHALE

eOk — CAMBRO ORDOVICIAN KITTATINNY LIMESTONE

eh — CAMBRIAN HARDYSTON SANDSTONE

PRECAMBRIAN:

gh - HORNBLENDE GRANITE WITH PYROXENE GRANITE

ga - ALASKITE

am - AMPHIBOLITE

px - PYROXENE GNEISS

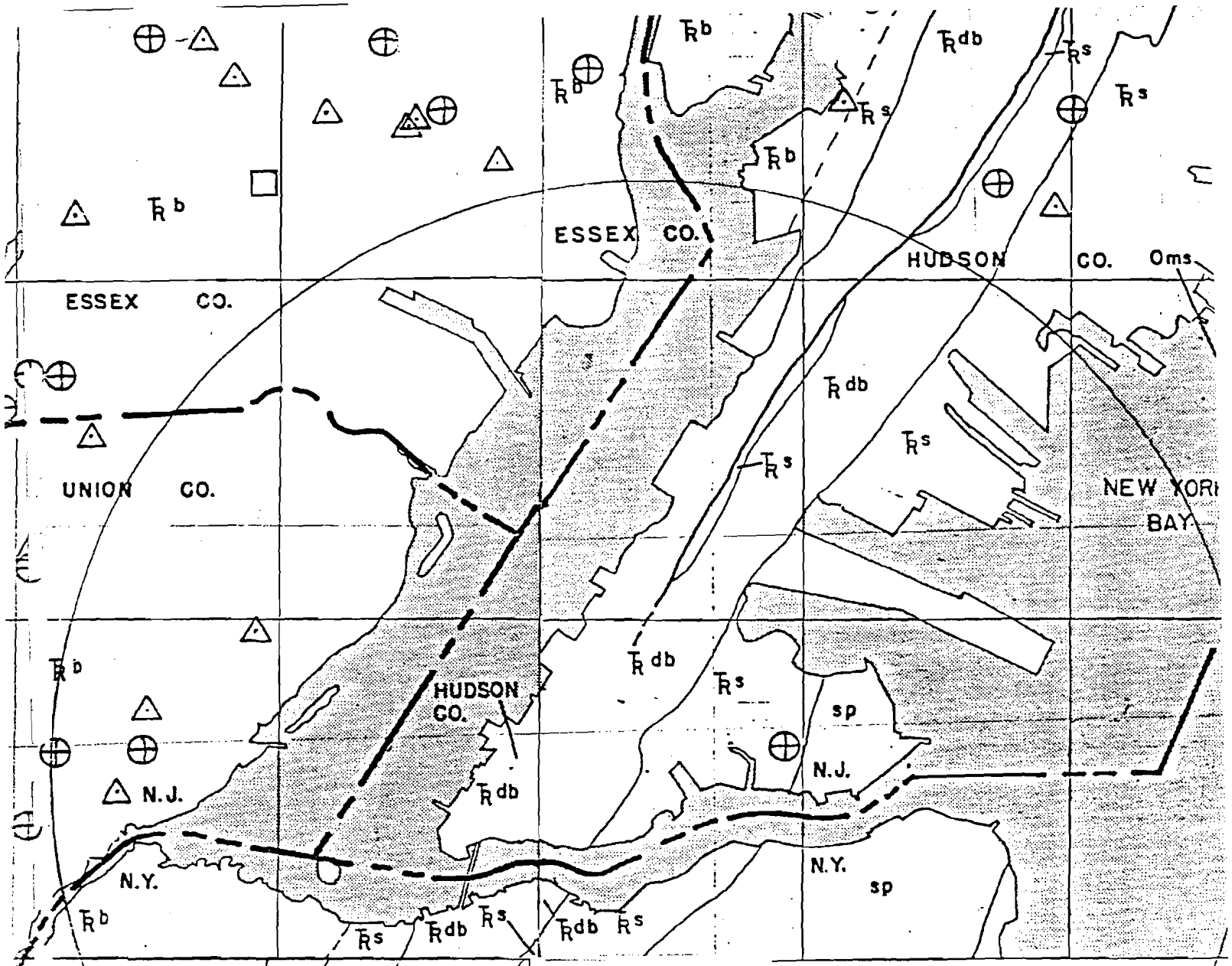
gnq - QUARTZ PLAGIOCLASE GNEISS

gnb - BIOTITE GNEISS

sk - SKARN, GRAPHITE SCHIST

fnd — FORMATION NOT DETERMINED

MAP 5-1



SHEET 26

GEOLOGIC MAP

Scale: 1:63,360

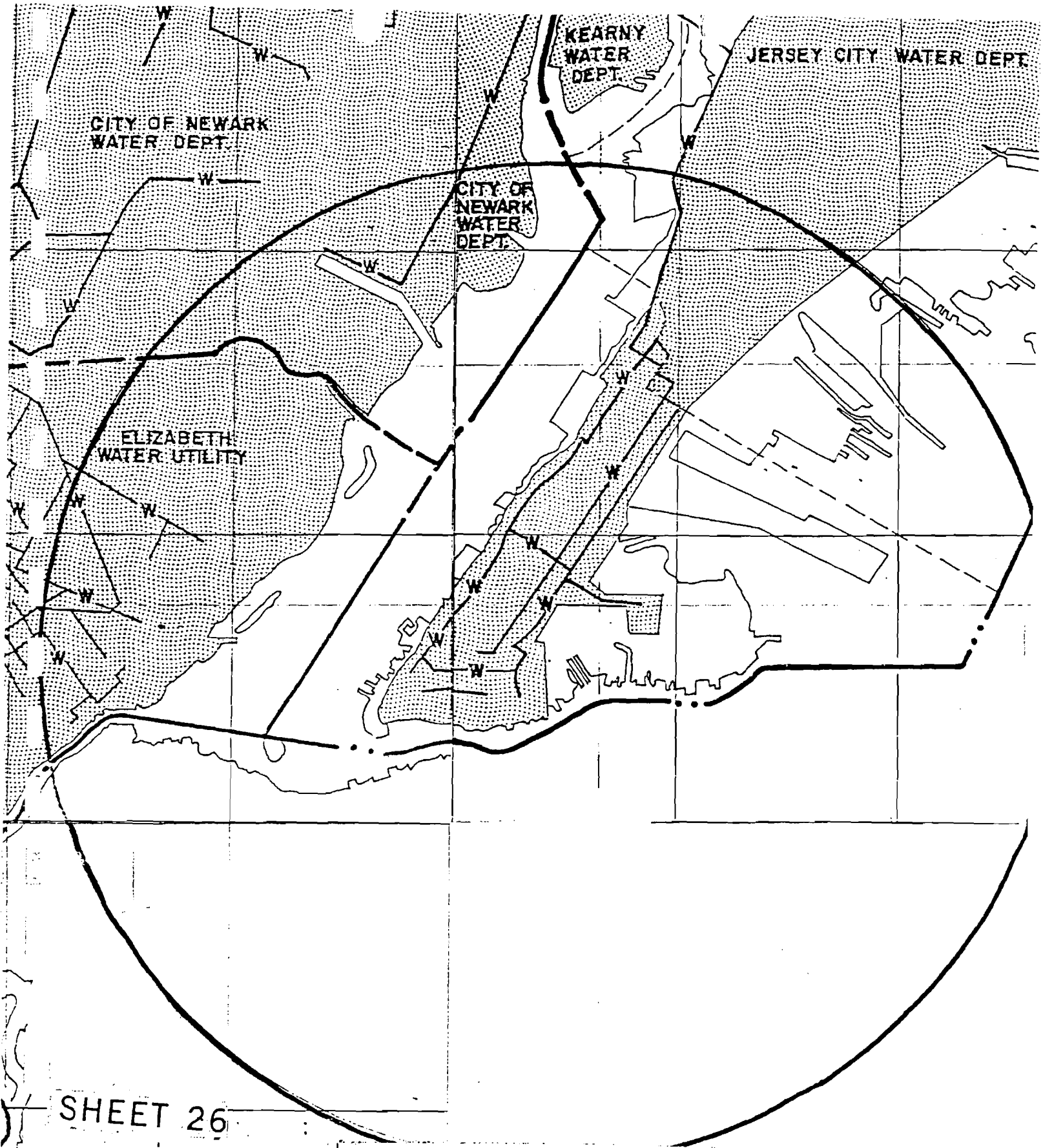
1 ½ 0 1 2 3 Kilometers

1 ½ ½ ¼ 0 1 2 3 Miles

SURVEYED BY GEORGE J. HALLASH-KUN, TOPOGRAPHIC ENGINEER

DRAFTED BY JOHN F. OLSCHEWSKI

MAP 5-2



SHEET 26

WATER SUPPLY MAP

MAP 6-1

Scale: 1:63,360

1 ½ 0 1 2 3 Kilometers

1 ¾ ½ ¼ 0 1 2 3 Miles

SUPERVISED BY GEORGE J. HALASH-KUR, TOPOGRAPHIC ENGINEER

DRAFTED BY JOHN F. OLSCHEWSKI

BLOCK #26-22 8/75

A. Elizabeth

B. Arthur Kill-Elizabeth, Elizabeth Channel, Morses Creek; Passaic-Lower Passaic

C. 1. Newark WSO AP - Detailed meteorologic data

2. Map No.	Location	Period of Record
67	Elizabeth River at Irvington	1931-1938
68	Elizabeth River at Nye Ave., Irvington	7/23/38
72	Elizabeth River at Elizabeth	1921-
3. 262	Passaic River at Harrison	1967-1971
272	Elizabeth River at Morris Ave., Elizabeth	1964-

Water Quality Standards: (explained in Atlas Sheet description)
FW3, TW2 except where classified TW3

D. Brunswick Formation (Trb), Stockton Formation (Trs), Diabase (Trdb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Wisconsin Terminal Moraine, Red Sandstone Plain, Hackensack Meadows, Newark Bay, Palisades Ridge
Elevations (ft.above sea level): ridges 300, valleys 0
Relief (ft.): 200

2. a. Normal Year: 44"
Dry Year: 36"
Wet Year: 53"

b. January: 32°F
July: 74°F

c. 243 days. Last killing frost: 4/15; first killing frost 10/20

F. Essex County:
Weequahic Park
Union County:
Elizabeth River Park
Warinanco Park

H. Boxwood Hall/Boudinot Mansion, Elizabeth (State Owened)

MAP 6-2

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
26-22-143	Irvington Smelting & Ref.Wks.	1953	71	209	192	Trb
26-22-143	"	1953	62'4"	304	300	"
26-22-145	Associated Mech.Devices	1960	83	250	80	"
26-22-149	Gallo Asphalt Co.	1961	107	201	200	"
26-22-213	Krueger Brewing Co.			656	435	"
26-22-228	Smith & Smith Funeral Parlor			776	25	"
26-22-234	U.S. Navy			565	39	"
26-22-237	Conmar Corp.			300	450	"
26-22-262	National Lock Washer Co.			800	100	"
26-22-275	Linde Air Products Co.	1954	44'5"	500	124	"
26-22-293	New York Port Authority	1968	60	370	260	"
26-22-322	Standard Bitulithic Co.	1964	89'11"	406	360	"
26-22-327	Pfeiffer, H.			505	12	"
26-22-333	Arkansas Co., Inc.	1965	72'9"	400	65	"
26-22-333	Ronson Metals Corp.	1965	80	300	220	"
26-22-334	Wilson, H.A. Co.			778	8	"
26-22-345	Chem-Fleur	1965	97	306	200	"
26-22-355	Englehard Ind., Inc.	1966	54/79'8"	428	167	"
26-22-355	"	1965	80'7"	400	401	"
26-22-356	"	1966	78.5/92	495	4	"
26-22-368	Rutherford & Delaney Hldg.Co.	1956	42	220	100	"
26-22-411	Bristol Meyers	1967	49	500	159	"
26-22-418	Dillon-Beck Mfg. Co.			379	100	"
26-22-449	Elizabethtown Water Co.			400	550	"
26-22-463	Orbis Products Corp.	1958	157	350	12	"
26-22-517	Pennick, S.B. Co.	1961	64'10"	585	24	"
26-22-518	Pure Carbonic			600	30	"
26-22-546	Black Diamond Grit Co.	1960	92	265	150	"
26-22-574	Londat Aetz Fabric Co.	1965	50	600	30	"
26-22-574	Elizabeth Abbatoir			641	75	"
26-22-744	Morey LaRue Laundry			700	15	"
26-22-745	"			600	14	"
26-22-785	Stevenson Car Co.			300	95	"
26-22-786	Feldman Brothers			805	54	"
26-22-795	Reichold Chemical Co.	1967	39'6"	400	415	"
26-22-828	Singer Mfg. Co.			1200	90	"
26-22-833	General Chemical Co.	1965	106	500	70	"
26-22-842	Clauss Bottling Works			500	50	"
26-22-847	Elizabethtown Gas & Light			300	0	"
26-22-852	Riker Motor Co.			500	0	"
26-22-854	Thomas & Betts Co., Inc.			500	264	"

J. Geodetic Control Survey monuments described
Index Map 26; adjacent Index Map 31

MAP 6-3

BLOCK #26-23,24

8/76

A. Elizabeth, Jersey City

B. Arthur Kill-Elizabeth Channel, Passaic-Upper Passaic

C. 1. Jersey City - Non-recording temperature and precipitation gauges

Water Quality Standards: (explained in Atlas Sheet description)
TW2 except where classified TW3

D. Brunswick Formation (Trb), Stockton Formation (Trs), Diabase (Trdb), Manhattan Schist (Oms), serpentine (sp)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain, Palisades Ridge, Hackensack Meadows, Newark Bay, New York Bay
Relief: 10'

2. a. Normal Year: 43"
Dry Year: 35"
Wet Year: 49"
b. January: 32°F
July: 74°F
c. 245 days. Last killing frost: 4/10; first killing frost: 10/20

F. Hudson County:
Lincoln Park
Div. of Parks and Forestry:
Liberty State Park
Little Basin Area

G. U.S. National Park Service:
Statue of Liberty National Monument (Ellis Island)
U.S. Army:
Military Ocean Terminal

H. Statue of Liberty National Monument
Hudson County Courthouse, Jersey City

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
26-23-111	Pfaff & Kendall	1965	81.5	200	100	Trb
26-23-142	Lincoln Farm Prod.Co.			109	25	Trbs
26-23-245	Spalding & Jennings			422	75	Trb-PG
26-23-291	Berkeley Industries	1956	115/140	335	60	Trbd
26-23-293/6	Snead & Co.			300	60	Q
26-23-333	Erie Railroad			197	157	Oms
26-23-334	Lembeck & Betz's Brewery			1000	33	Trs
26-23-344	Burnett Ave. (228) Co.			438	55	"
26-23-763	Esso Standard Oil Co.	1959	114/252	505	3	"

J. Geodetic Control Survey monuments described
Index Map 26; adjacent Index Maps 31,21,16

MAP 6-4

A. Arthur Kill, Elizabeth

B. Arthur Kill-Morses Creek, Rahway, Woodbridge

C. Water Quality Standards: (explained in Atlas Sheet description)
FW3, TW2 except where classified TW3

D. Wisconsin Terminal Moraine (Qtm), Magothy and Raritan Formation (Kmr), Stockton Formation (Trs), Diabase (Trdb), serpentine (sp)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain, Arthur Kill
Elevations (ft.above sea level): hills 30, valleys 0
Relief (ft.): 30

Physiographic Province: Coastal Plain
Subdivision: Inner Plain
Major Topographic Features: Arthur Kill, Clay and Marl Region
Elevations (ft.above sea level): hills 20, valleys 0
Relief (ft.): 20

2. a. Normal Year: 46"
Dry Year: 38"
Wet Year: 52"

b. January: 32°F
July: 74°F

c. 242 days. Last killing frost: 4/20; first killing frost: 10/20

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
26-32-417	Gulf Stream Development	1967	54	145	100	Trdb
26-32-485	Liebig Works			60	200	Q
26-32-487	U. S. Metals Refining Co.			117	0	Kmr

J. Geodetic Control Survey monuments described
Index Map 31; adjacent Index Map 26

MAP 6-5

SUBJECT TO REVISION

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 404000
LONGITUDE 740712

DRAFT

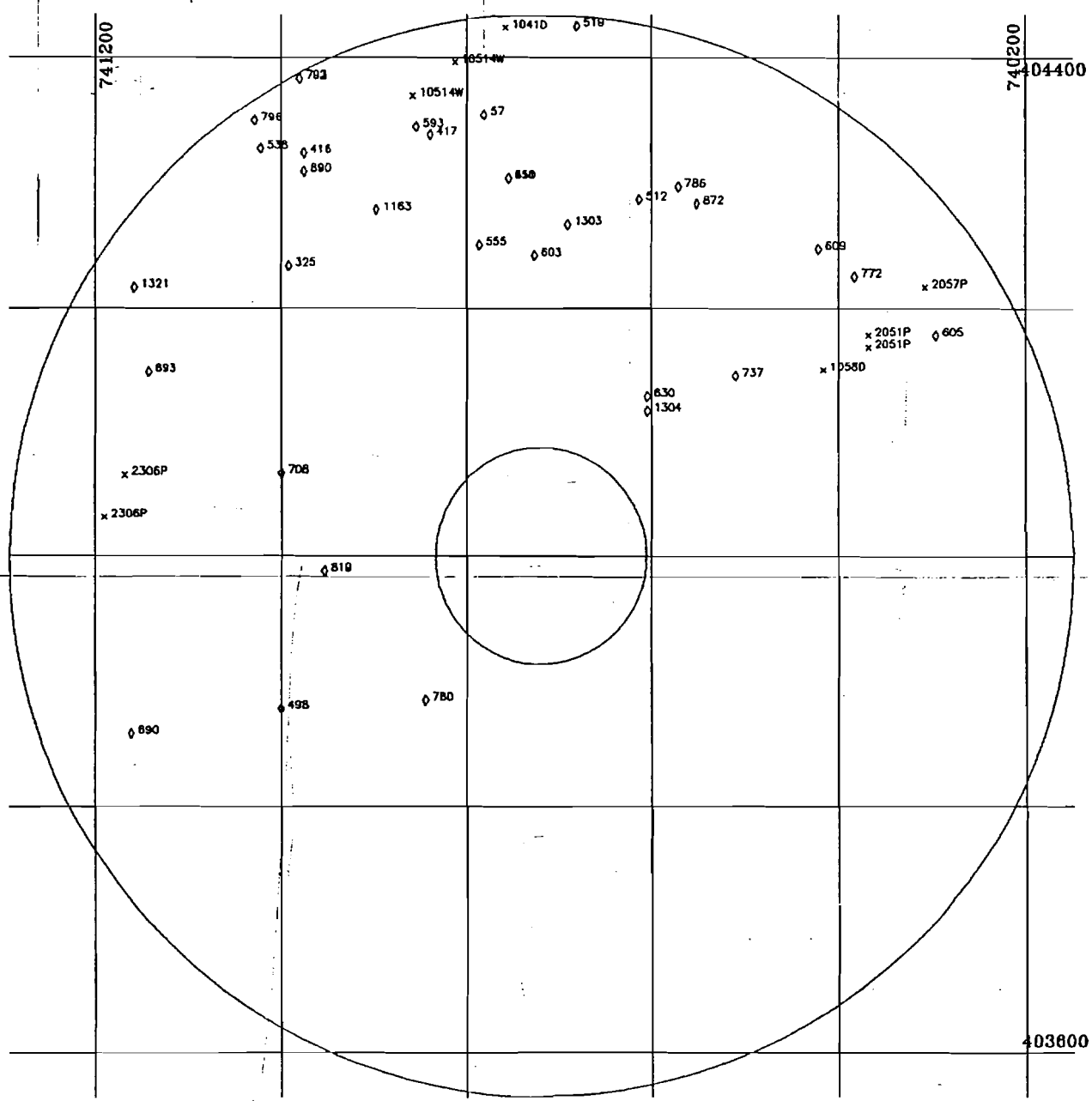
SCALE: 1:63,360
(1 Inch = 1 Mile)

Map 4-1

× WATER WITHDRAWAL POINTS
◊ NJGS CASE INDEX SITES
1 MILE AND 5 MILE RADII INDICATED

NJGS CASE INDEX DATA RETRIEVED FROM:
NEW JERSEY GEOLOGICAL SURVEY
ON 12/22/87

PLOT PRODUCED BY:
NJDEP
DIVISION OF WATER RESOURCES
BUREAU OF WATER ALLOCATION
CN-029
TRENTON, NJ 08625
DATE: 08/12/88



SUBJECT TO REVISION

Page 1 of PRELIMINARY SURVEY OF WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF 404000 LAT. 740712 LON. (IN ORDER BY DECREASING LONGITUDE) - 05/12/88

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
2306P	HAYWARD MANUFACTURING PRODUCTS	2604712	1	404019	741154		4.1	39	19	274	GTRB		100
2306P	HAYWARD MANUFACTURING PRODUCTS	2606867	2	404039	741141		4.0	39	19	275	GTRB		100
10514W	RONSON METALS CORP.	2604993	3	404342	740835	T	4.4	13	14	165			100
10514W	RONSON METALS CORP.	2607408	1	404358	740808	T	4.6	13	14	300	GTRB		150
1041D	AMERICAN REF-FUEL COMPANY	175 WELL	POINTS	404415	740735	F	4.9	13	14	35	GOSD		250
1056D	PORT LIBERTE PARTNERS			404130	740410	F	3.2	17	06				200
2051P	LIBERTY HILLSIDE ASSOC.	4600077	STANDBY	404147	740341		3.7	39	07	275	GTRB		250
2051P	LIBERTY HILLSIDE ASSOC.	4602078	STANDBY A	404141	740341		3.6	39	07	186	GTRB		250
2051P	LIBERTY HILLSIDE ASSOC.	4600079	MAIN B	404141	740341		3.6	39	07	400	GTRB		465
2051P	LIBERTY HILLSIDE ASSOC.	2600418	MAIN D	404141	740341		3.6	39	07	400	GTRB		350
2057P	SPINNERIN YARN CO., INC.	4600174	1	404210	740305	F	4.4	03	59	230	GTRB		120

Number of Observations: 11

MAP 7-2

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
1041D	AMERICAN REF-FUEL COMPANY	175 WELL	POINTS	404415	740735	F	4.9	13	14	35	GOSD		250
0514W	RONSON METALS CORP.	2603408	1	404358	740808	T	4.6	13	14	300	GTRB		150
	RONSON METALS CORP.	2604993	3	404342	740835	T	4.4	13	14	165			100
0558D	PORT LIBERTE PARTNERS			404130	740410	F	3.2	17	06				200
2551P	LIBERTY HILLSIDE ASSOC.	4600077	STANDBY	404147	740341		3.7	39	07	275	GTRB		250
	LIBERTY HILLSIDE ASSOC.	4600078	STANDBY A	404141	740341		3.6	39	07	186	GTRB		250
	LIBERTY HILLSIDE ASSOC.	4600079	MAIN B	404141	740341		3.6	39	07	400	GTRB		465
	LIBERTY HILLSIDE ASSOC.	2600418	MAIN D	404141	740341		3.6	39	07	400	GTRB		350
2057P	SPINNERIN YARN CO., INC.	4600174	1	404210	740305	F	4.4	03	59	230	GTRB		130
2306P	HAYWARD MANUFACTURING PRODUCTS	2604712	1	404019	741154		4.1	39	19	274	GTRB		100
	HAYWARD MANUFACTURING PRODUCTS	2606867	2	404039	741141		4.0	39	19	275	GTRB		100

Number of Observations: 11

MAP 7.3

Page 1 of NJGS CASE INDEX SITES WITHIN 5.0 MILES OF 404000 LAT. 740712 LON. AS OF 12/22/87 (IN ORDER BY DECREASING LONGITUDE) - 08/12/88

SITENUM	NAME	LAT	LON	DISTANCE	CONTAM	FMCODE1	FMCODE2	STATUS1	STATUS2
690	CHEMICAL CONTROL, ELIZABETH, UNION CO.	403835	741137	4.2	0	0100	3070	1	E
1321	J.F.HENRY CHEMICAL CO., NEWARK, ESSEX CO.	404210	741135	4.6	63	0110	3070	1	B
693	J.T. BAKER, PHILLIPSBURG, WARREN CO.	404129	741126	4.1	00	130	8010	1	A
796	J & R METALLIZING CO, INC., NEWARK, ESSEX CO.	404330	741017	4.8	00	0110	3070	1	B
538	J.L. ARNITAGE + CO., NEWARK, ESSEX CO.	404316	741013	4.6	0	130	3070	1	
498	CONRAIL E-PORT, ELIZABETHPORT, UNION CO.	403847	741000	2.8	1	103	130	8	
708	KAPKOWSKI RD. LANDFILL, ELIZABETH, UNION CO.	404040	741000	2.6	50	100	3070	0	
325	FRONTAGE ROAD DRUM DUMP, NEWARK, ESSEX CO.	404220	740955	3.6	1	0130	0	1	B
792	GEORGIA-PACIFIC CORP--CASTING OPER, NEWARK, ESSEX CO.	404350	740948	5.0	00	0110	3070	1	B
793	GEORGIA-PACIFIC CORP--POLYMER MATE, NEWARK, ESSEX CO.	404250	740948	5.0	00	0110	3070	1	B
416	ALBERT STEEL DRUM/ PRENTISS DRUG, NEWARK, ESSEX CO. (DIOXIN)	404314	740945	4.3	72	103	130	1	E
890	CHEM-FLEUR, NEWARK, ESSEX CO.	404305	740945	4.2	00	0110		1	B
819	NOLDEX, INC - ELIZABETH PLANT, UNION CO.	403953	740932	2.0	00	0103	0100	1	B
1163	OAK ISLAND-CONRAIL TERMINAL, NEWARK, ESSEX CO.	404247	740858	3.5	52			3	
593	FEDERATED METALS, NEWARK, ESSEX CO.	404327	740833	4.1	0	130	3070	9	
780	DISCOVERIES, INC, BAYONNE, HUDSON CO.	403851	740827	1.7	63	0103	3050	1	B
417	TROY CHEM., NEWARK, ESSEX CO.	404323	740824	4.0	38	130	3070	1	
555	CENTRAL STEEL DRUM, NEWARK, ESSEX CO.	404230	740752	2.9	1	130	3070	0	
57	ASHLAND CHEM., NEWARK, ESSEX CO.	404333	740749	4.1	53	130	3070	1	
410	INLAND CHEM., NEWARK, ESSEX CO.	404302	740733	3.5	00	3070	0	9	
551	SUNMARK IND., NEWARK, ESSEX CO.	404302	740733	3.5	63	130	3070	9	
603	TEXACO TERMINAL, NEWARK, ESSEX CO.	404225	740716	2.8	53	130	3070	9	
1303	DROYERS POINT, JERSEY CITY, HUDSON CO.	404240	740654	3.1	39	0101	0130	1	A
519	SYNDON RESINS, KEARNY, HUDSON CO.	404416	740648	4.9	00	100	3070	1	B
512	ROOSEVELT DRIVE-IN (DAYLIN/GRACE), JERSEY CITY, HUDSON CO.	404252	740608	3.4	39	103	101	5	B
630	MORAY CHEMICAL CORP., BAYONNE CITY, HUDSON CO.	404117	740603	1.8	00	103	0	9	
1304	ROUTE 185, JERSEY CITY, HUDSON CO.	404110	740603	1.7	39	0130	0101	1	B
786	ENGLER INSTRUMENTS, JERSEY CITY, HUDSON CO.	404258	740543	3.6	25	0103	3050	1	B
872	TEXTILE PROOFERS, JERSEY CITY, HUDSON CO.	404250	740531	3.6	63	0103	3050	1	B
737	PJF LANDFILL, JERSEY CITY, HUDSON CO.	404127	740506	2.5	58	103	101	9	
609	GARFIELD AVE., 880, JERSEY CITY, HUDSON CO.	404228	740413	3.9	39	103	102	1	
772	COLUMBIA PAINT, INC., JERSEY CITY, HUDSON CO.	404215	740350	3.9	00	0103	0110	1	B
605	PITTSTON PETROLEUM, JERSEY CITY, HUDSON CO.	404147	740258	4.2	53	103	101	8	

Number of Observations: 33

MAP 7-4

Page 1 of NJGS CASE INDEX SITES WITHIN 5.0 MILES OF 404000 LAT. 740712 LON. AS OF 12/22/87 (IN ORDER BY SITE NUMBER) - 08/12/88

SITENUM	NAME	LAT	LON	DISTANCE	CONTAM	FMCODE1	FMCODE2	STATUS1	STATUS2
57	ASHLAND CHEM., NEWARK, ESSEX CO.	404333	740749	4.1	53	130	3070	1	
325	FRONTAGE ROAD DRUM DUMP, NEWARK, ESSEX CO.	404230	740755	3.6	1	0130	0	1	B
410	INLAND CHEM., NEWARK, ESSEX CO.	404302	740733	3.5	00	3070	0	9	
416	ALBERT STEEL DRUM/ FRENTISS DRUG, NEWARK, ESSEX CO. (DIOXIN)	404314	740945	4.3	72	103	130	1	E
417	TROY CHEM., NEWARK, ESSEX CO.	404323	740824	4.0	38	130	3070	1	
498	CONRAIL E-PORT, ELIZABETHPORT, UNION CO.	403847	741000	2.8	1	103	130	8	
512	ROOSEVELT DRIVE-IN (DAYLIN/GRACE), JERSEY CITY, HUDSON CO.	404252	740608	3.4	39	103	101	5	B
519	SYNCON RESINS, KEARNY, HUDSON CO.	404416	740648	4.9	00	100	3070	1	G
538	J.L. ARMITAGE + CO., NEWARK, ESSEX CO.	404316	741013	4.6	0	130	3070	1	
551	SUNMARK IND., NEWARK, ESSEX CO.	404302	740733	3.5	63	130	3070	9	
555	CENTRAL STEEL DRUM, NEWARK, ESSEX CO.	404230	740752	2.9	1	130	3070	0	
593	FEDERATED METALS, NEWARK, ESSEX CO.	404327	740833	4.1	0	130	3070	9	
603	TEXACO TERMINAL, NEWARK, ESSEX CO.	404225	740716	2.8	53	130	3070	9	
605	PITTSTON PETROLEUM, JERSEY CITY, HUDSON CO.	404147	740258	4.2	53	103	101	8	
609	GARFIELD AVE., 860, JERSEY CITY, HUDSON CO.	404228	740413	3.9	39	103	102	1	
630	MORAY CHEMICAL CORP., BAYONNE CITY, HUDSON CO.	404117	740503	1.8	00	103	0	9	
670	CHEMICAL CONTROL, ELIZABETH, UNION CO.	403835	741137	4.2	0	0100	3070	1	E
693	J.T. BAKER, PHILLIPSBURG, WARREN CO.	404129	741126	4.1	00	130	8010	1	A
708	KAPKOWSKI RD. LANDFILL, ELIZABETH, UNION CO.	404040	741000	2.6	50	100	3070	0	
737	PJP LANDFILL, JERSEY CITY, HUDSON CO.	404127	740506	2.5	58	103	101	9	
772	COLUMBIA PAINT, INC., JERSEY CITY, HUDSON CO.	404215	740750	3.9	00	0103	0110	1	B
780	DISCOVERIES, INC, BAYONNE, HUDSON CO.	403851	740827	1.7	63	0103	3050	1	B
786	ENGLER INSTRUMENTS, JERSEY CITY, HUDSON CO.	404258	740543	3.6	35	0103	3050	1	B
792	GEORGIA-PACIFIC CORP—CASTING DEPT., NEWARK, ESSEX CO.	404350	740948	5.0	00	0110	3070	1	B
793	GEORGIA-PACIFIC CORP—POLYMER MATE, NEWARK, ESSEX CO.	404350	740948	5.0	00	0110	3070	1	B
796	J & R METALLIZING CO, INC., NEWARK, ESSEX CO.	404330	741017	4.8	00	0110	3070	1	B
819	NOUDEX, INC - ELIZABETH PLANT, UNION CO.	403953	740932	2.0	00	0103	0100	1	B
872	TEXTILE PROOFERS, JERSEY CITY, HUDSON CO.	404250	740531	3.6	63	0103	3050	1	B
890	CHEM-FLEUR, NEWARK, ESSEX CO.	404305	740945	4.2	00	0110		1	B
1163	OAK ISLAND-CONRAIL TERMINAL, NEWARK, ESSEX CO.	404247	740858	3.5	52			3	
1303	DROYERS POINT, JERSEY CITY, HUDSON CO.	404240	740654	3.1	39	0101	0130	1	A
1304	ROUTE 185, JERSEY CITY, HUDSON CO.	404110	740503	1.7	39	0130	0101	1	B
1321	J.F.HENRY CHEMICAL CO., NEWARK, ESSEX CO.	404210	741135	4.6	63	0110	3070	1	B

Number of Observations: 33

MAP 7-5

WHITE CHEMICAL CORPORATION

EAST 22ND STREET, BAYONNE, N. J. 07002 P. O. BOX 278

PHONE: (201) 437-0080
TELEX: 12-8130
CABLE: CLORACIDS
BAYONNE, N. J.

10 - 12

February 19, 1982

Mr. Jerome Wagner
Construction Official
Town of Kearny
Townhall
402 Kearny Avenue
Kearny, New Jersey 07032

Dear Mr. Wagner:

Subject - General description of operations for White Chemical Corporation

White Chemical Corporation is a specialty manufacturer of acid chlorides, alkyl bromides and brominated flame retardants. We employ a total of approximately 75 employees.

In general, our chemistry involves the reactions of fatty acids and alcohols with phosphorous trichloride or phosphorous tribromide to produce their corresponding acid chloride and alkyl bromide analogs. The reactions are run in glass lined reactors ranging in size from 100 gallons to 4,000 gallons.

Our normal traffic load in and out of our manufacturing facility averages 3 to 4 trucks per day.

Enclosed is a list of the various types of corrosive and or flammable materials handled by White Chemical Corporation, indicating which are red label and those which may be handled in bulk and stored in diked storage tanks.

These chemicals will be used in the manufacturing building designated as building "A". Chemicals being used in the main building will be neither flammable or corrosive.

Our intent is to establish operations in two phases at the Kearny site. The first site will be a water dispersion of the non-flammable and non-corrosive solids along with warehousing and distributing in the main building. The second phase will be the construction and operation of the manufacturing building designated as building "A".

ATTACHMENT A

WHITE CHEMICAL CORPORATION

White Chemical Corporation operates under full compliance with the Occupational Safety and Health Administration, Environmental Protection Administration, Department of Environmental Protection and conforms with all RICRA regulations dealing with the generation and movement of all hazardous waste under the manifest system.

Very truly yours,

WHITE CHEMICAL CORPORATION

S. L. Shopsis
Plant Manager

SS/hb
Enclosure

A-2

WHITE CHEMICAL CORPORATION

CORROSIVE MATERIAL HANDLED BY WHITE CHEMICAL CORPORATION

x Acetic Acid	Hydriodic Acid
Acetic Anhydride	Hydrogen Peroxide
x* Acetyl Chloride	x Hydrobromic Acid Solution
Ammonium Hydroxide	x Hydrochloric Acid Solution
Benzyl Bromide	Iodine
x Bromine	* Isopropyl Alcohol
Bromoacetic Acid	Lauroyl Chloride
Bromoacetyl Bromide	x* Methanol
Bromocaproic Acid	Phenol
* Butanol	* Phosphorous (Red)
* Butyl Bromide	x Phosphorous Acid
Butyric Acid	Phosphorous Tribromide
Butyroyl Chloride	x Phosphorous Trichloride
x Caprylic Acid	* Pivaloyl Chloride
x Capryloyl Chloride	x Pivalic Acid
Chlorine	* Propanol
Decanoic Acid	x Propionic Acid
Decanoyl Chloride	* Propionyl Chloride
Dibromophenol	Propyl Bromide
* Dichloro Ethane	Soldium Hydroxide
Hexanoic Acid	Sulfuric Acid
Hexanoyl Chloride	Thionyl Chloride

* Indicates Red Label
x Indicates Bulk Diked Storage

WHITE CHEMICAL CORPORATION

** LIST OF PRODUCTS MANUFACTURED IN 1976 **

- Acetyl Chloride
- Adipoyl Dichloride
- Butyroyl Chloride
- Capryloyl Chloride
- Decanoyl Chloride
- Hexanoyl Chloride
- Isostearoyl Chloride
- Lauroyl Chloride
- Pivaloyl Chloride
- Polyethylene Glycol Dichloride
- Propionyl Chloride
- Allyl Bromide
- Amyl Bromide
- Benzyl Bromide
- Bromoacetyl Bromide
- Cetyl Bromide
- Iso Butyl Bromide
- Lauryl Bromide
- Lauryl/Myristyl Bromide
- Propyl Bromide
- Sec-Butyl Bromide
- Decabromodiphenyl Oxide
- Octabromodiphenyl Oxide
- Decabromobiphenyl
- Octabromobiphenyl
- Dibromophenol
- Monobromobenzene
- Pentabromotoluene
- Methyl Butyrate
- Vancide PA
- Hydriodic Acid
- Phosphorous Acid

ATTACHMENT A-4

ADM912

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO Steve Carfora

FROM Timothy McGuinness TM DATE August 19, 1981

SUBJECT WHITE CHEMICAL

Attached is a list of compound for which White Chemical should test. The tests should be run according to EPA recommended extraction and analytical procedures.

TM:ps
Attachment

ATTACHMENT A-5

WHITE CHEMICAL CORPORATION

A - Acetone
Ammonium Hydroxide
Ammonia Gas
Acetyl Chloride
Adipic Acid
Acetic Acid
Amyl Alcohol
Amyl Chloride
Acetic Anhydride
Allyl Alcohol
Adipoyl Chloride
Allyl Bromide
Ammonium Molybdate
Amyl Bromide
Aluminum Chloride
Antimony Oxide
Aniline Oil
Allyl Chloride

B - Benzyl Bromide
Benzene
Bromine
n-Butanol
Butyl Bromide
Bromo Acetyl Bromide
Butyric Acid
Butyroyl Chloride
t-butanol
Biphenyl
Bromo Caproic Acid
Benzoyl Chloride

C - Caprylic Acid
Carbon
Capryloyl Chloride
Capric Acid
Cyclohexanol
Cetyl Alcohol
Cyclohexyl Chloride
Chlorine
Crotonic Acid
Caustic Potash
Cetyl Bromide
Carbon Tetrachloride

Cyclohexyl Bromide
Carbon Dioxide
Celite
Cyclododecatriene
Calcium Chloride

D - O-Dichlorobenzene
Dimethyl Sebacate
Diethyl Sulfate
Dimethyl Formamide
Dibromopropanol
Dibromophenol
Dimethyl Sulfoxide
Decabromo biphenyl oxide
Decanoyl Chloride
Decanoic Acid
Dimethyl Adipate
2,2-Bis-(4-(2,3 dibromo propoxy)-3,5 Dibromo phenyl) propane
Diparaxylylene
Diphenyl Oxide
Dipropylene Glycol
Decabromo biphenyl

E - Ethyl Aceto Acetate
Epichlorohydrin
Ethyl Pivalate
Ethylene Glycol
Ethyl Palmitate

F - Filter Aid

G - Glycerine

H - Hydrogen Peroxide
Hexanol
Hydrogen Chloride Aqueous
Hydriodic Acid
Hydrochloric Acid Gas
Hypophosphorous Acid
Hexanoic Acid
Hexabromo Biphenyl
Hexyl Bromide
Hydrobromic Acid
Hi Flash Naptha
Heptanoic Acid
Heptanoyl Chloride
Hexabromo cyclo dodecane

I - Isopropyl Alcohol
Iodibe
Isophthaloyl Chloride
Isopropyl Bromide
Isobutanol
Isobutyl Bromide
Isopropyl Myristate

J -

K -

L - Lauryl Alcohol
Lauryl Bromide
Lauroyl Chloride
Lauric Acid
Lauryl Chloride
Lime

M - Methyl Alcohol
Methyl Pivalate
Myristic Acid
Maleic Anhydride
Methyl Butyrate
Methylene Chloride
Methyl Ethyl Ketone
Monochloro benzene

Monochloroacetic Acid
p-methyl benzyl chloride

N - Nonobromo biphenyl

O - Octyl Alcohol
Oleic Acid
Octyl Bromide
Octyl Chloride
Octabromo biphenyl Oxide
Octabromo biphenyl
Ortho chloro toluene

P - Propyl Bromide
Phosphoric Acid
Phosphorous Tribromide
Phosphorous Trichloride
Pivalic Acid
Pyridine
Pivaloyl Chloride
Palmetic Acid
Phosphorous
Propanol
Palmitoyl Chloride
Propyl Chloride
Phosphorous Oxy Chloride
Phenyl Benzoate
Perchloroethylene
Phenyl ethyl alcohol
Phenyl ethyl bromide
Propionyl Chloride
Propionic Acid
Phenol
Polyethylene Blycol 600
Propyl Mercaptan
Phenothiazene
Phenyl Propyl Chloride
Penta bromo Toluene
Phosphorous Acid

Q -

R -

S - Soda Ash
Sodium Hydroxide
Sodium Sulfate
Sulfuric Acid
Sebacic Acid
Stearic Acid
Sodium Bicarbonate
Sodium Thiosulfate
Sodium Chloride
Sulfur Trioxide
Sodium Bisulfate
Sodium Chlorate
Sodium Hypochlorite
Sodium Formate
Stearyl Bromide

T - Thionyl Chloride
p-Toluene Sulfonic Acid
Tetrachloroethane
Trimethylamine
Tris(2,3 Dibromopropyl) Phosphate
Trans-1,2-bis(n-propyl sulfonyl)ethene
Toluene
Terephthaloyl Chloride
Tribromophenol
Trichloroacetic Acid
Tetrabromo bisphenol A

U - Urea

V - Vinyledene Chloride
Valeroyl Chloride
Valeric Acid

W -

X - Xylene (mixed)
Xylene (para)

Y -

Z - Zinc Chloride
Zirconium Tetrachloride

ecology and environment, inc.
REDFIELD OFFICE BUILDING, 2ND FLOOR, 295 PIERSON AVENUE, EDISON, NEW JERSEY 08817, TEL. 201-494-5871

International Specialists in the Environmental Sciences

DATE February 6, 1980

TO: Fred N. Rubel, Chief
Emergency Response and Hazardous Materials Inspection Branch
USEPA, Edison, N.J.

FROM: John R. Burger, TAT II
Ecology and Environment, Inc.
295 Pierson Ave., Edison, N.J.

SUBJECT: Potential Hazardous Material/Waste Disposal Site, Bayonne, N.J.

The attached list of brominated flame retardants, acid chlorides, and alkyl bromides, represents a summary of compounds produced by the White Chemical Company during the period up to 1975. Obviously, subsequent regulations have impacted on certain compounds, specifically the "Tris" and PBB compounds.

This site is identified in the USEPA Aerial Recon. Project R&D 7833, within site #24, as being a drum storage site located on property belonging to the Bayonne Industries Corporation. Due to the nature of the manufacturing operation, the quantity of barrels stockpiled on site, and the tenant status of the firm, the following risks are present:

1. Sludge cakes, residues, off-spec. product and other non-saleable quantities of chlorinated and brominated intermediates, tris compounds, and poly-brominated biphenyls (PBB's), or their by-products may well be stored on the site. This would seem a reasonable probability, in view of the recent (within the last 5 years) developments regarding these materials and New Jersey's efforts to monitor and control hazardous waste disposal. Without knowledge of the process chemistry, the feasibility of complete on-site retention of these waste materials cannot be assessed. Nevertheless, investigation of the disposal practices of White Chemical Company would seem to be a matter of reasonable concern.

2. The tenant status of the Company, combined with its seclusion, could result in an ultimate orphaning of the existing, stored 55-gallon drums. In this event, a number of possible disposal techniques might be employed that would be detrimental to human health and/or the environment in general.

I have spoken to the NPDES permit engineer who was handling this facility up until January, 1980. Mr. Josephs (212-269-9878) advised me that the Company is now holding wastewater from certain processes pending completion of their treatment works. Mr. Josephs also indicated that Mr. Grecko should be contacted with further questions regarding the NPDES status of this facility. Mr. Josephs also indicated that the lease with Bayonne Industries would expire within 2 years and would not be renewed.

A-12

recycled paper

It would seem advisable to further investigate the nature of the on-site storage at White Chemical, either at the Federal and/or State level, to determine solid waste disposal practices and attempt to determine if a 7003 condition exists while the generator is still on-site.

A site location plan has been developed from the aerial photograph on page 15 of "Region II Aerial Reconnaissance of Selected Oil Chemical and Industrial Facilities in N.Y., N.J., and Puerto Rico", June-Sept 78, and a regional road map extract is included to locate the facility within the City of Bayonne.

WHITE

flame retardant

PROCESS TEMPERATURE INDICATOR °C

GUIDE FOR THERMOPLASTIC APPLICATIONS

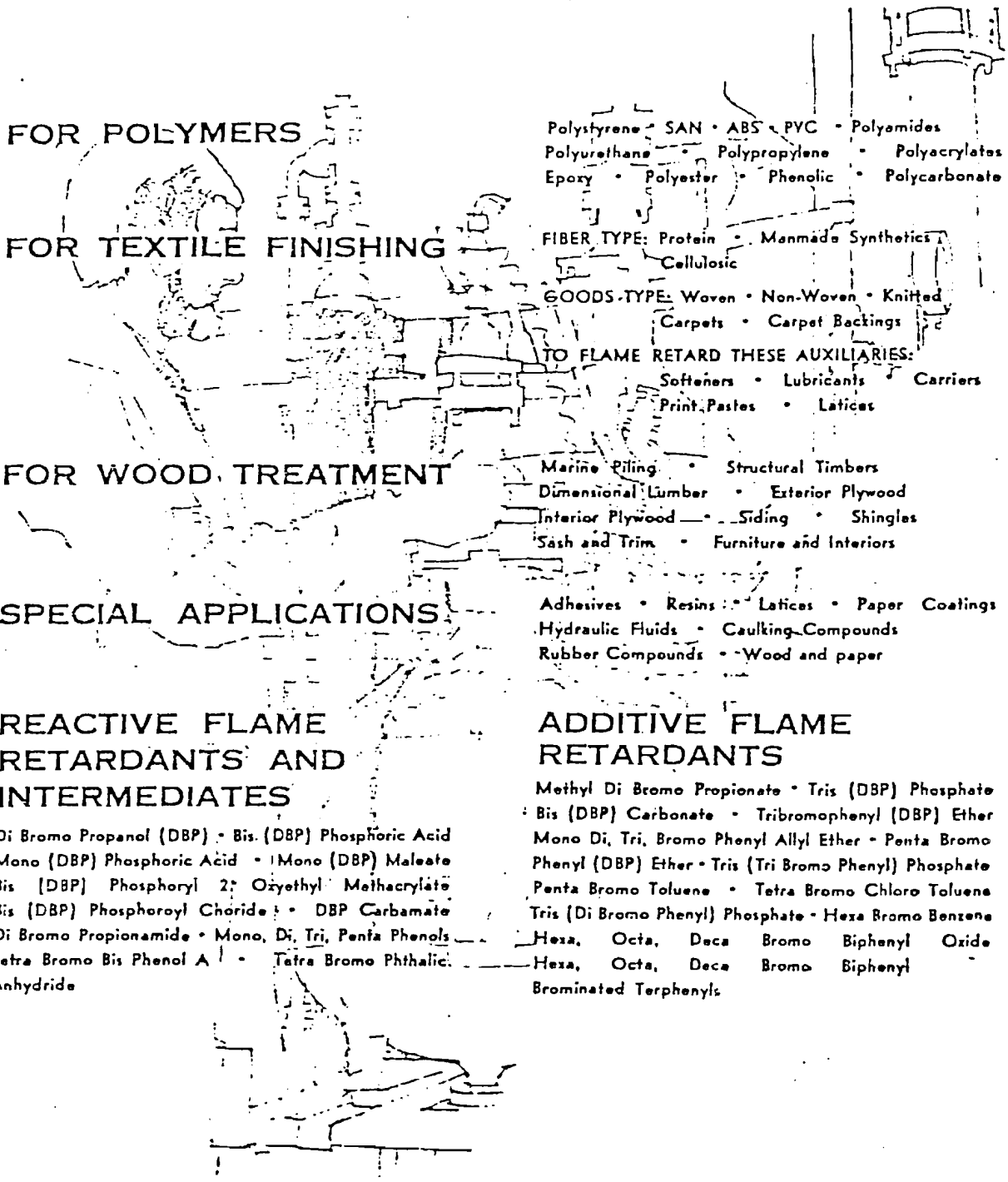
VOLATILITY by TGA			MELTING RANGE °C.	DECOMPOSITION POINT °C.	PRODUCT NAME	%Br
Less than 5%	10%	25%				
341	363	388	380-386	390	DECABROMO BIPHENYL	84.7
338	363	395	298-303	425	DECABROMO DIPHENYLOXIDE	83.3
323	342	370	220-265	435	OCTABROMO BIPHENYL	81.4
310	353	393	220-226	285	TRIS (TRIBROMO PHENYL) PHOSPHATE*	69.4
302	325	359	105-107	315	TRIS (DIBROMO PHENYL) PHOSPHATE*	42.6
263	279	306	153-158	285	HEXABROMO BIPHENYL	76.8
244	258	279	306-332	400	HEXABROMO BENZENE	86.9
217	231	253	289-291	360	PENTABROMO TOLUENE	82.2
212	229	254	228-231	175	PENTABROMO PHENOL	75.6
206	222	247	272-274	360	TETRABROMO ORTHO CHLORO TOLUENE	72.1

A-14

SEP 16 1975

WHITE

MAJOR WORLD PRODUCER OF BROAD RANGE SPECIALIZED BROMINATED FLAME RETARDANTS



FOR POLYMERS

Polystyrene • SAN • ABS • PVC • Polyamides
Polyurethane • Polypropylene • Polyacrylates
Epoxy • Polyester • Phenolic • Polycarbonate

FOR TEXTILE FINISHING

FIBER TYPE: Protein • Manmade Synthetics • Cellulosic

GOODS TYPE: Woven • Non-Woven • Knitted Carpets • Carpet Backings

TO FLAME RETARD THESE AUXILIARIES:
Softeners • Lubricants • Carriers
Print Pastes • Latices

FOR WOOD TREATMENT

Marine Piling • Structural Timbers
Dimensional Lumber • Exterior Plywood
Interior Plywood • Siding • Shingles
Sash and Trim • Furniture and Interiors

SPECIAL APPLICATIONS

Adhesives • Resins • Latices • Paper Coatings
Hydraulic Fluids • Caulking Compounds
Rubber Compounds • Wood and paper

REACTIVE FLAME RETARDANTS AND INTERMEDIATES

Di Bromo Propanol (DBP) • Bis (DBP) Phosphoric Acid
Mono (DBP) Phosphoric Acid • Mono (DBP) Maleate
Bis (DBP) Phosphoryl 2 Oxyethyl Methacrylate
Bis (DBP) Phosphoroyl Choride • DBP Carbamate
Di Bromo Propionamide • Mono, Di, Tri, Penta Phenols
Tetra Bromo Bis Phenol A • Tetra Bromo Phthalic Anhydride

ADDITIVE FLAME RETARDANTS

Methyl Di Bromo Propionate • Tris (DBP) Phosphate
Bis (DBP) Carbonate • Tribromophenyl (DBP) Ether
Mono Di, Tri, Bromo Phenyl Allyl Ether • Penta Bromo Phenyl (DBP) Ether • Tris (Tri Bromo Phenyl) Phosphate
Penta Bromo Toluene • Tetra Bromo Chloro Toluene
Tris (Di Bromo Phenyl) Phosphate • Hexa Bromo Benzene
Hexa, Octa, Deca Bromo Biphenyl Oxide
Hexa, Octa, Deca Bromo Biphenyl
Brominated Terphenyls

WHITE

AN ORGANIZATION OF CHEMISTS AND CHEMICAL ENGINEERS DEDICATED TO GROWTH THROUGH RESEARCH

A-15

WHITE

MAJOR WORLD PRODUCER
HIGH PURITY ACID CHLORIDES
HIGH PURITY ALKYL BROMIDES

INTERMEDIATES AND ORGANIC SPECIALTIES FOR THESE INDUSTRIES

PHARMACAL, PHARMACEUTICAL, DYESTUFF, ODORANT
ANTIOXIDANT, PHOTOGRAPHIC, HERBICIDE,
FUNGICIDE, INSECTICIDE

ACID CHLORIDES

ACETYL
PROPIONYL
BUTYROYL
ISO BUTYROYL
PIVALOYL
HEXANOYL
HEPTANOYL
IHEPTANOYL
CAPRYLOYL
PELARGONOYL
DECANOYL
LAUROYL
MYRISTOYL
PALMITOYL
ISO STEAROYL
VERSATIC®
NEOACID

MONOCHLORACETYL
DICHLORACETYL

ADIPOYL
SEBACOYL
ISO PHTHALOYL
TERE PHTHALOYL
FUMAROYL

CINNAMOYL
PHENYL PROPIONYL
PHENYLACETYL

ALKYL BROMIDES

ALLYL
PROPYL
BUTYL
AMYL
HEXYL
HEPTYL
OCTYL
DECYL
LAURYL
MYRISTYL
CETYL (HEXA DECYL)
STEARYL (OCTA DECYL)

ISO AMYL
ISO OCTYL
ISO DECYL
ISO TRI DECYL
ISO HEXA DECYL

CYCLOHEXYL
BENZYL
PHENYLETHYL

ALKYL MERCAPTANS

n-OCTYL MERCAPTAN
LAURYL MERCAPTAN
MYRISTYL MERCAPTAN
CETYL-STEARYL MERCAPTAN
STEARYL MERCAPTAN

ESTERS

METHYL PIVALATE
METHYL VALERATE
ETHYL VALERATE
ETHYL PALMITATE
BUTYL BUTYRATE
OCTYL CAPRYLATE
STEARYL STEARATE
METHYL ISO STEARATE

DI BUTYL SUCCINATE
DI METHYL SEBACATE

BROMACETYL ESTERS

NEO ACID ESTERS
VERSATIC® ESTERS

BROMINATED INTERMEDIATES

PHOSPHOROUS TRIBROMIDE
PHOSPHOROUS OXYBROMIDE
BROMO ACETYL BROMIDE
DIBROMO PHENOL
TRIBROMO PHENOL
2,3, DIBROMO PROPANOL (DBP)

SPECIALTIES

HYDRIODIC ACID REAGENT
THIOCARBANILIDE
PHENYLISOTHIOCYANATE
CETYL PYRIDINIUM BROMIDE

CHEMICAL
CORP

A-16

Certified Mail
Return Receipt Requested

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF CANCER AND
TOXIC SUBSTANCES RESEARCH
CN-402, TRENTON, N.J. 08625

THOMAS BURKE, M.P.H.
DIRECTOR

May 12, 1983

Mr. Steven Shopsis, Manager
White Chemical Corporation
P.O. Box 278
East 22nd Street
Bayonne, NJ 07002

re: Request for Information
N.J.A.C. 7:1F-1 et seq.

Dear Mr. Shopsis:

Due to recent environmental and public health concern regarding potential Dioxin (2,3,7,8-TCDD) contamination, this Office is conducting an investigation of certain facilities throughout the State.

Based upon a review of available information White Chemical Corporations' Bayonne facility has been tentatively identified as a former/current producer of:

1. 2,4-Dibromophenol
2. Pentabromophenol
3. 2,4,6-Tribromophenol

These substances are under review due to the potential presence of Dioxin as a byproduct of production.

We are, at this time, requesting your submittal of supplemental information regarding past production practices involving these substance(s). Kindly complete the enclosed survey questionnaires, In addition, supply a narrative and/or diagrammatic description of the operations involving these substances. Follow the enclosed outline to the extent necessary to amplify or explain all handling and production practices.

Your cooperation is this investigation is urgently requested and a submittal should be made within 30 days of this letter. Should you require additional information or assistance, please contact the writer at (609) 292-1520.

Very truly yours,

Edward Stevenson

Edward Stevenson, Manager
Industrial Investigation Unit

Enclosures

WHITE CHEMICAL CORPORATION

May 16, 1983

Additions to list of raw materials, intermediates and products made at White Chemical Corporation.

These generally in small quantity and those marked with an asterisk discontinued.

Ammonium Bromide

Bromo Acetic Acid

Bromo Butyric Acid

Ethyl Bromide

Chloro Benzene

* Cyclo Octa Diene

Cyclo Hexane

1, 2 Dichloro Ethane

Dichloro Methane

* Himic Anhydride

* Hexa Chloro Cyclo Penta Diene

Pentabromo Diphenyl Oxide

* Pentabromo Phenol

* Pentabromo Phenyl Allyl Ether

Propylene Glycol

* Tetrabromo Bisphenol-A Diallyl Ether

Triethyl Amine

4-Vinyl Cyclohexene-1

Ethylene Diamine

Tetra Ethyl Ammonium Bromide

p-Methyl Aceto Phenone

Iso Stearic Acid

Iso Stearoyl Chloride

Poly Ethylene Glycol-6000

Di Iso Stearyl Ester of Polyethylene Glycol-6000

* n,n Ethyl - 1,2 Bis(5-6 Dibromo-norbornane - 2,3 Dicarboximide)

* 1,2 Dibromo-4-(1,2 Dibromo Ethyl) Cyclohexane

* 1,2,3,4,11,11 Hexachloro-2 Norbornene, - Cyclo Octene-7

* 1,2,3,4,11,11 Hexachloro 2-Norbornene 7,8 dibromo Cyclo Octane

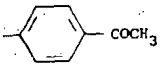
* 2,3 (Methylene bis diox 7) Monobromo Acetyl Glycerol

p-Methyl Benzyl Trimethyl Ammonium Chloride

A-18

ing; diolefins. *Caution:* Intensely irritating to eyes, skin, mucous membranes.

2114. *p*-Chloroacetophenone. *1-(4-Chlorophenyl)ethanone; 4'-chloroacetophenone.* C_8H_7ClO; mol wt 154.59. C 62.15%, H 4.56%, Cl 22.94%, O 10.34%. Prepd from chlorobenzene and acetic anhydride in the presence of $AlCl_3$: Adams, Noller, *Org. Syn.* coll. vol. I, 109 (1941). Physical properties: *eidem, ibid.*; Dreisbach, Martin, *Ind. Eng. Chem.* 41, 2875 (1949).



Liquid, bp_{24} 124-126°, bp 237°. mp 20-21° (Adams, Noller); also reported as 18.4° (Dreisbach, Martin). d_4^{20} 1.192, d_4^{25} 1.188. n_D^{20} 1.555, n_D^{25} 1.553. Practically insol in water; miscible with alcohol, ether.

Caution. Highly irritating to eyes, mucous membranes.

2115. ω-Chloroacetophenone. *2-Chloro-1-phenylethanone; 2-chloroacetophenone; α-chloroacetophenone;* phenacyl chloride; Chemical Mace; CN. C_8H_7ClO; mol wt 154.59. C 62.15%, H 4.56%, Cl 22.94%, O 10.35%. $C_6H_5COCH_2Cl$. Chemical warfare agent with lacrimatory properties. Prepn: Schöll, Korten, *Ber.* 34, 1902 (1901); Schaefer, Sonnenberg, *J. Org. Chem.* 28, 1128 (1963). Purification: Lofton, U.S. pat. 2,414,418 (1947 to Pennsylvania Coal Prod.). Melting point determination and review of prepn and mp: Macy, *J. Chem. Ed.* 24, 222 (1947). Comparative toxicity of CN and *o*-chlorobenzylidenemalononitrile, *q.v.*: B. Ballantyne, D. W. Swanston, *Arch. Toxicol.* 40, 75 (1978).

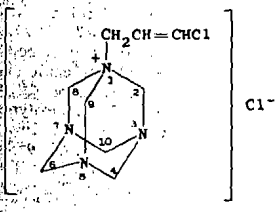
Crystals from dil alcohol, carbon tetrachloride, or light petr. mp 58-59°, also reported as 54°, Macy, *loc. cit.*, and 56.5°, Rheinboldt, Perrier, *J. Am. Chem. Soc.* 69, 3148 (1947). bp 244-245°. d^{15} 1.324. Vapor press. at 20°: 5.4 × 10^{-3} mm/Hg. Practically insol in water; freely sol in alcohol, ether, benzene. LD_{50} in rats: 41 mg/kg i.v., 36 mg/kg i.p.; 127 mg/kg orally; LC_{50} in rats: 8,750 mg/min/m^3, B. Ballantyne, D. W. Swanston, *loc. cit.*

USE: Riot control agent. *Caution:* Potent eye, throat and skin irritant; possible corneal damage; may be a sensitizer in human beings. *See Fed. Proc.* 30, 84-99 (1971).

2116. Chloroacetyl Isocyanate. Chloroacetic acid anhydride with isocyanic acid. $C_3H_2ClNO_2$; mol wt 119.52. C 30.15%, H 1.69%, Cl 29.67%, N 11.72%, O 26.77%. $ClCH_2CONCO$. Obtained by the reaction of chloroacetamide with oxalyl chloride: Speziale, Smith, *J. Org. Chem.* 28, 1808 (1963).

Liquid. bp_{20} 50-55°. $n_D^{21.5}$ 1.4580.

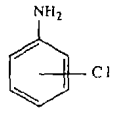
2117. *N*-(3-Chloroallyl)hexaminium Chloride. *1-(3-Chloro-2-propenyl)-3,5,7-triaza-1-azoniatricyclo[3.3.1.1^{3,7}]decane chloride; 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride;* Dowicide Q. $C_9H_{16}Cl_2N_4$; mol wt 251.17. C 43.04%, H 6.42%, Cl 28.23%, N 22.31%. Prepn: Scott, Wolf, *Appl. Microbiol.* 10, 211 (1962).



Cream-colored powder. Freely sol in water (up to 25% w/w). Concd solns are yellow.

USE: Bactericide.

2118. Chloroaniline. C_6H_6ClN; mol wt 127.57. C 56.49%, H 4.74%, Cl 27.79%, N 10.99%. Prepn of *m*-, *o*- and *p*-isomers: Sidgwick, Rubic, *J. Chem. Soc.* 119, 1013 (1921). Manufacture of *m*- and *p*-isomers by catalytic hydrogenation of chloronitrobenzene: Pray, Trager, U.S. pat. 2,791,613 (1957 to Columbia-Southern Chem.); by reduction of chloronitrobenzene with NaHS: Latourette *et al.*, U.S. pat. 2,894,035 (1959 to Food Machinery & Chem.). Properties of *o*-isomer: Dreisbach, Martin, *Ind. Eng. Chem.* 41, 2875 (1949). Toxicity data: H. F. Smyth *et al.*, *Am. Ind. Hyg. Assoc. J.* 23, 95 (1962).

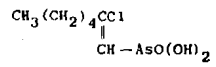


m-Chloroaniline, 3-chlorobenzenamine. Liquid, bp 230.5°, mp −10.4°. d_4^{22} 1.2150. n_D^{20} 1.5931. Practically insol in water. Sol in most common organic solvents.

o-Chloroaniline, liquid. At 99.61 mol-% purity, bp 208.84°; mp −1.94°. d_4^{22} 1.2114. n_D^{20} 1.5895. Practically insol in water. Sol in acid and in most organic solvents.

p-Chloroaniline, orthorhombic crystals from alcohol or petr ether, mp 72.5°, bp 232°. d_4^{77} 1.169. Sol in hot water; freely sol in alcohol, ether, acetone, carbon disulfide. LD_{50} orally in rats: 0.31 g/kg (Smyth).

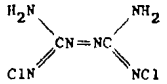
2119. Chloroarsenol. *(2-Chloro-1-heptenyl)arsonic acid; 2-chloro-1-heptene-1-arsonic acid.* $C_7H_{14}AsClO_3$; mol wt 256.56. C 32.77%, H 5.50%, As 29.20%, Cl 13.82%, O 18.71%. Prepn: Ger. pat. 296,915 (1917 to Bayer).



Needles from water, mp 115°.

Ammonium salt, $C_7H_{17}AsClNO_3$, *ammonium chloroheptenearsonate.* Freely sol in water. Supplied as a 1% soln made isotonic with 0.7% NaCl under the names: *Solarson; Arsion.*

2120. Chloroazodin. *N,N''-Dichlorodiazenedicarboximidamide; α,α'-azobis[chloroformamidine];* chlorazodin; dichloroazodicarbonamidine; Azochloramide. $C_2H_4Cl_2N_6$; mol wt 183.01. C 13.12%, H 2.20%, Cl 38.75%, N 45.93%. Prepd by treating an AcOH-NaOAc soln of guanidine nitrate with sodium hypochlorite in the cold: Braz *et al.*, *Appl. Chem. USSR* 17, 565 (1944), *C.A.* 40, 2267 (1946). Structure and uv spectra: Kumler, *J. Am. Chem. Soc.* 75, 3092 (1953).



Bright yellow needles, plates, flakes. Faint chlorine odor, burning taste. Dec explosively at about 155°. Decompn is accelerated by contact with metals. Very slightly sol in water; sparingly sol in alcohol; slightly sol in glycerol, glyceryl triacetate (1:100), vegetable oils, ether, chloroform. Practically insol in carbon tetrachloride and liquid petrolatum. Oil solns are generally made by diluting a triacetin (glyceryl triacetate) soln of chloroazodin with oil. Solns of chloroazodin in glycerol and in alcohol dec rapidly on warming; all solns dec on exposure to light.

THERAP CAT: Antibacterial.

THERAP CAT (VET): Topical anesthetic.

2121. Chlorobenzene. Monochlorobenzene; benzene chloride. C_6H_5Cl; mol wt 112.56. C 64.02%, H 4.48%, Cl 31.50%. Produced by the chlorination of benzene in the presence of a catalyst. Review of manuf, properties, and use: Faith, Keyes & Clark's *Industrial Chemicals,* F. A. Lowenheim, M. K. Moran, Eds. (Wiley-Interscience, New York, 4th ed., 1975) pp 258-265.

Colorless, very refractive liquid; faint, not unpleasant odor. d_4^{20} 1.107. bp 131-132°. Solidif −55°. mp −45°. Flash pt 28°. n_D^{20} 1.5248. Insol in water; freely sol in alcohol, benzene, chloroform, ether.

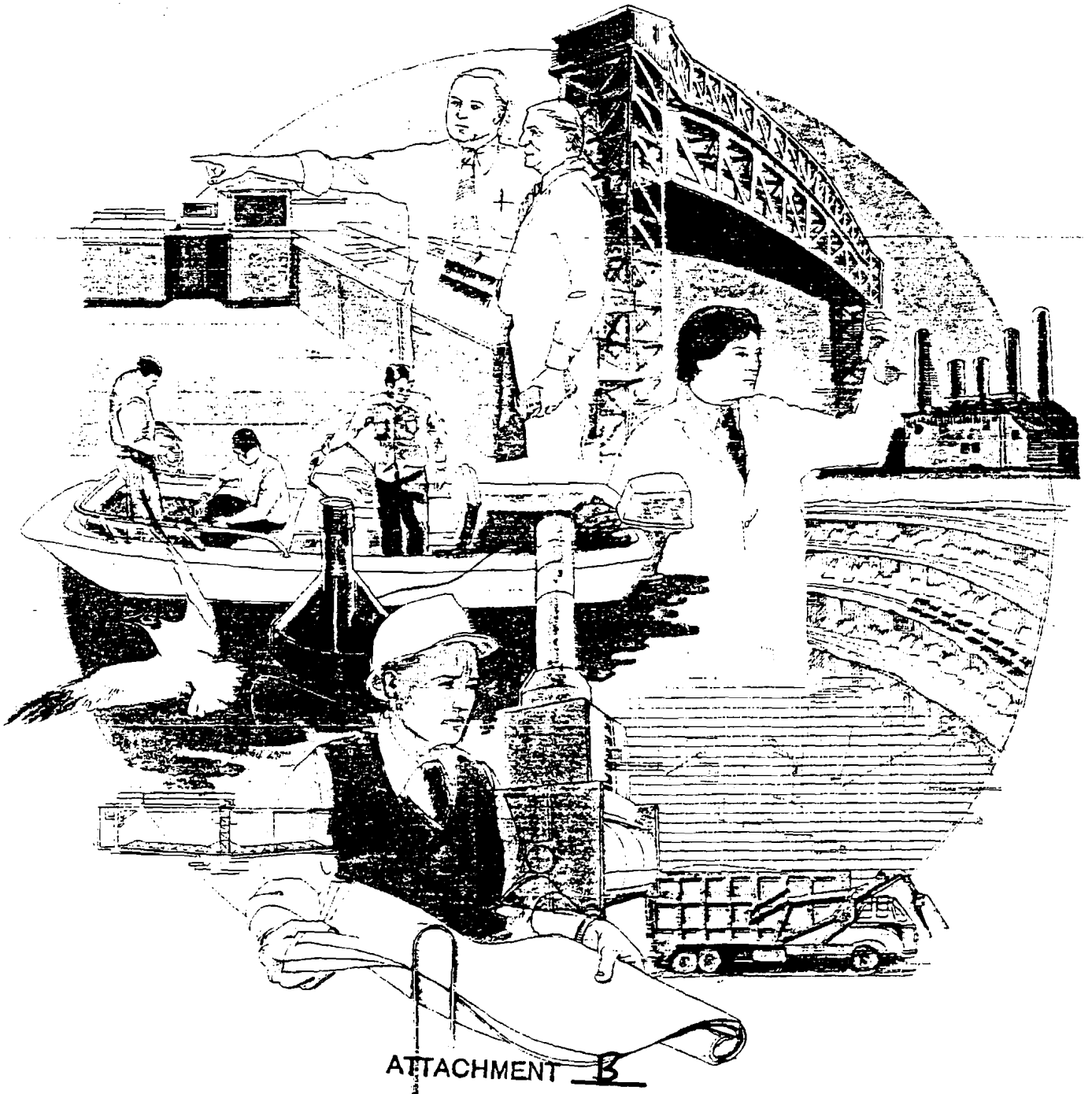
USE: Manuf phenol, aniline, DDT; solvent for paints; heat transfer medium.

2122. *p*-Chlorobenzenesulfonic Acid. *4-Chlorobenzene-*

WESTON
ENVIRONMENTAL CONSULTANTS-DESIGNERS

Hydrogeologic Investigation of the Subsurface Occurrence of Oil and Alternative Recovery Methods

Bayonne Industries, Inc.
Bayonne, New Jersey



ATTACHMENT B

SECTION 1

INTRODUCTION

1.1 GENERAL BACKGROUND

The Bayonne Industries, Inc. Terminal in Bayonne, New Jersey, encompasses some 180 acres, on what was the original site of the Tide Water Refinery, and is responsible for the storage and transshipment of Nos. 2, 4 and 6 fuel oil. In addition, other tenants on the property handle and store various chemicals and some tallow. Commodities enter and leave this terminal by ship, barge, tank truck, and tank car. The products are generally stored in large tanks, most of which are located in groups and surrounded by earthen dike areas or concrete walls. A general location map of Bayonne Industries, Inc. properties is shown in Figure 1-1. A plot plan showing the locations of storage tank and the general outline of the diked areas is presented in Figure 1-2*.

The Bayonne Industries operation has been cited by regulatory agencies for leakage of oil from the terminal into Kill Van Kull. The oil seepage control measures conducted by terminal personnel included the installation of continuous floating booms along the waterfront area to contain and collect oil and other floating substances which periodically issue from a portion of the terminal property. All underground non-active pipes are also being removed as a part of the pollution control measures.

* Located in the pocket in the back of the report.

B-2

SECTION 2

SITE DESCRIPTION

2.1 LOCATION

The main property of Bayonne Industries, Inc. is located on a reclaimed marsh area in Bayonne, New Jersey, with Kill Van Kull as the southern boundary, 22nd Street as the northern boundary, and the Platty Kill as the eastern boundary (Figure 1-1). The southwest portion of Avenue F forms the northwestern boundary, and the eastern end of Oak Street forms the western boundary of the property. The Newark Bay lies about 1.1 miles west of the property, and upper New York Bay is about one mile east from the property. The northeastern side of the property is about one-half mile from the upper New York Bay.

The topography of the surrounding heavily developed area is generally flat-lying and poorly drained. The area immediately surrounding the site is heavily industrialized. The area between the property and the upper New York Bay is covered by mainly oil-related industries. The residential area of the City of Bayonne lies to the west, northwest, and north of the area.

The Packard property of Bayonne Industries is a 7.24-acre area just north of the main property, across 22nd Street, as shown in Figure 1.1. The Currie property covers 12.18 acres and is about 1.5 miles northeast of the main property. Route 169 forms the eastern boundary of the Currie property (Figure 1-1) and the central railroad of New Jersey forms the western boundary.

B-3

2.2 USE

Bayonne Industries, Inc. is located on the original site of the Tide Water Refinery, which initially operated in the 1880's. As stated above, the site is presently a storage facility for storing and transshipment of Nos. 2, 4, and 6 fuel oil, while other tenants on the property handle and store various chemicals and some tallow. Commodities enter and leave the terminal by ship, barge, tank truck and tank car. There are over 300 tanks on the property with present storage capacity at approximately seven million barrels. In the plot plan (Figure 1-2), the prefix number of each tank indicates in which yard it is located. There are six yards identified in the main property. Table 2-1 shows the number of tanks in each yard containing Nos. 2, 4, or 6 fuel oil.

2.3 KILL VAN KULL OIL BOOM

Present oil seepage control measures conducted by Bayonne Industries includes the continuous floating oil boom along the water front from Pier 3 to Pier A. Oil and floating debris from behind the boom are being removed continuously by use of skimmer pumps. The Kill Van Kull outside the boom appears to be relatively free of oil.

2.4 WATERFRONT BULKHEADS

There is one wooden crib bulkhead on pilings at the waterfront between Piers 1 and 4 for a distance of approximately 750 feet. The wooden bulkhead is approximately 25 feet wide and 11 feet deep to the piling which is set into the clay. Figure 2-1 shows the construction details of the wooden bulkhead. The series of "boxes" made by wooden logs were then filled with rocks, cinders, bricks and other miscellaneous fill. The bottom of the horizontal piles is above mean low water elevation, allowing oil to seep into Kill Van Kull during low tides. This type of construction would also permit oil to become

B-4

SECTION 3

HYDROGEOLOGIC SETTING AND ANALYSIS

3.1 SUBSURFACE INVESTIGATION

As part of the program to obtain the data necessary for achievement of the objectives of geologic and hydrologic investigations, 60 pits were excavated with a backhoe. The samples from these test holes were examined to determine the type and distribution of the various subsurface materials (natural deposits, fill, water, oil, bedrock, etc.). Monitor wells were then constructed in each of these pits, which consisted of four-inch-diameter PVC pipe, with field-cut slots to measure oil thickness and/or water level. The slots were cut in a continuous manner to allow for fluctuations in the liquid level. The depth of these wells generally varies between eight to 13 feet from grade. The locations of the monitor wells were selected in such a way to provide maximum areal coverage of the property, with emphasis on known or suspected areas of subsurface oil occurrence.

Construction of monitoring points along the waterfront was very difficult due to the nature of construction of bulkheads, numerous buried pipelines, and limited space between the buildings and the waterfront. Three additional wells were drilled as observation wells for pump testing in the waterfront area, using an auger drill. These wells range in depth from 20 to 24 feet and were cased with two-inch PVC pipes.

At the Currie property, three test holes were drilled with a diamond core drill, as this area was underlain by diabase. All the wells were completed in the bedrock. The holes were cased with $1\frac{1}{4}$-inch PVC pipe and were gravel-packed to make wells suitable for liquid level measurements.

The depth of the wells in the Currie property range from 15 to 37 feet.

The location of all monitor points are shown in Figure 1-2. The wells are numbered TH1-1, TH1-2, etc. The first number after the letters TH (test hole) indicates the yard number; and the second, the number of the well in that yard. The distribution of these wells in different yards is as follows:

Yard	No. of Wells	Yard	No. of Wells
1	26	5	6
2	4	6	9
3	2	Packard	7
4	9	Currie	3

The logs of the wells constructed during this investigation are given in Appendix A, and the physical details of these test wells presented in Table 3-1.

In addition to the excavation and drilling during this investigation, all of the available test boring data for this property were collected and evaluated for further understanding of the vertical and lateral distribution of the subsurface materials. This existing data supplied by Bayonne Industries included test borings for Warehouse No. 2 and Yard No. 6 conducted by Raymond Concrete Pile Company in 1948, for the Tide Water Associated Oil Company. Logs and test borings, submitted by Warren George, Inc. for the treatment facility and the Slop Pond, were also utilized for this report and are presented as Appendix B.

3.2 GEOLOGY

3.2.1 Bayonne Industries Terminal and Packard Property

The main portion of the Bayonne Industries Terminal, including the Packard property, is underlain by unconsolidated gravel, sand, silt and clay, varying in thickness from a few feet to as much as 40 to 45

feet. The cross-sections shown in Figures 3-1 and 3-2 portray the nature and distribution of the subsurface materials. The upper portion of the area is composed of fill material (cinders, bricks, timbers, coal dust, stones, etc.) used to reclaim the swampy land. The average thickness of this fill material is about 10 feet. This fill material is underlain by low-permeability, gray, clayey silt, peat or meadow mat, swamp muck, and marsh deposits. The average thickness of this layer varies between 10 and 15 feet. Alternating beds of fine to coarse grained sand or gravel and clay of varying thickness underlies the upper confining clays and silt.

3.2.2 Currie Property

The Currie property is underlain by diabase, a basaltic rock of igneous origin. There are a few outcrops of diabase in the northeastern part of the property, and these outcrops show two sets of intersecting fractures: one, northeast to southwest; and the other, northwest to southeast. Overlying the bedrock is a layer of 10 to 15-foot thick fill material composed of clayey silt, clay, and sand.

3.3 GROUNDWATER FLOW

Depths to the water table were measured in wells several times during this investigation in order to define groundwater flow directions and the hydraulic gradient. The average depth to water table varies between five to seven feet below ground surface. The water table contour map prepared for 15 June 1978 is presented as Figure 3-3*. As expected, the general flow of ground water is toward Kill Van Kull. The water table contour map indicates several directions of groundwater flow within the property as follows:

- South to the waterfront along the extreme eastern portion

* Located in the pocket.

of the property and from the southern edge of the property

- Southeast from the northwestern corner of the property for a short distance and then to the west
- West from the western two-thirds of the property
- Northeast along the groundwater "trough" in the Packard property

The flow of oil is mainly affected by this shallow groundwater flow system. The hydraulic gradients computed for the waterfront area based on field measurements taken on 15 June 1978 are as follows:

Between Wells TH1-18 and TH1-19	0.007
Between Wells TH1-19 and TH1-15	0.005
Between Wells TH1-26 and TH1-3	0.013
Between Wells TH2-2 and TH1-25	0.017
Between Wells TH1-3 and TH1-25	0.079
Between Wells TH2-1 and TH1-3	0.013

The analysis of the above data indicates an average hydraulic gradient of 0.005 to 0.017 for the area immediately north of the bulkheads between Pier Nos. 1 and 3. There is, however, a substantial increase in hydraulic gradient between the wells just outside of the bulkhead and within the bulkhead, as indicated by the hydraulic gradient of 0.079 between TH1-3 and TH1-25 (see Figures 3-1 and 3-2).

3.4 TIDAL FLUCTUATIONS

The tidal fluctuation in the Kill Van Kull averages about four to five feet. Automatic water level recorders were installed on Wells TH1-3 and TH1-4 to monitor the tidal effect on groundwater levels. In both these wells, the fluctuations in groundwater level were no more than 1.5 foot, indicating a relative tightness and damming of water at the bulkheads.

Well TH1-25, which is within the wooden bulkhead, is 20 feet deep. In this well, water level fluctuation of about 4.25 feet was observed in response to tidal fluctuation in the Kill Van Kull on 15 June 1978. Different response to tides within the bulkhead area and immediately north of it may be due to the variable open space between the bottom of the bulkhead and the layer of gray, clayey silt at the northern side of the bulkhead, as shown in Figure 2-1.

JM-012

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO FILE

FROM CLARE P SULLIVAN, HSMS III, BUREAU OF PLANNING AND ASSESSMENT DATE

SUBJECT DIVISION OF ENVIRONMENTAL QUALITY PERMITS AND VIOLATIONS, WHITE CHEMICAL CO., BAYONNE, HUDSON COUNTY.

On August 4, 1988, the writer reviewed the files at the Metro Regional Office of the Division of Environmental Quality for the White Chemical Company located in Bayonne, Hudson County (Plant ID 10412). The facility is located within the Bayonne Industries complex which is described by the Bayonne Tax Office as Block 381-A, Tract 11, Riparian Grant 41 A-1 and 41 A-3, covering a total at 180.13 acres.

On November 7, 1975, a complaint was received due to the presence of a white mist which was irritating to the eyes.

An Order was issued to both Bayonne Industries and White Chemical on June 9, 1976 due to the operation of a bromination kettle, controlled by a packed tower and scrubber, without a permit. This apparatus was apparently installed about two years previously and consisted of a 4000 gallon P. Fandler kettle for the bromination of biphenyl. The bromine, HBr, and HCl were absorbed in packed columns using tetrachlorothane as an absorber. The final exhaust was to an existing wood scrubber. The report indicated that the control apparatus appeared to be adequate for the operation involved.

An inspection was conducted on February 18, 1977 to check compliance with the Order issued June 9, 1976. The company had since made intermediate filings and was found to be in compliance.

A newspaper article which was dated June 18, 1977 indicated that the EPA Administrator had stated that traces of PBB had been found in human hair, fish, plants, soil, and water. A subsequent article dated June 21, 1977 indicated that White Chemical denied that they manufactured PBBs. An EPA spokesman stated that White manufactured octabrominated, decabrominated and hexa brominated biphenyls in Kettles 11 and 15. White confirmed that they manufactured hexabrominates in 1974 and the other two compounds in 1976-1977. Decabrominated biphenyls was the only chemical of the three which were currently produced at the time of the article.

On March 16, 1977 a complaint was received due to strong onion type odors which were too strong to allow workers in adjacent facilities to work.

On April 24, 1977 a complaint of lachrimatory odors in Bayonne was received. The source of those odors were not definitively identified as being from White Chemical.

On June 26, 1980 there was a spill of pivaloyl chloride (trimethylacetyl chloride) when a pallet cracked, causing two drums to fall to the ground, one of which ruptured. Local fire officials were not notified by White Chemical who, instead, proceeded to clean-up the spill by flooding the area with water. When pivaloyl chloride comes in contact with water, it yields solid pivalic acid and HCl. As a result, a vapor cloud was formed which traveled west beyond the perimeter of the Bayonne Industries complex. The police detected this vapor cloud and alerted fire officials who directed

Attachment D

White to collect the residues of the spill into drums. However, on June 27, 1980, detectable odors of HCl were noted by Hudson Regional Health Commission representatives.

On April 13, 1981 an inspection was conducted by Gary Garetano of the Hudson Regional Health Commission in response to a distinct odor which seemed to be originating from White Chemical. The odor was identified by the plant manager as methyl butyrate, which was being used in a reaction process. There was no reported equipment malfunction according to the plant manager, however he stated that the control apparatus would be checked. Methyl butyrate has a 100% odor recognition at a concentration of two parts per billion (ppb).

On July 14, 1981 an Order was issued to White Chemical Co. due to the failure of the company to submit a plan to achieve compliance for source operations relating to volatile organic substances. The company stated that, as they were planning to move operations out of the Bayonne Industries complex to a new site in Newark, they had not filed the report. By letter dated August 3, 1981, White Chemical indicated that their usage of volatile organic solvents was small, with the largest tank having a 12,000 gallon capacity. This tank was used to store methanol. No open tanks containing solvents were used according to this letter.

On September 25 and September 26, 1982 an anonymous complaint was received concerning yellow orange fumes which were being emitted from the White Chemical facility.

Three additional permits were reviewed other than those contained elsewhere in this report. These are outlined below.

Permit 30312 regulated a centrifuge located in Process Building E, used to filter and wash crystalline products from slurrys. The slurry was composed of a brominated organic solid which was added to the centrifuge and spun out. After, the cake was washed with methanol and spun dry. The resulting cake was drummed for shipment off-site. The solvent was recovered. Raw materials and potential air contaminants listed were tetrachloroethane and methanol.

Permit 30093 regulated hyrogen bromide vapor generated from a bromination process which was recovered through a recirculating water absorption system. During this process, a solvent was precharged to a bromine absorber hold tank, and water was precharged to a hydrogen bromide hold tank. Recirculation was started in both loops, and solvent and an organic hydrocarbon were blown into the reactor. Bromine was then pumped into a reactor and a catalyst was added. Hydrogen bromide gas which was emitted from the reaction was cooled and the bromine was removed in a bromine absorber. Raw materials listed for the system include bromine, aluminum trichloride, tetrachloroethane, and biphenyl oxide. Potential air contaminants listed include bromine gas, tetrachloroethane, hydrogen bromide, and hydrogen chloride.

Permit 2123 regulated a drying operation of Vancide (cis-(1,2-bis [n-propyl mercapto] ethene) which contained aqueous pentanol. Potential air contaminants listed include phenolic resin, trans-1,2-bis (n-propylsulfonyl) ethene.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

MAR 30 1979

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

437-0050

Mr. William Richardson
Plant Manager
White Chemical Corporation
East 22nd Street
Bayonne, New Jersey 07002

Re: White Chemical Corporation
Permit No. NJ 000 1538

Dear Mr. Richardson:

Pursuant to authority granted by Section 1342 of the Clean Water Act, as amended ("the Act"), 33 U.S.C. §§1251-1376, the Regional Administrator for Region II of the United States Environmental Protection Agency has made a final determination to issue a National Pollutant Discharge Elimination System (NPDES) permit for the above-indicated facility. All comments received as a result of EPA's Public Notice of its intent to issue an NPDES permit have been considered by EPA in making this final determination.

Enclosed you will find the final determination referred to above, the original and one copy of an enforcement order issued pursuant to Section 1319 of the Act, and 10 copies of EPA Discharge Monitoring Report Form 3320-1 (10-72). Please read the final determination carefully, since it may contain changes from the Draft Permit which you received. You may also find enclosed a copy of a memorandum addressing any comments received concerning this NPDES permit. This memorandum has been prepared by the EPA staff and explains this Agency's position on the issues raised by any comments received. If no comments were received concerning this permit no such memorandum has been prepared.

The enclosed final determination will become a final NPDES permit, issued and effective in its entirety, and a legal requirement of your organization of the date indicated unless a request for an Adjudicatory Hearing is granted pursuant to the provisions of Title 40, Section 125 of the Code of Federal Regulations, as amended, 39 Federal Register1143, pp. 27079-27084 (July 24, 1974).

2ENF-WE C.DUDNICK:gpn x5546 3/27/79

	CONCURRENCES							
SYMBOL	2ENF-WE	2ENF-WE	2ENF-WE	Baker, R. PM-PA				
SURNAME	Cud	PJT	TMS					
DATE	3/27/79	3/28/79	3/29/79					

EPA Form 1320-1 (12-70) OFFICIAL FILE C

ATTACHMENT E

Kindly acknowledge receipt, or have a duly authorized official of White Chemical Corporation acknowledge receipt, of the enclosed enforcement order in the space provided on the original, and return such original to my attention no later than 5 business days from receipt of this letter.

Please be advised that violation of any of the terms or conditions of the enclosed permit or enforcement order may subject your organization and its officials to the civil and criminal penalties provided for in Section 1319 of the FWPCAA. These penalties include imprisonment for up to one year and fines of up to $50,000.00 per day of violation.

Your cooperation in the NPDES program is appreciated.

Sincerely yours,

Richard A. Baker
Chief
Permits Administration Branch
Planning & Management Division

Enclosure

cc: Mr. Kim Battiste (w/encl.)
Marshall, Bratter, Greene, Allison & Tucker
430 Park Avenue
New York, New York 10022

Mr. Richard E. Bellis (w/encl.)
Assistant Director
Monitoring, Surveillance &
Enforcement Element
Division of Water Resources
New Jersey Department of
Environmental Protection
P.O. Box CN-029
Trenton, New Jersey 08625

I
Group # 3

Permit No. NJ0001538

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et seq; the "Act"),

White Chemical Corporation

is authorized to discharge from a facility located at

Foot of East 22nd Street
Bayonne, New Jersey 07002

to receiving waters named

Platty Kill Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on May 31, 1979.

This permit and the authorization to discharge shall expire at midnight, March 31, 1981.

By authority of Eckardt C. Beck, Regional Administrator.

Signed this 30 day of MARCH 1979

Meyer Scolnick

Meyer Scolnick, Director
Enforcement Division

E-3

WHITE CHEMICAL CORPORATION
EAST 22ND STREET, BAYONNE, N. J. 07002 P. O. BOX 278

PHONE: (201) 437-0050
TELEX: 12-8130
CABLE: CHLORACIDS
BAYONNE, N. J.

March 31, 1977

THIS LETTER CONTAINS INFORMATION CONSTITUTING TRADE SECRETS AND IS TO BE KEPT CONFIDENTIAL BY THE ENVIRONMENTAL PROTECTION AGENCY PURSUANT TO 33 U.S.C. S160(f)(2) and 40 C. F. R. S124.35(b)

Mr. Jonathan Josephs, Chemical Engineer
Water Facilities Branch
Facilities Technology Division
Environmental Protection Agency
26 Federal Plaza
New York, New York 10007

Re: NPDES Application No. NJ 0001538

Dear Mr. Josephs:

This is in response to your letter of March 15, 1977 requesting certain information from White Chemical Corporation in connection with the above-referenced permit application.

At the outset, from our best information it appears that the analytical methods used to date by the EPA are inadequate. The flame ionization detector cannot effectively detect chlorinated hydrocarbons in waste water samples, as you stated in your letter and to Mr. Regenbogen at your meeting in Edison, New Jersey on March 1, 1977. The electron capture detector used in the EPA tests of February 2, 1977, produced "results" which are clearly unsubstantiated by the facts. For example, your tests indicate findings of chloroform, toluene and xylene in White Chemical's effluent discharge. However, White Chemical has used no chloroform whatsoever for approximately fourteen years; no toluene effluent was discharged since November 29, 1976; and no xylene effluent was discharged since April, 1974.

At your suggestion, Mr. Regenbogen has investigated the purchase of an electron capture detector. The machine would cost approximately $14,000. Its only function not already within the capability of White Chemical's laboratories would be the performance of the unvalidated and likely unreliable tests discussed above. Mr. Regenbogen has expressed his willingness to work with the EPA in developing and validating testing procedures; however, contrary to your suggestion that the EPA's Edison labs would thus cooperate

ATTACHMENT E-4

with White Chemical, we are now advised that the laboratories have neither the time nor the personnel to do so.

Unvalidated tests cannot properly serve as the basis for determination by the EPA with respect to White Chemical's effluent discharge levels. It is difficult to reconcile your position, which would apparently require the Corporation to develop new methods of analysis without providing the facilities or personnel to validate the results thereof, with the Corporation's good faith attempts to cooperate in the process of developing standards.

The following information is in response to the further questions set forth in your letter.

On February 2, 1977, when the NJDEP collected samples for testing, the Corporation was manufacturing amyl bromide, phosphorus tribromide, polyethylene glycol dichloride and pentabromotoluene. Carbon tetrachloride was in use on that date and, if present at all, would have been found in the sample source for Lab Sample No. 39212. Carbon tetrachloride, however, could not possibly have been present in the sample No. 39213, which was taken from the Corporation's non-contact cooling fresh water. This is not even from a process that uses carbon tetrachloride. If carbon tetrachloride is present, it must be in the Bayonne drinking water. Tetrachloroethane and toluene were in a reactor on February 2, 1977 in a part of the plant from which they could not have entered the sources of your samples and, in addition, they were at a stage where no water contact had taken place. White Chemical has not made calcium phosphite for at least several months prior to the date the samples were taken.

In conclusion, we do not believe the analyses are correct because we do not believe the Bayonne drinking water is contaminated with these chemicals.

Attached to this letter are data showing the effect on COD levels from various treatment methods tested by the Corporation, described as per your request.

White Chemical water usage breaks down as follows:

WHITE CHEMICAL CORPORATION

Water Source	Average Usage
Jacket cooling fresh water	0 - 15,000 gallons/day
Non-contact condenser fresh water	60,000 - 100,000
Contact process water	500 - 5,000
Reactor cleanup water	200 - 400
Contact salt water (from barometric leg outlet on vacuum jets)	70,000 - 140,000
Condenser cooling salt water (re-used in scrubbers)	390,000 - 460,000

Very truly yours,

WHITE CHEMICAL CORPORATION

William Richardson

William Richardson
Plant Manager

WR/mw

10-12

Copy

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
POST OFFICE BOX CN-029
TRENTON, N. J. 08625

Arnold Schiffman
Director

December 20, 1979

White Chemical Corporation
Post Office Box 278, East 22nd Street
Bayonne, New Jersey 07002

Attention: Mr. Henry L. Bartz, Plant Engineer

Re: Proposed Installation of Tanks to comply with order dated March 29, 1979 by the U.S.Environmental Protection Agency

Dear Mr. Bartz:

According to the information submitted to this Division on November 26, 1979 the White Chemical Corporation proposes to comply with the above referenced order by installing two fiberglass tanks to hold saleable by-products and four fiberglass tanks to hold wastewater pending transfer to a New Jersey licensed treatment facility for proper treatment and disposal.

It is our understanding that all of the proposed tanks will be within suitably diked areas to provide adequate containment in the event of an accidental spill or tank failure.

Since this appears to be a suitable means of complying with the order's imposed deadline of December 31, 1979, we have no objection to the proposal, pursuant to N.J.A.C.7:14-2.1 et seq.

Very truly yours,

Ralph Mortensen,
Senior Environmental Engineer
Raritan-Interstate Basin
Pollution Control Monitoring,
Surveillance and Enforcement Element

cc: Solid Waste Administration
Mr. J. Goldstein, Bayonne Department of Community Development
Mr. J. Josephs, U.S.E.P.A.
Office of Hazardous Substances Control-Mayor and Council City of Bayonne
Dr. A.I. Mytelka, ISC. — H. Bennett, Esq.

ATTACHMENT 67

Region II Office

March 14, 1979

Final Permit for White Chemical Corp. (NJ0001538)

Jonathan Josephs, Chemical Engineer
Water Facilities Branch

Richard A. Baker, Chief
Permits Administration Branch
Planning & Management Division

EPA received two letters in response to the public notice of EPA's proposed determinations for issuance of the above-referenced permit. The letters were submitted by the following persons:

Mr. Raymond T. Schwedfeger, President
Bayonne Industries, Inc.
P.O. Box 281
Bayonne, New Jersey 07002

Marshall, Bratter, Greene, Allison & Tucker
430 Park Avenue
New York, New York 10022

The White Chemical Corporation is a tenant on the property of Bayonne Industries, Inc. In his letter dated July 17, 1978 Mr. Raymond T. Schwedfeger, President of Bayonne Industries, made three comments regarding the proposed permit. His comments are summarized below:

1. Construction workers have complained about fumes while working on the sewer system which conveys the effluent from the White Chemical Corporation. These fumes may be due to free chlorine or free bromine which could be present in the effluent. The draft permit did not mention free chlorine or free bromine.

2. The COD test was suggested for monitoring the effluent.

3. It seems unlikely that the monthly monitoring of the intake pH proposed in the draft permit is adequate to correlate the weekly discharge pH measurements to the intake values.

EPA's response to these comments is as follows:

1. Although no information is presently available to EPA on the amount of free chlorine and bromine present in the wastewater, it

2 WA-WF:JJOSEPHS:rw:3/14/79:X2936

CONCURRENCES

BOL	2 WA-WF	2 WA-WF						
NAME	J.J.	J.R.						
TE	3/14/79	3/15/79						

Form 1320-1 (12-70)

OFFICIAL FILE COPY

E-8

is EPA's belief that the wastewater abatement plans to be implemented by White Chemical Corporation will ensure that environmentally harmful quantities of free chlorine and bromine are not discharged. These abatement plans are discussed later in this memo. Therefore, no permit requirements directly limiting free chlorine or free bromine have been added to the permit.

2. COD was considered by EPA as a parameter for inclusion in the permit. However, EPA dropped COD from consideration because of the high chloride content of the effluent. Chloride concentrations above 250 mg/l are known to interfere with the accuracy of the COD test.

3. The frequency for pH monitoring of the intake water supply has been changed to weekly.

Ms. Terri E. Simon of Marshall, Bratter, Greene, Allison & Tucker, attorneys for White Chemical Corporation, submitted comments on the draft permit with a letter dated July 17, 1978. Ms. Simon's comments on matters of a legal nature will be discussed in a separate memorandum from the Water Enforcement Branch. Ms. Simon's comments on the technical aspects of the permit are outlined below:

1. A schedule was proposed to achieve compliance with permit requirements. The major milestones in the schedule are:

a. Segregate process wastewaters (excluding contact cooling and scrubber water) and send the segregated process wastewaters to a licensed waste processing firm within 25 weeks.

b. Eliminate contact cooling wastewater by the installation of vacuum pumps and surface condensers within 50 weeks.

c. Eliminate scrubber wastewater pollutants by the installation of a scrubber water recirculation system within 50 weeks.

2. A relaxation of the required monitoring schedule was suggested for the time period after compliance with all permit requirements has been demonstrated.

3. A request was made for the permit duration to be extended to five years.

4. An interpretation of how the percent removals for the process water should be calculated to determine compliance with process water limitations was given.

5. It was requested that the permit recognize that it is not possible to comply with the monitoring requirements until the necessary monitoring equipment is installed.

EPA's response to the above comments is as follows:

1. A schedule similar to the one proposed by Ms. Simon will be included in an order to be issued by the Enforcement Division. Because the statutory deadline for attaining the effluent limitations has passed, the schedule cannot be included in the permit. The proposed elimination of the discharge of process wastewater (other than contact cooling and scrubber wastewaters) has been made a permit requirement, replacing the draft permit limitations for the process wastewater.

2. A less extensive monitoring schedule has been specified in the permit, taking effect upon the elimination of all discharges other than non-contact cooling waters and stormwaters and the attainment of all effluent limitations.

3. The expiration date cannot be extended because of the EPA regulation promulgated in the Federal Register of December 11, 1978 on page 58067. These regualtions require an expiration date of March 31, 1981 for organic chemicals manufacturing facility permits so that a new permit including a schedule to achieve effluent limitations derived from new effluent guidelines scheduled for promulgation may be issued, taking effect after March, 31, 1981.

4. Since the elimination of the discharge of process wastewater will be a permit requirement, the method of calculation for process water percent removals becomes academic.

5. It is recognized that permanent effluent monitoring installations may not be operative until the repiping of wastewater streams associated with the abatement schedule is completed. Therefore, the order to be issued by the Enforcement Division will contain interim monitoring requirements which can be performed without installed flow meters and automatic samplers.

A copy of the final permit is attached. Please proceed with the issuance of this permit.

Attachment

Dr. Preuss Office Documents!

environmental science and engineering, inc.

AN EQUAL OPPORTUNITY EMPLOYER

REFERENCE 75-057-023

ENVIRONMENTAL ENGINEERING
AIR QUALITY MANAGEMENT
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GEOLOGY
GEOLOGICAL ENGINEERING
WASTEWATER MANAGEMENT
SOLID WASTE MANAGEMENT
OCCUPATIONAL SAFETY/HEALTH

DATA REPORT FOR POLYBROMINATED BIPHENYL NEAR MANUFACTURES IN THE NORTHEAST

Prepared By

Environmental Science and Engineering, Inc.
P.O. Box 13454, University Station
Gainesville, FL 32601

June 16, 1977

For

Office of Toxic Substances
Environmental Protection Agency
Washington, D.C. 20460

ATTACHMENT F

WHITE CHEMICAL COMPANY, BAYONNE, NEW JERSEY

Number	ISOMER 1	2	3	4	5	6	7	8	9	10	Total†	Comments
10S	<10	<10	<10	<10	<10	20	20	60	1300	1400	2800	Soil
11S	<10	<10	<10	<10	<10	10	70	100	220	350	750	Soil
[illegible]	<.2	<.2	<.2	<.2	<.2	.2	.2	1.1	1.3	3.8	6.6	Water at mouth of Platti Kill
13W	<.2	<.2	<.2	<.2	.5	1.0	.7	.7	4.7	23	31	Water at head of Platti Kill
14W	--	--	--	--	--	--	--	--	--	--	--	Water at mouth of Platti Kill
15A	<.05	<.05	<.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	.06	Crosswind Air
16A	<.05	<.05	<.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	.06	Downwind Air
17SE	540	2200	4300	<10	590	2500	2200	2400	15000	260000	290000	Sediment at Head of Platti Kill
18SE	--	--	--	--	--	<10	<10	<10	<10	<10	<10	Sediment at Mouth of Platti Kill
19SE	--	--	--	--	--	<10	<10	<10	<10	<10	<10	Sediment in Kill Van Kull
[illegible]SE	<10	<10	<10	<10	<10	10	10	<10	<10	<10	20	Sediment
[illegible]T	--	--	--	--	--	<10	<10	<10	<10	<10	<10	Algae
22T	<10	<10	<10	<10	<10	50	50	50	280	470	900	Lichen
23T	<10	<10	<10	<10	<10	40	<10	<10	120	<10	160	Fish
39H	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Male & Female hair reported as PBB in oil

F-7

WHITE CHEMICAL COMPANY, BAYONNE, NEW JERSEY (Continued)

	ISOMER											
Number	1	2	3	4	5	6	7	8	9	10	Total†	Comments
40H	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Female hair repo as PBB in oil
41H	<100	8100	<100	<100	<100	<100	<100	<100	<100	<100	8100	Male & Female hai ported as PBB i
39H	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	Reported as PBB hair sampled
40H	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	" " "
41H	<10	90	<10	<10	<10	<10	<10	<10	<10	<10	90	" " "

DATA* TABLE #2

*All data reported as parts per billion (PBB except for the air samples 15A and 16A which are reported as nanograms per cubic meter of air sampled.

†Total value only sums the real values and not the values reported as less than (<). These values are noted on Figure 2.

F-3

DATE: February 28, 1977

SUBJECT: Laboratory Results - White Chemical Co., Bayonne, New Jersey

FROM: Francis T. Brezenski, Chief
Technical Support Branch

TO: Jonathan A. Josephs
Facilities Technology Division
Water Facilities Branch
26 Federal Plaza
New York, N.Y. 10007

EPA Lab. Sample No.	BOD_5 mg/l	TSS mg/l	TOC mg/l	COD mg/l	Sample Source
39212	*	157	16.2	124	Collected from left outfall prior to combining with right outfall pipe, White Chemical Co.
39213	2	7	2.1	429	Collected from right outfall prior to combining with left outfall pipe, White Chemical Co.

*Presence of strong reducing agent, D.O. not detectable.

The samples were also extracted with hexadecane and analyzed by computerized GC/EI MS for volatile organics. Results are as follows:

EPA Lab. Sample No.	carbon tetrachloride µg/l	chloroform µg/l	toluene µg/l	xylenes µg/l	tetra-chloroethane µg/l
39212	245	5.5	3.2	7.8	48
39213	230	N.D.	N.D.	N.D.	26

N.D. = Not Detected. Minimum detection limit was < 0.1 µg/l.

cc: Chris Schiller
N.J.D.E.P.
P.O. Box 2809
Trenton, N.J. 08625

EPA Form 1320-6 (Rev. 3-76)

37

F-4

MINUTES - PBB INTERAGENCY MEETING

Wednesday, January 4, 1978

A meeting of the Interagency Workgroup for PBBs was convened on Wednesday, January 4, 1978 in EPA Edison Labs to discuss: (a) status of investigations conducted by Federal and State agencies; (b) review of regulatory options now under consideration; and (c) coordination needs for regulatory actions and data releases, i.e. press releases. Attached is list of attendees.

Summarized below are the results of the meeting. It must be emphasized that these discussions, as with previous ones, are considered confidential.

Investigations:

OSHA

OSHA has visited both manufacturers (Hexcel and White Chemical), and several past users. Samples were collected and analyzed for PBDO. Hexcel air samples (personnel samplers) showed values of 0.18 and 0.23 mg/m^3 8 hr. TWA. Swipe tests were also made and showed PBDO levels up to 8 mg/100 sq. cm. and PBB levels up to 17 mg/100 sq. cm. One sample showed a PBB level of 0.1 mg/100 sq. cm. on an eating table. It was interesting to note that these data, based upon samples collected after the companies ceased production of PBBs, showed persistence of PBBs in the workplace. The significance of these levels, however, was not quite clear based on data available to OSHA. NJDEP and EPA were both interested in comparing these levels with those collected in the workplace for PCBs. NIOSH voiced concern, because of several technical issues, in making any conclusions based on this comparison. OSHA agreed to provide the attending agencies with any PCB data they have available. NIOSH, which also may have PCB workplace data, would likewise distribute same. Some workplace readings obtained by OSHA on PCBs were 2.1, 2.3, 2.3 mg/m^3. The OSHA standard is 0.5 mg/m^3.

OSHA also, with assistance of EPA-OTS at Headquarters, prepared a questionnaire for PBBs only. Fifty-seven employees were interviewed at Hexcel, White, Fluidized Processing, and Standard T Chemical. Reviews of the results were made by OTS-Headquarters and NIOSH. These reviews, which are attached, suggested that exposure to PBBs in the workplace may be causing health problems, but further study would be needed to definitely define the type and extent of such problems.

OSHA indicated that they do not have adequate effects data to evaluate the employee health significance of the PBB levels found at Hexcel and White Chemical in the context of their legislative mandates. Thus, they cannot, at this time, issue a citation under Section 5(a)(1) of Occupational Health and Safety Act.

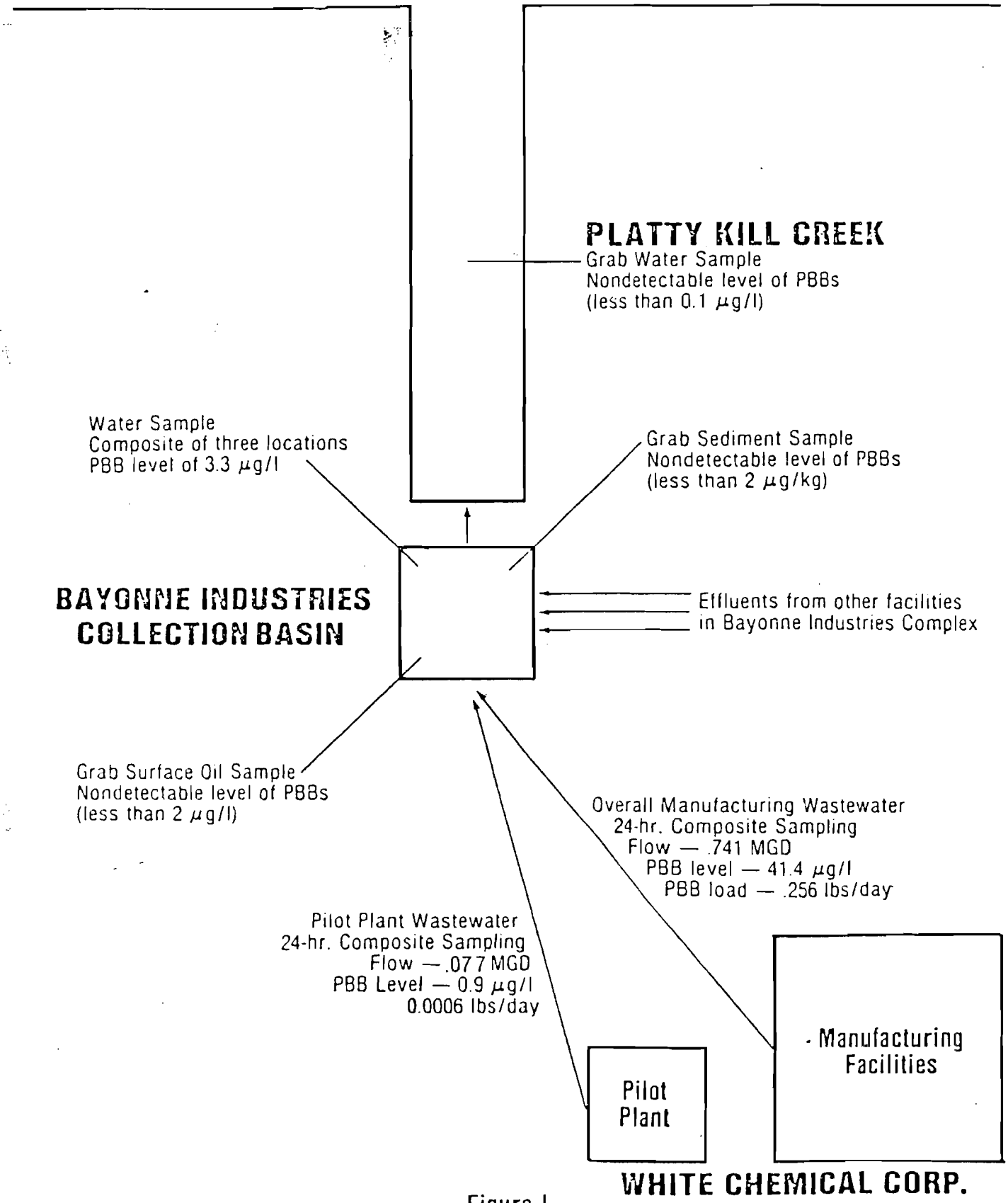
KILL VAN KULL
PLATTY KILL CREEK
Grab Water Sample
Nondetectable level of PBBs
(less than 0.1 µg/l)
Water Sample
Composite of three locations
PBB level of 3.3 µg/l
Grab Sediment Sample
Nondetectable level of PBBs
(less than 2 µg/kg)
BAYONNE INDUSTRIES
COLLECTION BASIN
Effluents from other facilities
in Bayonne Industries Complex
Grab Surface Oil Sample
Nondetectable level of PBBs
(less than 2 µg/l)
Overall Manufacturing Wastewater
24-hr. Composite Sampling
Flow — .741 MGD
PBB level — 41.4 µg/l
PBB load — .256 lbs/day
Pilot Plant Wastewater
24-hr. Composite Sampling
Flow — .077 MGD
PBB Level — 0.9 µg/l
0.0006 lbs/day
Manufacturing
Facilities
Pilot
Plant
WHITE CHEMICAL CORP.

Figure I.

ASHINGTON CI E 815 H STREET, N.W.
WA TON, D.C. 20005

CABLE ADDRES
TELEX 127544

MARSHALL, BRATTER, GREENE, ALLISON & TUCKER

400 PARK AVENUE, NEW YORK, N.Y. 10022 · (212) 421 2200

July 22, 1977

Mr. Meyer Scolnick
Director, Enforcement Division
United States Environmental Protection
Agency
Region II
26 Federal Plaza
New York, New York 10007

Dear Mr. Scolnick:

Reference is made to your request for information from our client, White Chemical Corporation (the "Corporation concerning polybrominated biphenyls (PBBs).

The following information, in response to paragraph 1 through 4 of your letter, comprises trade secrets and confidential business information of the Corporation. I trust that the Environmental Protection Agency will respect the confidential character of the data and will, accordingly, restrict the use thereof.

At the outset, it should be stressed that the Corporation does not presently produce PBBs. I am advised that the Corporation terminated production of PBBs as follows Hexabromobiphenyl was last produced on August 25, 1975; octabromobiphenyl on January 19, 1977; nonabromobiphenyl on January 11, 1977; decabromobiphenyl on March 8, 1977. The Corporation never produced any other PBBs. Thus, I am advised, there can be no risk of production discharge of such chemicals from the Corporation's facilities at this time. The following information, however, is in response to your letter.

1. The Corporation maintains its corporate headquarters and plant at the foot of East 22nd Street, Bayonne, New Jersey 07002. The Corporation's only facility was constructed in 1961. Thirty-eight employees and eight supervisors, working on three shifts (8:00 a.m. to 4:00 p.m.; 4:00 p.m. to 12:00 a.m.; 12:00 a.m. to 8:00 a.m.), are associated with production. The plant operates 5 1/2 days per week, year-round. Chemical production is by batch, rather than continuous operation.

ATTACHMENT F-7

The Corporation's intake water, which undergoes nc treatment, comes from surface water of the Kill Van Kull (530,000 gallons per day) and the Bayonne municipal water system (112,000 gallons per day). The Corporation uses 640,000 gallons per day as process (including contact cooling) water and 2,000 gallons per day (from the municipal system) for sanitary purposes. No water is used for non-contact cooling or boiler feed. Figures are estimated on the basis of 1976 average usage.

2. As pointed out above, the Corporation does not currently produce any PBBs. Between 1973 and the final production dates set forth above, according to records maintained by the Corporation, it produced such chemicals ir amounts as follows:

Product	Quantity
Hexabromobiphenyl [C(12)H(4)Br(6)]	38,987 lbs.
Octabromobiphenyl [C(12)(H(2)Br(8)]	142,929
Nonabromobiphenyl [C(12)HBr(9)]	12,200
Decabromobiphenyl [C(12)Br(10)]	195,088

In 1974, approximately 30,000 pounds of octabromobiphenyl were imported and sold. The Corporation combined 8,540 pounds of nonabromobiphenyl with 13,460 pounds of decabromobiphenyl to make 22,000 pounds of "golden decabromobiphen

Customers purchased PBBs from the Corporation in amounts as follows:

Customer	Product	Quantity
Akzo Chemie Nederland B.V. Brink 13 P. O. Box 10 Deventer, Holland	Octabromobiphenyl Decabromobiphenyl	198 lb 15,620
Borg-Warner Box 1868 Parkersburg, West Virginia	Hexabromobiphenyl	44,591

Borg-Warner Chemicals P.O. Box 8122 Amsterdam, Netherlands	Octabromobiphenyl	150,980
Chemikalien- Aktiengesellschaft Westeinde 6 Amsterdam, Netherlands	Decabromobiphenyl	56,100
Chemikalien- Aktiengesellschaft Senckenberg-Anlage 10/12 6000 Frankfurt (Main) Germany	Decabromobiphenyl Nonabromobiphenyl Golden decabromobiphenyl	52,600 220 22,000
Hamilton-Auslander 771 Main Street Phenix, Rhode Island	Decabromobiphenyl	220
Marbon Division P. O. Box 68 Washington, West Virginia	Octabromobiphenyl	11,000
Mitsui & Co. (U.S.A.) Inc. 200 Park Avenue New York, New York	Decabromobiphenyl	2,200
Moussex-Sarl Route de Rohwiller 43 P.O. Box 23 67240 Bischwiller, FRANCE	Octabromobiphenyl	125
New England Laminates 481 Canal Street Stamford, Connecticut	Octabromobiphenyl	8,100
Park Name Plates 33-37 Farrington Street Flushing, New York	Octabromobiphenyl	600

Produits Chimiques Ugine Kuhlman 25 Blvd. de L'Amiral Bruix 75016 Paris, FRANCE	Decabromobiphenyl	44,000
Solehem-New York 415 Madison Avenue New York, New York	Octabromobiphenyl	220
Voltek-U.S. 100 Shepard Street Lawrence, Massachusetts	Decabromobiphenyl	440

During such times as the Corporation produced PBBs, the only other organization involved in the production process was Fluidized Processing, Inc., 19 Freeman Street, Newark, New Jersey 07105, which dried and packaged such chemicals after the Corporation had completed its production operations.

During 1976 and until all PBB production was terminated in early 1977, the Corporation produced PBBs as follows: three batches of octabromobiphenyl (4,800 - 11,100 pounds per batch); one batch of nonabromobiphenyl (11,100 pounds); and thirteen batches of decabromobiphenyl (7,480 - 16,500 pounds per batch).

3. Enclosed herewith are a site plan and sewer map prepared by the Corporation of its facility. The site plan is marked to provide information requested in paragraph 3(b) of your letter; the Corporation does not presently produce any PBB compounds or mixtures, as set forth above. The sewer map presents the information responsive to paragraphs 3(d) and (f). Also enclosed is a map of the entire Bayonne Industries, Inc. property, including the facility leased by the Corporation, and showing the Platty Kill Creek. I am advised that Mr. John Ciancia, Chief, Source Monitoring, of the United States Environmental Protection Agency, Edison, New Jersey, is currently developing a proces flow diagram of the Corporation's facility. The Corporation is computing the material balance which you request.

The Corporation discharged waste water from the processing of PBBs only during the limited time periods wher such chemicals were produced, which averaged two days for each production batch as set forth above. A production batch of hexabromobiphenyl took one week. Average waste water discharge was: per batch of octabromobiphenyl, 2,120 gallons; per batch of hexabromobiphenyl, 400 gallons; per batch of nonabromobiphenyl, 1,820 gallons; and, per batch of decabromobiphenyl, 1,263 gallons. Computations are based upon measurements of input water by water meter and scale, which the Corporation believes to be reasonably accurate. Waste water outfalls leave the plant untreated, and enter the Platty Kill; I am advised that there is no entrance to a municipal sewer.

The Corporation's air emission treatment system is described in the material enclosed herewith, entitled "Air Emission Treatment." Although the material refers to decabromodiphenyl oxide manufacture, the same treatement techniques and calculations pertain to production of biphenyl

4. The Corporation does not maintain an inventor of PBBs. Some small odd-lot amounts of such chemicals, remaining from pre-1973 research and development and from the above-stated production figures are stored in the "barn" area of the Corporation's facility, as set forth on the list enclosed herewith entitled "Remainders in Barn." The Corporation has contacted Earthline Company, Passaic, New Jersey, to explore the possibility of solid waste disposal of such small quantities of PBBs as remain. Earthline has applied for local permits for such disposal at its secured landfill sites at Model City, New York, and Wilsonville, Illinois. Decisions on such permits are anticipated on or about August 15. We would appreciate your views as well on this proposal.

As the Corporation completes compilation of the further information responsive to paragraphs 5 through 7 of your letter, we will, of course, provide it to you.

Very truly yours,

Terri E. Simon

TES:djr

F-11

AIR EMISSION TREATMENT

Several systems must be employed in conjunction with the K-11 system when Deca-Bromo-Diphenyl-Oxide is manufactured. The centrifuge system is used to filter the slurry, the K-12 distillation system is used to purify the recovered solvent, and the K-16 system is used to recover the bromine from the HBr solution. Each of the above systems has its own scrubbing devices which operate independently of each other.

Initially, several pilot size batches were produced in the K-1 system, and larger batches were later produced in the K-3 system. Presently, all production has been centralized in the K-11 system.

The production process used in each system was the same, and the media used to scrub the gases was identical in all three systems. Only the batch sizes were increased.

K-11 Scrubber Operation

The method used to scrub the gases generated during the manufacture of Deca-Bromo-Diphenyl-Oxide involves two media and two separate loops:

1. A solvent for bromine gas absorption
2. Water for HBr gas absorption

A measured quantity of solvent is precharged into the bromine absorber hold tank. A measured quantity of water is precharged into the HBr solution hold tank.

Pumps are turned on to recirculate the solution in each loop.

HBr gas emitted from the reaction is cooled in a heat exchanger and the entrained bromine is removed by the solvent in the bromine absorber. Any bromine gas that might escape through the bromine absorber will be picked up in the HBr absorber. This bromine-solvent solution is re-cycled into the next batch of Deca-Bromo-Diphenyl Oxide.

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* Techniques and computations described herein pertain similarly to biphenyl manufacture.

The HBr gas is then absorbed by the water in the HBr absorber. The heat of absorption is removed by passing the solution through a heat exchanger. This HBr water solution is taken to the K-16 system where the bromine is recovered from the HBr.

Maximum HBr emission from process: 1500 lbs./hr

Maximum HBr concentration allowable in water at ambient conditions: 63% (b weight)

Assuming a solution with a concentration of 50% HBr (by weight) is discharged from the absorbers.

1500 lbs. HBr gas + 1500 lbs. H_2O per hour

Minimum amount of water required:

$$\frac{1500 \text{ lbs. } H_2O/\text{hr.}}{8.33 \text{ lbs.} H_2O/\text{Gal. } H_2O} = \frac{180 \text{ Gal. } H_2O}{\text{Hr.}} = 3 \text{ GPM } H_2O$$

Actual flow of H_2O solution into absorbers (pumps capacity):

50 GPM or 3000 gals./hr.

$$8.33 \text{ lbs./gals.} \quad \frac{3000 \text{ gals. } H_2O}{\text{hr.}} = 24{,}990 \text{ lbs. } H_2O/\text{hr.}$$

At maximum HBr emmission rate (1500 lbs./hr.) HBr concentration in sol increases at a rate of 4.5% (by weight) per hour.

The water charge in HBr - Water solution hold tank is calculated for ea batch on the basis of 50% HBr concentration (by weight) at the end of t batch.

The absorbers and re-circulation hold tanks are vented through a vent absorber which exhausts into an existing (packed) salt water scrubber.

Absorber Parameters

The effectiveness of the absorbers is based on the following parameters:

Centrifuge Operation

The Deca-Bromo-Diphenyl Oxide slurry is charged into a closed centrifuge and the solvent is allowed to "spin out". The cake is then washed with methanol.

Scrubber Operation

Clean water is charged into the scrubber tank and the recirculation pump is started. The pump forces the water through a spray nozzle, and the water spray trickles through the scrubber's packed section. The fumes are sucked out of the centrifuge and pushed into the bottom of the scrubber by a blower.

The following calculations show the effectiveness of this scrubber system.

TCE Vapor: 70 PPM above scrubber outlet

Max. Blower rating: 2064 CFM @ 1¼" Pressure

$$\left[2064 \frac{ft^3}{Min}\right]\left[60 \text{ Min}\right] = \frac{123{,}840 \text{ ft}^3 \text{ of gas discharged}}{hr}$$

When scrubber is off, centrifuge and fan are on, centrifuge open; 70 PPM of this gas volume measured as TCE vapor

$$\text{TCE Vapor} = \frac{70(123{,}840)}{10^6} = \frac{8.669 \text{ ft}^3 \text{ TCE Vapor}}{hr}$$

$$\left[\frac{8.669 \text{ ft}^3 \text{ TCE Vapor}}{359 \text{ ft}^3/\text{mole}}\right]\left[\frac{168 \text{ Lbs}}{\text{Mole}}\right] = \frac{4.057 \text{ lbs TCE}}{hr} \text{ (Max.)}$$

When scrubber is on, centrifuge closed, centrifuge and fan are on:

10 PPM of gas volume measured as TCE Vapor
Outlet pressure measured at 1/8"

$$\frac{(CFM)_1}{(CFM)_2} = \frac{P_1}{P_2}$$

New volume of gas discharged

$$(CFM)_2 = \frac{P_1}{P_2}(CFM)_1 = \frac{.125}{1.50}(2064) = 172 \text{ CFM}$$

Velocity of gas at exit: $\frac{172 \text{ CFM}}{A} = \frac{172}{\pi(15/12)^2} = 35.04$ ft/min.

$$\left[172 \text{ CFM}\right)(60\left] = \frac{10320 \text{ ft}^3 \text{ of gas}}{hr}\right.$$

$$\text{TCE Vapor} = \frac{10[10320]}{10^6} = \frac{.01032 \text{ ft}^3 \text{ TCE Vapor}}{hr}$$

$$\left[\frac{.01032 \text{ ft}^3 \text{ TCE Vapor}}{359 \text{ ft3/mole}}\right]\left[\frac{168 \text{ lbs}}{\text{mole}}\right] = \frac{.004829 \text{ lbs TCE}}{hr}$$

For Methanol

Max. concentration of Meoh in air at Amb. condition

$$\frac{\left[32 \text{ lbs/mole}\right]\left[\frac{100 \text{ mm}}{760 \text{ mm}}\right]}{388 \text{ ft}^3/\text{mole}} = \frac{.0108 \text{ lbs MEOH}}{\text{ft}^3 \text{ of gas}}$$

Max. discharge of Methanol with scrubber off

$$\left[172\ ft^3/min\right]\left[\frac{60\ Min}{hr}\right]\left[\frac{.0108\ lbs\ MEOH}{ft^3\ of\ gas}\right] = \frac{111.45\ lbsMEOH}{hr}$$

Average flow through hose $= \frac{1}{30}(172) = 5.73$ CFM

$$60\ (5.73) = \frac{343.8\ ft3\ of\ gas}{hr}$$

13.5 Grams of Liquid collected in 38 minutes

13.5 gr. (w.20462 x 103) = .02976 lbs.

Rate of liquid collected $= \left[\frac{:02976\ lbs}{38\ min}\right]\left[\frac{60\ min}{1\ hr}\right] = .04699\ \frac{lbs}{hr}$

Liquid content ratio to gas

$$\frac{.04699\ lbs\ of\ liquid/hr}{343.8\ ft^3\ of\ gas/hr} = 1.3668 \times 10^{-4}\ \frac{lbs\ of\ liquid}{ft^3\ of\ gas}$$

Max. amount of liquid going through stack

$$\left[1.3668 \times 10^{-4}\ \frac{lbs\ of\ liquid}{ft^3\ of\ gas}\right]\left[172\ CFM\right]\left[60\ Min\right] = 1.4105.4\ \frac{lbs\ of\ liqu}{hr}$$

35.4% of this liquid was found to be methanol and the remainder was water

$$\left[1.4105\ \frac{lbs\ of\ liquid}{hr}\right]\left[.354\right] = .499\ \frac{lbs.\ Methanol}{hr}$$

K-12 System

The solvent in the filtrate from the centrifuge is recov by vacuum distillation in a closed system. The steam jets exhaust into a packed salt water scrubber.

SALT WATER SCRUBBER CALCULATION

Molecular weight of Tetrachloroethane: 168

Conditions in reactor (Boiler): 93°C at 100 MM.Hg.

Conditions in Condenser: 27°C at 100 MM.Hg.

Rated capacity of vacuum jets: 55 lbs. of Air/Hour

Mole capacity of vacuum jets:

$$\frac{55 \text{ lbs. of Air/hr.}}{29 \text{ lbs. of Air/mole}} = 1.896 \frac{\text{Moles}}{\text{hr.}}$$

Assuming the vapor in the system is 100% Tetrachloroethane vapor.

Maximum quantity of Tetrachloroethane that could be pulled through the vacuum jets:

Vapor pressure of Tetrachloroethane at 27°C : 6.36 MM.Hg.

$$\left[\frac{168 \text{ lbs.}}{\text{Mole}}\right] \left[\frac{6.36 \text{ MM.Hg.}}{100 \text{ MM.Hg.}}\right] \left[\frac{1.896 \text{ Moles}}{\text{hr.}}\right] = 20.26 \frac{\text{lbs.}}{\text{hr.}}$$

Salt water flow rate into wood scrubber: 190 GPM

Max. concentration of Tetrachloroethane in scrubber water:

$$\frac{20.26 \text{ lbs. TCE/hr.}}{190 \text{ GPM} \left[\frac{8.33 \text{ lbs.}}{\text{Gals}}\right] \left[\frac{60 \text{ Min.}}{\text{hr.}}\right]} = .0002133 \frac{\text{lbs. TCE}}{\text{lbs. } H_2O}$$

Salt water scrubber diameter: 5 feet

Cross-sectional area: $\frac{\pi (5)^2}{4} = 19.635 \text{ ft.}^2$

Maximum air flow to wood scrubber

$$\left[\frac{13.473 \text{ ft.}^3}{\text{lb. of Air}}\right] \left[\frac{55 \text{ lbs. of Air}}{\text{hr.}}\right] \left[\frac{1 \text{ hr.}}{60 \text{ Min.}}\right] = 12.35 \frac{\text{ft.}^3}{\text{min.}}$$

Maximum air velocity at face of scrubber

$$12.35 \frac{\text{ft.}^3}{\text{min.}} = 629 \text{ ft./min.}$$

Air emitted from vent measured at less than .5 PPM Tetrachloroethane vapor.

$$[.5 \times 10^{-6}] \left[12.35 \frac{ft.^3}{min.}\right] \left[\frac{60 \text{ Min.}}{1 \text{ hr.}}\right] \left[\frac{168 \text{ lbs/mole}}{359 \text{ ft}^3\text{/mole}}\right] = .000173$$

K-16 System

The K-16 system is used to recover bromine from the HBr water solution, and it is vented into twin absorber columns.

K-16 Scrubber Operation

A 40% HBr water solution is precharged into the absorbe hold tank and the recirculation pump for the absorber loop is started. Any bromine or HBr vapors coming through are collected by the HBr solution recirculating through the columns. This solution is later returned to the reactor for recovery.

Parameters associated with these absorbers:

Vapor pressures of 48% HBr solution:

0.10 MM.Hg. at 20°C
48 MM.Hg. at 90°C

Vapor pressures of Br_2: 200 MM.Hg. at 20°C

Volume of reactor: (530 Gals.) $\left(\frac{.13368\ ft.^3}{Gal.}\right)$ = 70.8 $ft.^3$

Volume of HBr solution charged into reactor:

$$(330\ Gal.)\ \left(\frac{.13368\ ft.^3}{Gal.}\right) = 44.1\ ft.^3$$

This volume of liquid is charged into the reactor in thirty minutes; therefore the rate of displacement is:

$$\frac{(44.1\ ft.^3)}{(30\ min.)}\ \frac{(60\ Min.)}{(hr.)} = 88.1\ ft.^3/hr.$$

Standard mole volume at 20°C:

$$\frac{(359\ ft.^3)}{(mole)}\ \frac{(293°K)}{(273°K)} = 385.3\ \frac{ft.^3}{mole}$$

Assuming the empty reactor contains saturated vapors of Br_2 an

Moles of gas in empty reactor:

$$\frac{70.8\ ft.^3}{385.3\ ft.^3/mole} = .184\ mole$$

Amount of HBr vapor in the gas displaced from reactor to absor while HBr solution is being charged:

$$\frac{(81\ lbs.\ HBr)}{(mole)}\ \frac{(0.1\ MM.)}{(760\ MM.)}\ \frac{(88.1\ ft.^3/hr.)}{(70.8\ ft.^3)}\ (.184\ moles) = .0024$$

Amount of HBr vapor emitted before start of reaction.

Standard mole volume at 90°C

$$\frac{(359\ ft.^3)}{(mole)}\ \frac{(363°K)}{(273°K)} = 477.35\ ft.^3/mole$$

Volume of air in space above liquid in reactor at 20°C

70.8 $ft.^3$ - 44.1 $ft.^3$ = 26.7 $ft.^3$

F-19

Volume of air in space above liquid in reactor at 90°C:

$$V_2 = 26.7 \text{ ft.}^3 \left(\frac{363^\circ K}{293^\circ K}\right) = 33.1 \text{ ft.}^3$$

Volume of gas going to absorber during heat up:

$$33.1 - 26.7 = 6.4 \text{ ft.}^3$$

Moles of gas in that volume:

$$\frac{6.4 \text{ ft.}^3}{477 \text{ ft.}^3/\text{mole}} = .0134 \text{ moles}$$

Amount of HBr vapor in the gas going to the absorber:

$$\left(\frac{81 \text{ lbs. HBr}}{\text{mole}}\right) \left(\frac{48 \text{ MM.}}{760 \text{ MM}}\right) (.0134 \text{ Moles}) = .0685 \text{ lbs. HBr vapor}$$

Heat up period is 20 minutes; therefore, maximum gas rate to scrubber is:

$$\frac{.0685 \text{ lbs.}}{20 \text{ Min.}} \left(\frac{60 \text{ Min.}}{1 \text{ Hr.}}\right) = .206 \frac{\text{lbs. HBr}}{\text{hr.}} \text{ vapor}$$

Amount of bromine vapor in the gas displaced to absorber durir sodium chlorate addition:

Volume of chlorate solution added: 165 Gals.

$$(165 \text{ Gals.}) \left(\frac{.13368 \text{ ft.}^3}{\text{Gal.}}\right) = 22.06 \text{ ft.}^3$$

Moles of gas displaced during chlorate addition:

$$\frac{22.06 \text{ ft.}^3}{477 \text{ ft.}^3/\text{mole}} = .046 \text{ moles}$$

Since the time required for addition is about one hour, this quantity represents the maximum rate of bromine emission.

$$\left(\frac{160 \text{ lbs. } Br_2}{\text{mole}}\right) \left(\frac{200 \text{ MM.}}{760 \text{ MM.}}\right) (.046 \text{ moles}) = 1.94 \frac{\text{lbs. } Br_2}{\text{hr.}}$$

40% HBr solution (by weight) has a specific gravity of: 1.377

Volume of HBr solution recycle tank: 10.28 Gals.

Weight of HBr solution charged into tank:

$$(10.28 \text{ Gals.}) (8.33 \text{ lbs./Gals.}) (1.3772) = 117.932 \text{ lbs.}$$

Maximum amount of HBr gas added to this solution during run:

Weight of HBr solution in recycle tank after the run is finis

117.932 lbs. + .206 = 118.138 lbs.

Specific gravity of this solution:

$$S.G. = \frac{118.138 \text{ lbs.}}{(10.28 \text{ Gals.})\left(8.33 \frac{\text{lbs.}}{\text{Gal.}}\right)} = 1.3796$$

This corresponds to a 40.2% HBr solution (by weight). Therefo the concentration of the solution increased by only .2% during the run. HBr solutions are stable (low vapor pressure) in con centrations up to 48% at ambient temperatures.

Bromine is highly soluble in HBr solutions. The 1.94 lbs. of bromine vapor emitted from the reactor is absorbed in the solu and at the end of the batch, the bromine concentration is 1.6% (by weight).

On an estimated basis, the maximum amount of HBr vapor that co escape through the salt water scrubber is less than .0002 lbs. per hour; and for Br_2 vapor, less than .003 lbs. per hour.

July 21, 1977

REMAINDERS IN "BARN"
(Listed by containers and amounts)

Hexabromobiphenyl

1 40 lb. container
1 176
1 375

Octabromobiphenyl

1 88 lb. container
1 140
1 93
1 92
1 292 lb. container
1 114
1 310
1 315
1 280
1 300
1 301
2 200

Nonabromobiphenyl

1 173 lb. container
1 96
16 200
1 191

Decabromobiphenyl

1 86 lb. container
1 295
7 300
81 110
1 93 lb. container
1 75
1 82

Nona/Deca-Bromobiphenyl

1 32 lb. container

Nona/Deca-Bromobiphenyl & Sodium Sulfate

1 313 lbs.

Nona/Deca Bromobiphenyl & Sodium Sulfate Water Solution

1 174 lb. container
1 229
1 294

Assorted Samples

1 Drum Full Of Bottles 72 lbs.

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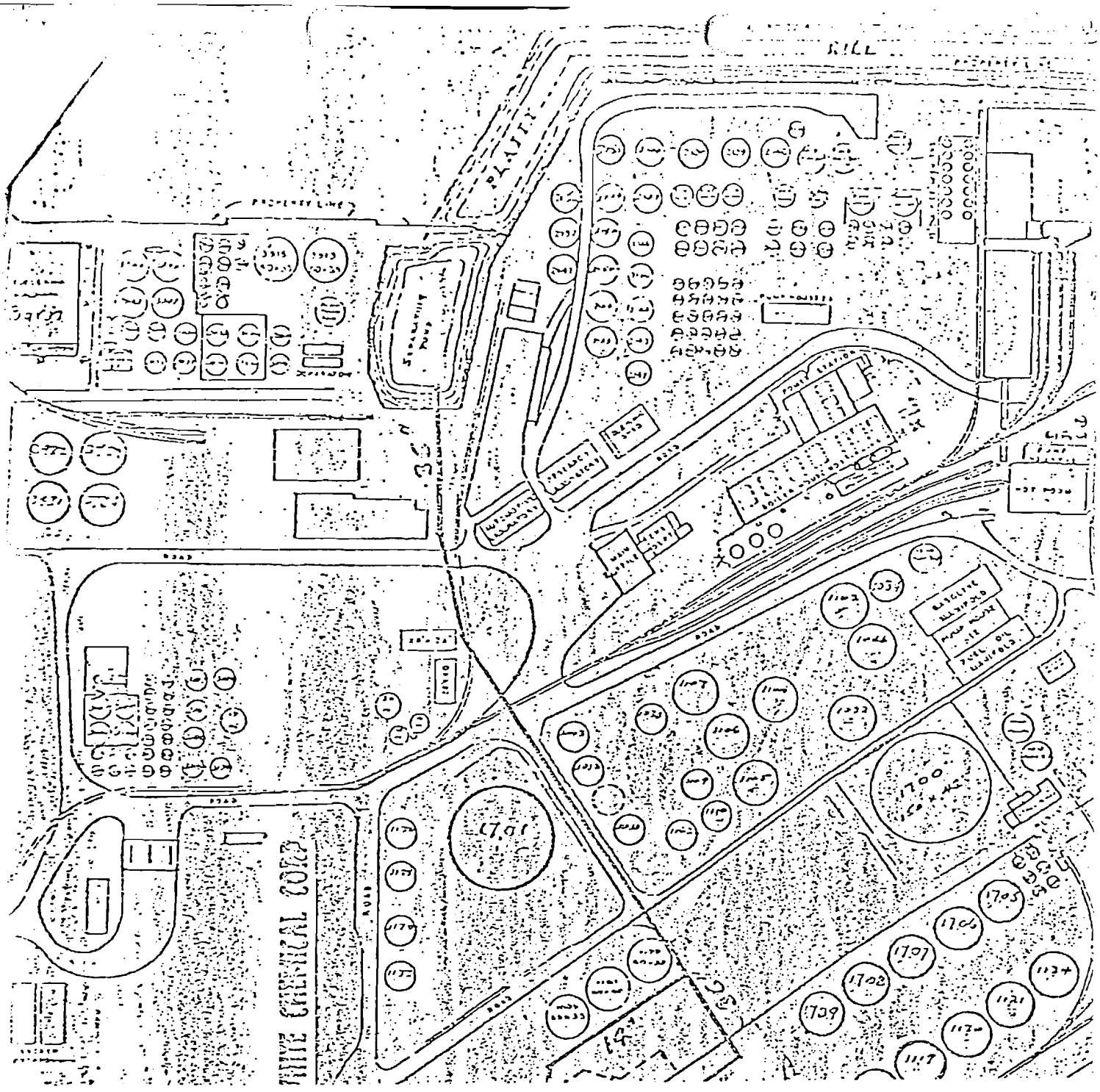
HILL
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STORAGE YARD
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE:

SUBJECT: Preliminary Survey of the Bayonne Plant of White Chemical Corp. and Sayreville Plant of Hexcel Corp. for PBBs

FROM:
John Ciancia
Chief, Source Monitoring Section

TO:
Richard D. Spear
Chief, Surveillance & Monitoring Branch

On Thursday, June 23rd and Friday, June 24th, a visit was made to the Bayonne Plant of White Chemical Corp. and the Sayreville Plant of Hexcel Corp., respectively, by the following Region II people:

John Ciancia, Chief, Source Monitoring
William Librizzi, Toxic Substance Coordinator
Joseph Spatola, Chief, Air Monitoring
Lloyd Kahn, Quality Assurance Officer
Mark Haulenbeek, Physical Scientist

The primary purpose of the visit was to request and obtain all the necessary information regarding the manufacture of bromobiphenyl bromobiphenyl oxide compounds and the potential sources of present and past environmental contamination resulting from the processing of these compounds. This information would be used to plan a sampling survey to assess the present discharges of these compounds to the environment as well as the contamination that exists on the ground and in the receiving waters (including bottom sediment) or the municipal system.

At the White Chemical Plant, the production of octabromobiphenyl and decabromobiphenyl was discontinued as of March 1977. The company indicated that a letter would be sent to EPA stating the plant would not be producing any more bromobiphenyl compounds in the future. The company stated it will continue to produce octabromobiphenyl oxide and decabromobiphenyl oxide. Although not presently of prime concern on a national level, these compounds are also of interest in our study because although of unknown toxicity they also are potentially deleterious and can introduce very small amounts of bromobiphenyl due to any biphenyl present with the biphenyl oxide which is brominated in their production. The processing of the bromobiphenyl oxides is similar to that of the bromobiphenyls except that the starting material is biphenyl oxide instead of biphenyl. The production of a batch of the bromobiphenyl oxide in the reactor and subsequent recovery and purification operations takes a few days, and is only produced intermittently. Therefore, a decision must be made whether to sample the plant only for residual bromobiphenyl or wait until the next batch production of the oxide and sample for residual bromobiphenyls, bromobiphenyl oxides and any residual bromobiphenyls produced with the bromophenyl oxides.

As for sampling, there are two trenches from the bromobiphenyl and bromobiphenyl oxide processing area which subsequently combine with scrubber water from this operation at a manhole location which also receives waste water from an adjacent building (small reactor where some bromobiphenyls or oxides were produced). Since the main discharge pipe leaving this manhole is completely underground and there is no means for flow measurement, my suggestion is that we install weirs in each trench and use the metered scrubber water flow to obtain a flow measurement for these three streams entering the manhole location. We can measure the flow from the adjacent building by a bucket and stop-watch. In addition, waste water flow from a pilot plant building enters the underground line at a further location. This will also be sampled and measured. It is suggested samples be taken from the two trenches and combined flow at the manhole every four hours and the remaining flows every six hours giving a total of 30 samples which will be composited in the laboratory to represent six flows. The settling basin receiving the main waste water discharge along with other facilities in the Bayonne Industries Complex should be grab sampled at the surface (oil layer), below the surface and for sediment giving three more samples.

The stream formed by bulkheads into which the settling basin discharges is about one quarter of a mile long from the settling basin to the Kill Van Kull should also be sampled at two points for water and sediment. Finally, surface soil samples should be taken at about six locations at different distances from the plant.

The total survey will probably require a coordinator (J. Ciancia), a quality control supervisor (L. Kahn), two professionals and four technicians.

At the Hexcel Corp. Plant in Sayreville, decabromobiphenyl was produced up to March 1977 and has been discontinued. The company will be sending a letter to EPA indicating there will be no more production of this compound at the plant in the future. However, the production of decabromobiphenyl oxide will be continued and is the only compound produced at the plant. The decabromobiphenyl oxide is produced over a batch processing cycle of 12-15 hours.

The total waste water from the processing building can be sampled and the flow can be measured by a volume/time method at a sanitary manhole location prior to dropping and mixing with the other flows entering this manhole which include a sanitary line from the warehouse and another from the office building as well as a line from a catch basin between the processing building and the office building. The overall waste in this flow in the combined sanitary line can be measured at a down stream manhole location and the flow can be measured by noting the cross sectioned area of flow and timing the velocity by using dye. It is suggested that grab samples be taken of the flow from the processing building and overall waste water every two hours, which will then be composited in the laboratory. Also, several water and sediment samples should be taken in the ditch and marsh area receiving the overall runoff from the plant property. Sampling should also be

performed in the effluent to the Sayreville municipal system. In addition, surface samples should be taken at a number of locations (6) at different distances from the processing building.

The total survey will probably require a coordinator (J. Ciancia), a quality control supervisor (L. Kahn), two professionals and four technicians.

WHITE CHEMICAL

Meeting held at White Chemical to perform preliminary investigation on PBB contamination. John Ciancia, Lloyd Kahn, Mark Haulenbeek, Joe Spatola, myself, from EPA; State Staff; Bill Richardson, plant manager of White Chemical; and Nicholas Robinson, legal counsel for White.

Company was cooperative and attempted to provide information we requested. They asked for several informational needs we request through official correspondence.

General

1. White doesn't believe that situation warrants the reaction by the press.
2. That they have in the past, and will continue to cooperate with EPA - NPDES permit, as an example.
3. They believe there are difficulties with testing procedures for measuring PBBs, particularly distinctions between decabromobiphenyl and decabromodiphenyl oxide.
4. Any sampling done by EPA will be made with outside contractor for White. We advised no problem.
5. White advises that they stopped manufacturing PBB in March 1977, and do not plan to make PBBs in the future.
6. They will continue to produce decabromodiphenyl oxide, which they believe is not toxic and part of this investigation. We stated that deca and octabromobiphenyl are part of the study, but that possible impurities in raw materials which may produce these compounds can require an investigation of the decabromodiphenyl oxide process. Also, Headquarters is looking at health effects of oxide.
7. Essentially all material is exported. In 1975, however, White shipped PBB (hexabromobiphenyl) to Borg-Warner, Parkersburg, West Virginia. They stopped making hexabromobiphenyl after this one run. All orders from outside U.S. are received by White. They use a broker to arrange for shipping. White therefore should know the names of their customers abroad.
8. Their operation, in general, is reactive to market demands, i.e. "Short Order Cooks of Industry".
9. Plant employs about 100 people; all operations are batch.

Process Information

(a) White started producing PBB in 1973. Production data, customer list, rates of production, and number of batch operations, etc. should be requested via official correspondence.

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(b) Plant consists of three buildings: storage, reactor, and drying/grinding building. Drying/grinding operation is no longer used in the process. This operation takes place at Fluidized Processing, Freeman Street, Newark, NJ. This company, under contract, receives wet-cake, drys and grinds same, and packages in drums. They usually return to White for shipment, but have, when required, shipped directly to docks for overseas delivery. We need to ask for records on deliveries to Newark.

(c) Storage - Raw materials are stored as follows: biphenyl in bags; diphenyl oxide in drums; solvents in tanks; catalyst in cans (40° F); and bromine in tanks. Other chemicals are stored in drums, as evidenced by the stacks of drums throughout the property. Final product is packed and stored in drums for shipment.

(d) Sewer Locations - There are two sewers (14" and 24") that feed into a 36" line that runs to the upper reaches of Platty Kill Creek. This area has been separated from the Creek and serves as an oil-water separator and sedimentary basin for several sewer lines from other facilities. This area was observed as highly contaminated with thick oil layers. The 24" line collects all discharges including runoff from the reactor area, while the 14" line services the pilot building.

(e) Process - See attached for flow chart of PBB operation. The process is essentially a closed kettle with mechanical agitation and various condensers, scrubbers, and tanks to treat and reclaim raw materials from contaminated source streams. Sequence of operation: (1) Solvent is added to kettle at measured amount (tetrachloroethyene); (2) Biphenyl (solid) or diphenyl oxide (liquid) is next added; (3) Catalyst (aluminum chloride) is then added as a slurry (catalyst + solvent); (4) Bromine liquid is then added and the mixture heated to around 130° F.

Non-contact heat exchangers are used for temperature control. The process reaction gives off HBr which flows through condensers, etc. Liquid phase of reactor, after the reaction is complete (about 2 days), is passed through bag filters (AlOH is added). The filtrate is then directed to sewer. Bags with filtered material are disposed offsite. Solid material - PBB - is dewatered in a centrifuge. The wet-cake is shoveled into drums and sent to the Newark facility for drying and grinding and final packaging. Methanol is added to improve cake solubility. Centrifuge bins are used in the process to collect cake. These and centrifuge are not cleaned since they are used only for PBB and similar products. Kettles are cleaned with steam or water. The contaminated flow is passed through the bag filters before going to sewer.

(f) Disposal - White indicated that they have negligible wastes requiring disposal off property; they say five or less 50-lb. drums per year. Kim Buc was used until December 1976. A new contractor now collects the waste, but they were unable to identify where it is disposed of.

(g) White has no oil storage facilities on their leased property.

Conclusions

(1) There are several potential sources of PBB contamination during process and as residual.

(2) White will not manufacture decabromobiphenyl. They will continue to produce decabromodiphenyl oxide.

(3) Sampling of soil, sediment, debris on platforms and Platty Kill Creek, to see if any PBBs can continue to leave area to flow to Kill Van Kull (important since new treatment planned for area may not include this area) should be considered.

(4) Sampling of decabromodiphenyl oxide or flow from plant at any time should be made to determine continued PBB releases despite ceasation of decabromobiphenyl production. In regard to the oxide, someone should check out contamination of diphenyl oxide, which produces decabromobiphenyl during bromination.

(5) 308/114 letter must be sent out next week.

(6) Additional inspections are needed to finalize sampling sites, flow measurement, etc.

(7) Air sampling, particularly during hot summer days, should be considered.

(8) Other organics should be integrated into any sampling as part of the NPDES effort.

WL:dt
6/27/77

OCT 19 1979

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II Room 432
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10007

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1-Full - orig
1-Full
5 Full

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William Richardson
Plant Manager
White Chemical Corporation
P.O. Box 278
Bayonne, New Jersey 07002

Dear Mr. Richardson:

Enclosed is the report entitled "Survey and Sampling for PBB's, White Chemical Corporation, Bayonne, N.J., August 17-18, 1977" which was requested during Mr. Steve Shopsis' telephone conversation with Mr. Johnathon Josephs of this office. The charge for duplication of this report is $9.80 at 20¢ per page.

Please make your check payable to "U.S. Environmental Protection Agency" and mail it to my attention.

Sincerely yours,

Richard A. Baker

Richard A. Baker
Chief
Permits Administration Branch
Planning and Management Division

Enclosure

ATTACHMENT F-30

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NJ0001538

Survey and Sampling for PBB's

White Chemical Corporation
Bayonne, New Jersey

August 17-18, 1977

Participating Personnel:

Environmental Protection Agency
John Ciancia, Chief
Source Monitoring Section
Mark Haulenbeek, Physical Scientist
Andre Zownir, Sanitary Engineer

Report Prepared By:

John Ciancia, Chief
Source Monitoring Section
January 13, 1978

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Manufacturing Operations	2
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Water Supply and Waste Sources	5
Sampling Program	7
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Appendices

A. Photographs

B. Quality Assurance/Analytical Methodology

A survey and sampling program was carried out at the White Chemical Corporation manufacturing facilities in Bayonne, New Jersey to determine the extent polybrominated biphenyls (PBB's) are present in the wastewaters discharged by the plant to an oil-water separator and settling basin of Bayonne Industries. This separating basin discharges into Patty Kill Creek which flows into the Kill Van Kull about one quarter of a mile from the plant.

The wastewater sampling survey was carried out for a 24-hour period starting at twelve noon on August 17, 1977. Sampling was conducted on the overall effluent from the manufacturing operations including the individual process sources contributing to this total wastewater effluent, as well as the discharge of a separate wastewater flow from a pilot plant building.

During the sampling period, the plant was producing a number of organics but not polybrominated biphenyls or polybrominated biphenyl oxides. Therefore, the sampling results only indicate the extent PBB's are present in the wastewater due to the presence of any residual in the plant or sewer system.

The results of the 24-hour sampling survey indicated that a concentration of 41.4 micrograms per liter (µg/l) of polybrominated biphenyls was present in the overal plant effluent of 0.741 MGD discharged to the settling basin of Bayonne Industries. Therefore, the total PBB load present in this combined manufacturing wastewater discharge was 0.256 lbs/day. The pilot plant wastewater which discharges

separately into the settling basin had a PBB concentration of 0.9 µg/l in a flow of 0.077 MGD, giving a waste load of .0006 lbs/day.

The concentration and load of polybrominated biphenyl oxides in the overall wastewater were found to be 71.6 µg/l and 0.44 lbs/day, respectively.

A water sample from the settling basin of Bayonne Industries showed a polybrominated biphenyl level of 3.3 µg/l. A surface oil sample from this basin, as well as a sample of previously skimmed oil in a storage tank, showed no detectable PBB's. A sediment sample from the basin also showed no detectable level of PBB's as did a water sample from Patty Kill Creek.

The water sample from the basin showed 16 µg/l of polybrominated biphenyl oxides. Both the surface oil sample from the settling basin and the other from the storage tank showed no detectable level of PBB oxides. The sediment sample from the basin showed a concentration of 26,500 µg/l of PBB oxides, and the water sample from Patty Kill Creek showed no detectable level.

SUMMARY AND CONCLUSIONS

A survey and sampling program was carried out at the White Chemical Corporation manufacturing facilities in Bayonne, New Jersey to determine the extent polybrominated biphenyls (PBB's) are present in the wastewaters discharged by the plant to an oil-water separator and settling basin of Bayonne Industries. This collection basin discharges into Platty Kill Creek which flows into the Kill Van Kull about one quarter of a mile from the plant. Figure 1 shows the wastewater discharges and receiving waters, as well as the sampling results.

The wastewater sampling survey was carried out for a 24-hour period starting at twelve noon on August 17, 1977. Sampling was conducted on the overall effluent from the manufacturing operations including the individual process sources contributing to this total wastewater effluent, as well as the discharge of a separate wastewater flow from a pilot plant building. In addition, preliminary sampling was conducted in the collection basin and creek.

During the sampling period, the plant was producing a number of organics but not polybrominated biphenyls or polybrominated biphenyl oxides. Therefore, the sampling results only indicate the extent PBB's are present in the wastewater due to the presence of any residual in the plant or sewer system. The survey was carried out under these production conditions and not delayed because the company indicated there were no plans to produce polybrominated biphenyls in the future and also did not expect to produce polybrominated biphenyl oxides for at least a month (possible source of small amount of PBB's due to bromination of biphenyl impurity in diphenyl ether raw material).

The results of the 24-hour sampling survey indicated that a concentration of 41.4 micrograms per liter (ug/l) of polybrominated biphenyls was present in the overall plant effluent of 0.741 MGD discharged to the settling basin of Bayonne Industries. Therefore, the total PBB load present in this combined manufacturing wastewater discharge was 0.256 lbs/day. The pilot plant wastewater which discharges separately into the settling basin had a PBB concentration of 0.9 ug/l in a flow of 0.077 MGD, giving a waste load of 0.0006 lbs/day.

A water sample from the settling basin of Bayonne Industries showed a polybrominated biphenyl level of 3.3 ug/l. A surface oil sample from this basin, as well as a sample of previously skimmed oil in a storage tank, showed no detectable PBB's. A sediment sample from the basin also showed no detectable level of PBB's as did a water sample from Platty Kill Creek.

The detection level for PBB's in the analyses carried out for this survey is 0.1 ug/l for the water samples, and 2 ug/l and 2 ug/kg for the oil and sediment samples, respectively.

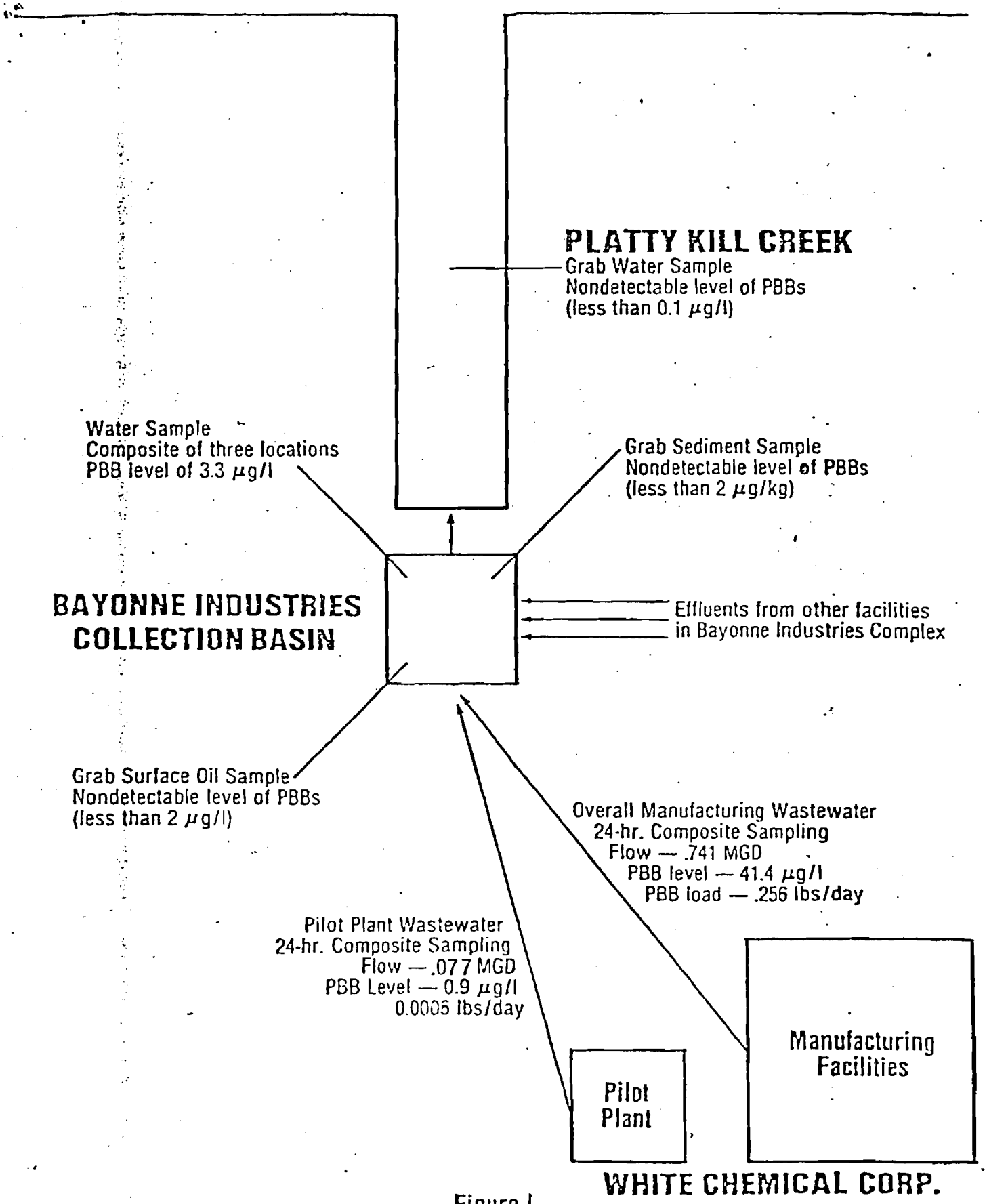
PLATTY KILL CREEK
Grab Water Sample
Nondetectable level of PBBs
(less than 0.1 μg/l)
Water Sample
Composite of three locations
PBB level of 3.3 μg/l
Grab Sediment Sample
Nondetectable level of PBBs
(less than 2 μg/kg)
BAYONNE INDUSTRIES
COLLECTION BASIN
Effluents from other facilities
in Bayonne Industries Complex
Grab Surface Oil Sample
Nondetectable level of PBBs
(less than 2 μg/l)
Overall Manufacturing Wastewater
24-hr. Composite Sampling
Flow — .741 MGD
PBB level — 41.4 μg/l
PBB load — .256 lbs/day
Pilot Plant Wastewater
24-hr. Composite Sampling
Flow — .077 MGD
PBB Level — 0.9 μg/l
0.0005 lbs/day
Manufacturing
Facilities
Pilot
Plant
WHITE CHEMICAL CORP.

Figure I.

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RECOMMENDATIONS

1. In view of the established toxic nature of polybrominated biphenyls and the presence of these chemicals in the plant wastewater and the collection basin discharging into Platty Kill Creek, it is recommended that the company provide treatment to eliminate the discharge of PBB's in the wastewater leaving the plant. A promising technique for removing PBB's is activated carbon column treatment which has been found to be effective in treating PCB contaminated wastewater.

2. Additional sampling should also be conducted by the company in Platty Kill Creek and the Kill Van Kull near the mouth of the creek to determine the extent and magnitude of any PBB contamination of the soil. The data and a report on the study should be forwarded to EPA in order that a decision can be made regarding the need to remove contaminated soil which may be causing a PBB pollution problem.

Introduction

White Chemical Corporation has both the manufacturing facilities and corporate headquarters on East 22nd Street in Bayonne, New Jersey. Constructed in 1961, the plant operates five and one half days per week, year round. Thirty-eight employees and eight supervisors, working three eight-hour shifts per day, are associated with production which is carried out by batch type processing operations.

The plant is essentially an organic chemical manufacturing operation that produces about thirty different compounds. The bulk of the products are chlorinated or brominated organics.

The company terminated the production of polybrominated biphenyls on the following dates:

hexabromobiphenyl - August 25, 1975
octabromobiphenyl - January 19, 1977
nonabromobiphenyl - January 11, 1977
decabromobiphenyl - March 8, 1977

Between 1973 and the final production dates, the company's records indicate the following amounts of polybrominated biphenyls were produced.

hexabromobiphenyl - 38,987 lbs.
octabromobiphenyl - 142,929 lbs.
nonabromobiphenyl - 12,200 lbs.
decabromobiphenyl - 195,088 lbs.

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The company has made a decision not to manufacture polybrominated biphenyls again in the future.

This is no guarantee. U permit limits to restart we

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Manufacturing Operations

The production of polybromobiphenyls or polybromobiphenyl oxides is carried out in lined jacketed kettles with agitators. The temperature in the reactor is maintained by using either steam or cooling water.

The manufacture of these products begins by adding liquid tetrachloroethane (solvent) to the reactor. Then, diphenyl oxide (liquid) or biphenyl (solid) are added when producing polybromobiphenyl oxide or polybromobiphenyl, respectively, after which the bromine and solvent are blown into the reactor from a receiver. Next, a portion of a slurry of aluminum chloride in the solvent is added initially and the remainder fed as required during the reaction period. This is followed by the introduction of a continuous feed of liquid bromine to the reactor over the entire period of production of polybromobiphenyl oxide or polybromobiphenyl.

The gases leaving through a line in the top of the reactor pass through shell and tube condensors and then enter the bottom of a packed tower in which the tetrachloroethane flows down countercurrent to the upflow gas stream. For each production batch of PBB's or PBB oxides, a certain quantity of solvent is recirculated from a hold tank through the packed tower to remove bromine from the hydrogen bromide gas stream passing up through the packed tower.

The hydrogen bromide gas leaving the top of the packed tower is sent through two more packed towers in series in which fresh water from a common holding tank is recirculated downflow through both towers and returned. At the completion of the production cycle,

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the recirculated water normally builds up to about a 45% solution of HBr. This solution is pumped to another storage tank for bromine recovery.

Any gas leaving the fresh water scrubber system is then sent to a final packed tower in which it flows upward countercurrent to a stream of salt water. The flow of salt water leaving the bottom of the tower is discharged into the industrial wastewater sewer.

At the completion of the reaction stage, water is added to the agitated reactor and heat is applied to the jacket to drive off remaining bromine gas. This gas, which also contains some water vapor and solvent, passes through the shell and tube condensors. The liquid effluent from the condensors enters a receiver tank which also receives the solvent used to absorb bromine in the first packed tower. The solution in the receiver tank separates into an organic phase containing about 10% bromine and an aqueous phase. The solvent phase is recharged to the reactor for use in the next production run. The water phase flows into drums which are then taken to a bromine recovery system.

After the application of heat to drive off bromine gas from the reactor, hydrogen peroxide and caustic are added to the agitated contents (primarily solvent, PBB or PBB oxide with residual bromine and a trace of HBr). The hydrogen peroxide and caustic converts any residual bromine to NaBr and NaOBr. The solution is then transferred to an agitated hold tank and from there to a centrifuge. The solid PBB or PBB oxide is separated from the solution and the wet material enters bins from which it is shoveled into drums for drying and grinding by Fluidized Processing Inc., Newark, New Jersey. The

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centrate is discharged from the centrifuge into a holding tank and then into an agitated neutralizing vessel where sodium bicarbonate is added to bring the pH to between 7-8. After the proper pH is attained, the agitation is stopped and the organic and aqueous phases are allowed to separate. The aqueous phase is passed through filter bags and then to the industrial sewer. The organic phase is distilled for recovery of the tetrachloroethane. The bottoms are drummed for contract disposal.

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The 45% HBr solution obtained during the production cycle is processed for recovery of bromine at the completion of the run. A specific volume of 45% HBr solution is added to a reactor and then a sodium chlorate solution is introduced at a controlled rate liberating bromine. This bromine gas, as well as water vapor, escapes from a line at the top of the vessel and passes through a series of condensors. The condensate enters a separator where the water and liquid bromine separate. The water is returned to the kettle and the liquid bromine is sent to a receiver for reuse. The gas leaving the condensors is passed upflow through the 45% HBr solutions flowing down the packing in the scrubber in order to remove any residual bromine gas. At the end of the recovery operation, the remaining aqueous solution in the kettle is neutralized and then is discharged to the industrial sewer. The bromine and HBr solution from the scrubber is added to the next recovery cycle.

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PBB and PBB Oxide Handling

The PBB or PBB oxide wet cake drops from the centrifuge into a plastic bin. It is then shoveled into fiber drums with plastic liners. This is accomplished in an area with a concrete floor. When full, the bags are sealed and a cover is placed on the drums. At the completion of every lot, the drums are forklifted onto a truck and taken to Fluidized Processing Inc. in Newark, New Jersey where the product is ground, dried and packaged for shipment. The bulk of the PBB's or PBB oxides is shipped directly, but some is returned to a warehouse located in the Bayonne Industries area for subsequent shipment.

Water Supply and Waste Sources

The plant uses water taken from the Kill Van Kull, as well as the Bayonne municipal system. These waters are not treated prior to use in the plant. The salt water from the Kill Van Kull is used in manufacturing for cooling followed by scrubbing in packed towers, as well as in the barometric legs of steam jet ejectors. The fresh water is used for various processing purposes such as a processing aid in neutralization reactions and as an absorption medium. It is also used for indirect cooling and domestic purposes.

The sources of wastewater from the PBB or PBB oxide manufacturing operations discharged to the industrial sewer are as follows:

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1. Salt water used for scrubbing in the final packed tower.

2. The aqueous phase of the centrate discharged from the centrifuge which is used to remove the solid PBB or PBB oxide product from the reactor medium. The centrate is neutralized, the aqueous and organic phases are allowed to separate, and the water phase is passed through filter bags prior to discharge. - what happens to them?

3. Aqueous solution remaining in the kettle at the completion of the processing cycle used to recover bromine from the 45% HBr solution obtained in the manufacture of the PBB or PBB oxide. - cleaning kettle?

As part of the manufacture of polybrominated biphenyls, a still-bottom residue containing PBB's is produced during the tetrachloroethane recovery operation. From 1973 to 1977, these still-bottom residues were disposed of under contract as follows:

Hauler: Chemline Corp.
10 Cherry Street
Elizabeth, New Jersey 07202

Receiver: Scientific Chemical Processing
216 Paterson Plain Road
Carlstadt, New Jersey 07072

Residue from decabromobiphenyl: 38 drums (26,600 lbs)
Residue from octabromobiphenyl: 20 drums (14,000 lbs)

Hauler: Gaess Environmental Services Co.
253 River Drive
Passaic, New Jersey

Receiver: Chemtrol
Model City, New York

Residue from decabromobiphenyl: 67 drums (46,900 lbs)
Residue from nonabromobiphenyl: 3 drums (2,100 lbs)
Residue from octabromobiphenyl: 15 drums (10,500 lbs)
Residue from hexabromobiphenyl: 1 drum (400 lbs)

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Sampling Program

On August 17 at 12:00 noon, a twenty-four hour sampling survey was initiated to determine the extent polybrominated biphenyls are present in the industrial wastewater effluents discharged by the plant to an oil-water separator and settling basin of Bayonne Industries. This separating basin, which also receives wastewater from other facilities associated with Bayonne Industries, discharges into Platty Kill Creek which flows into the Kill Van Kull about one quarter of a mile from the separator.

In addition, a surface oil sample was obtained from the settling basin, as well as a previously skimmed oil sample from a storage tank. A composite water (three locations) and bottom sediment sample, were also collected from the settling basin.

Since the plant was not producing polybrominated biphenyl oxides during the survey, the sampling results only indicate the extent PBB's are present in the wastewater due to the presence of any residual in the plant or sewers. Another sampling program would be desirable should polybrominated biphenyl oxide production resume to determine the extent any PBB might be present in the wastewater due to the bromination of biphenyl impurity in the biphenyl ether raw material used to produce PBB oxides.

During the 24-hour sampling period, the overall production was significantly below normal and no operations were being carried out

in the pilot plant. However, most water flow was maintained close to normal operation in order to provide a high level of flushing action which is desirable in determining PBB residuals at the plant. The following chemicals were being manufactured during the period of the survey:

Capryloyl chloride -	Building A
Azipoyl chloride -	Building A
Myristyl bromide -	Building A
Propionoyl chloride -	Outside Area E

Figure 2 is a schematic of the individual industrial sewer lines which collect wastewater from the manufacturing and pilot plant operations. The process wastewater discharged from the outside manufacturing area designated "E" enters either of two trenches which run along both sides of this location. Trench #2 wastewater, salt water from the final scrubber, and the wastewater discharges from the adjacent side of Internal Processing Building "A" combine in a sump and then drop to a lower section where they combine with the discharge from Trench #1.

These wastewaters then enter a main collection pit where the remaining discharges from the other side of Building "A" also enter. From here, the combined manufacturing wastewater flows underground through a 24" sewer to the separator basin of Bayonne Industries. In addition, the wastewater effluent from the pilot plant building, designated "B", discharges into a separate 14" sewer which also flows into the separator basin. — This is it a treatment?

Over the twenty-four hour sampling period, samples were taken every half hour of seven industrial wastewater discharges as follows:

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1. Effluent from Trench #1

2. Effluent from Trench #2

3. Salt water effluent from final scrubber

4. Combined discharge of effluents from Manufacturing Building facing Outside Processing Area

5. Combined discharge of effluents from other side of Manufacturing Building.

6. Overall Manufacturing Wastewater Flow consisting of Numbers 1 through 5.

7. Effluent wastewater from Pilot Plant Building

Each individual sample of wastewater was retained in its glass bottle with aluminum lined cap and the 48 grab samples of each of the effluents was composited in the EPA laboratory in Edison, New Jersey into seven representative samples of the wastewater discharges. The time composites are considered representative of each wastewater effluent since the flows were relatively constant.

In addition, samples were also taken every half hour of both the fresh water and salt water intakes to the plant in order to obtain a net PBB discharge load from the plant.

The intake water samples of fresh and salt waters were each taken at half hour intervals from taps to fill large glass bottles with marking providing a composite sample for both the fresh and salt waters.

Flow measurements for all the individual wastewater discharges were obtained by determining the time required to fill a container of known volume, except for Trench #2 where a V-notch weir was used. The combined flow of all the manufacturing wastewater effluents (excluding pilot plant) was obtained by summing the individual discharges.

Table I

Polybrominated Biphenyls
Discharged In Wastewater From Plant

Source	Wastewater Volume (gal/day)	Conc. PPB (ug/l)	Load PPB (lbs/day)
Total Manufacturing Wastewater	741,000	41.4	0.256
Pilot Plant Wastewater	77,000	0.9	0.0006

PBB Levels In
Settling Basin And Creek

Source	PBB's (ug/l)
Water in settling basin	3.3
Oil from top of settling basin	ND
Oil from storage tank (previously removed from settling basin)	ND
Water from Platty Kill Creek	ND

Source	PBB's (ug/kg)
Sediment from settling basin	ND

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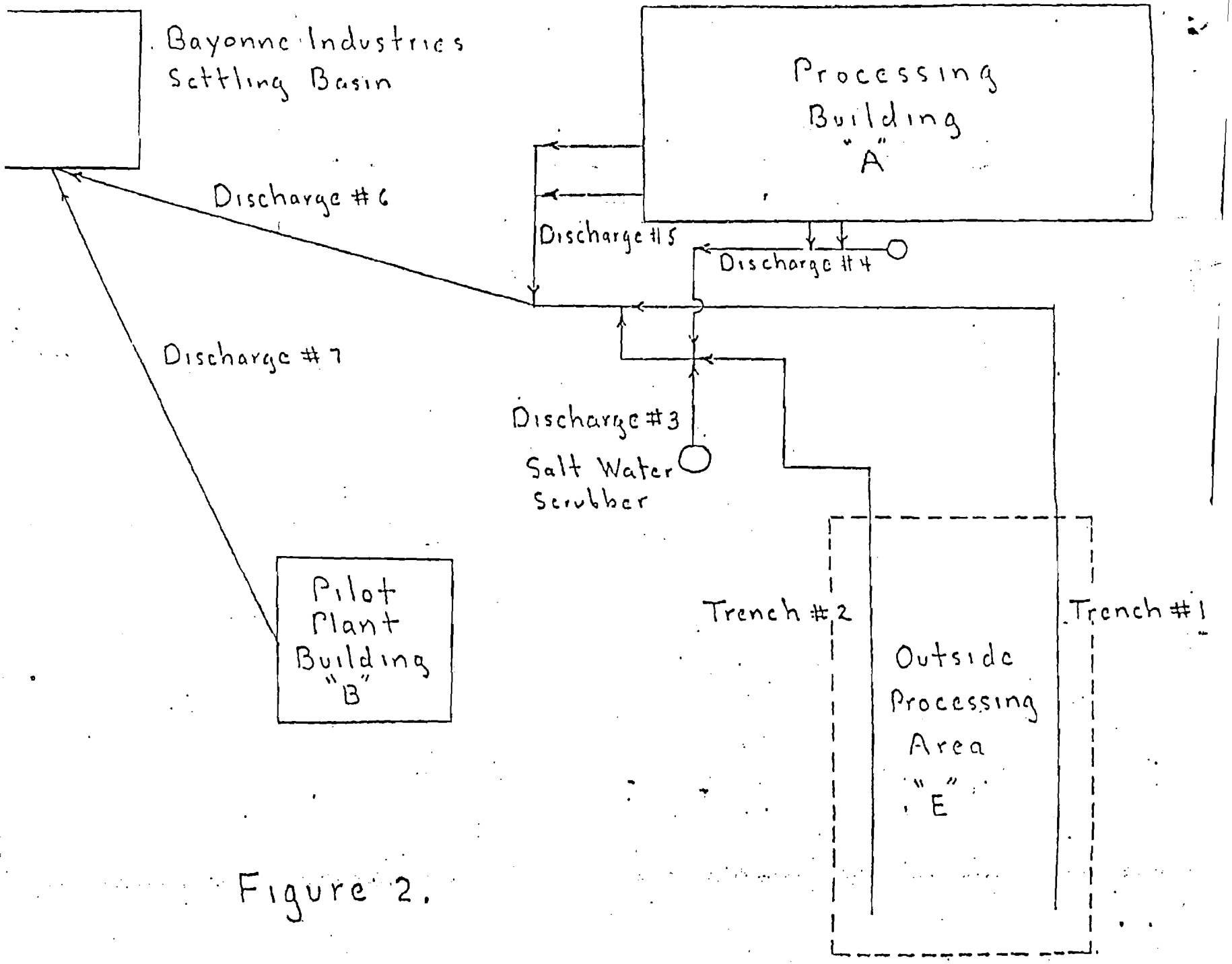

Bayonne Industries
Settling Basin
Processing
Building
"A"
Discharge #6
Discharge #5
Discharge #4
Discharge #7
Discharge #3
Salt Water
Scrubber
Pilot
Plant
Building
"B"
Trench #2
Trench #1
Outside
Processing
Area
"E"

Figure 2.

Chemical PBB/PBBO Survey
August 17-18, 1977

LIQUID

		Bromobiphenyl Oxides µg/l							
OP2	Total Br₁P2	Br4P2O	Br5P2O	Br6P2O	Br7P2O	Br8P2O	Br9P2O	Br10P2O	Total Br₁P2O
D	0.5	21	ND	0.1	ND	ND	ND	ND	21
.0	5.6	7.0	0.4	ND	0.8	5.0	ND	30	43.2
)	ND	0.3	ND	ND	ND	ND	ND	3.7	4.0
)	ND	ND	ND	ND	ND	ND	ND	ND	ND
a c t L o s t									
9	1.9	0.7	0.7	0.1	0.1	ND	ND	2.0	3.6
9	41.4	32	12	2.4	2.2	ND	ND	23	71.6
)	ND	ND	ND	ND	ND	ND	ND	2.2	
)	ND	ND	ND	ND	ND	ND	ND	3.4	3.4
5	3.3	1.1	ND	ND	ND	ND	ND	16	17.1
	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEDIMENT (TAR)					µg/kg				
	ND	ND	ND	ND	1500	ND	ND	25000	26500
OIL SAMPLES									
	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND	ND

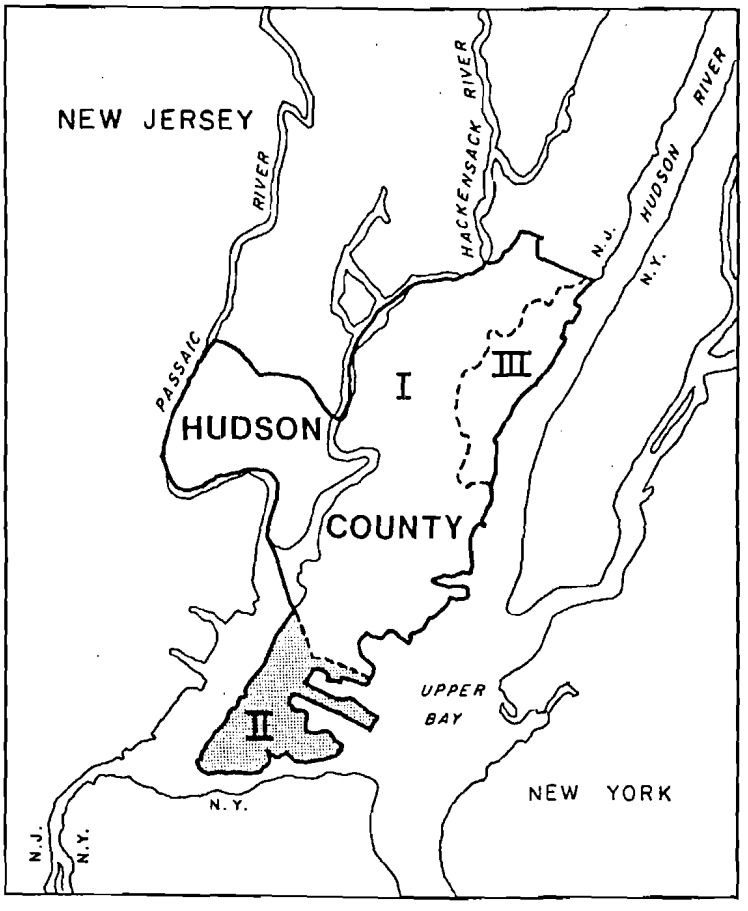
HUDSON COUNTY UTILITIES AUTHORITY

Hudson County, New Jersey

201 WASTEWATER FACILITIES PLAN
Planning Area II

- *Bayonne*

Volume One
REGIONAL INVENTORY

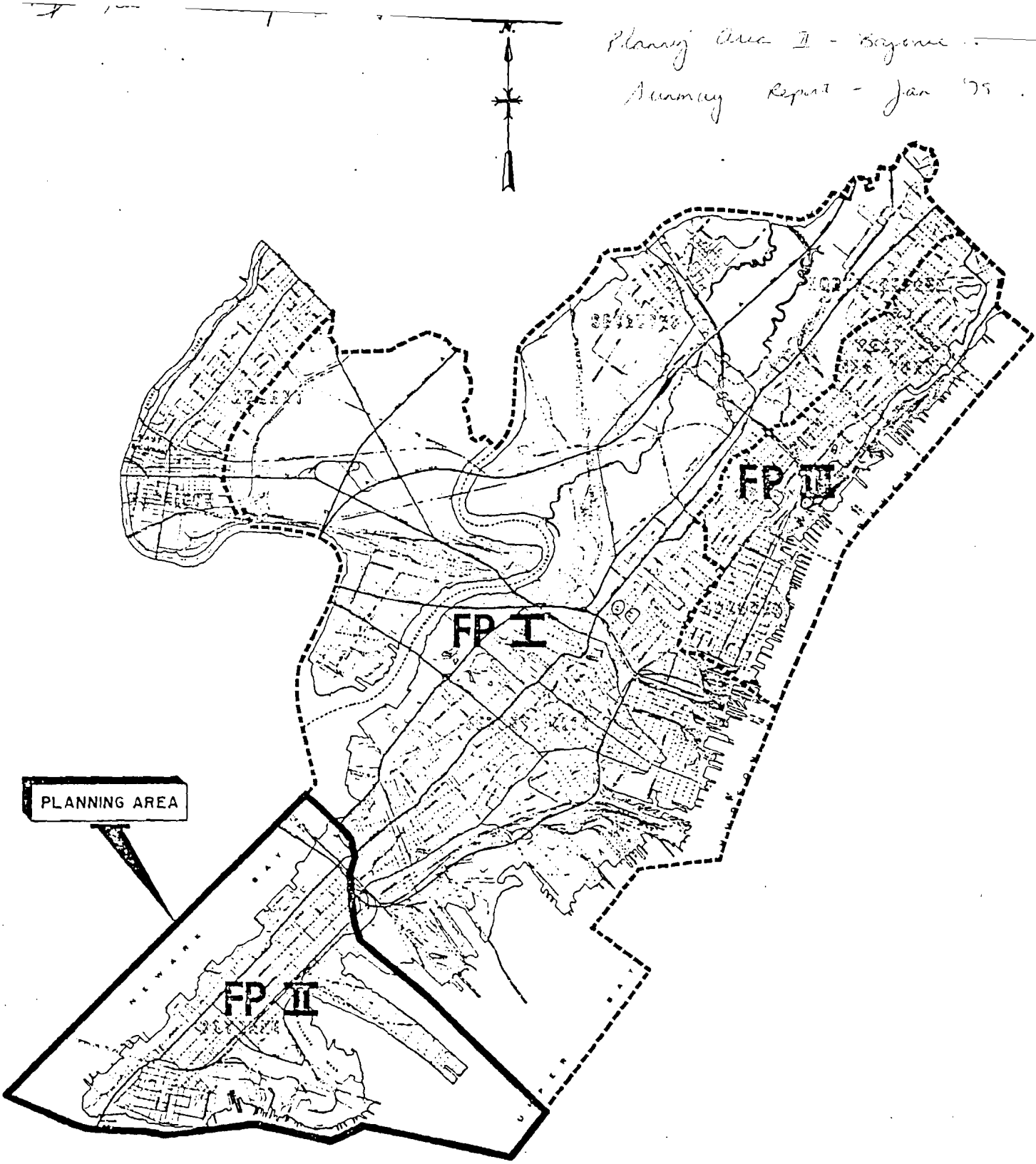


January 1979

MALCOLM PIRNIE, INC.
CONSULTING ENVIRONMENTAL ENGINEERS

DDH000002

Planning Area II - Bayonne
Planning Report - Jan '79



HUDSON COUNTY SEWERAGE AUTHORITY
JERSEY CITY, NEW JERSEY
WASTEWATER FACILITIES PLAN
PLANNING AREA II - BAYONNE
COUNTY SETTING

4000 2000 0 2000 4000
SCALE IN FEET

MALCOLM PIRNIE, INC.

4. WASTE LOADS AND WATER QUALITY

Water quality data for the receiving waters surrounding the City of Bayonne are summarized in Section 2.7 entitled "Water Quality". In general, the existing water quality in the planning area can be characterized by low dissolved oxygen levels and high fecal bacteria contamination.

The planning area water quality is affected by waste loads from various point and non-point sources. Point source pollutants are discharged at specific locations along a waterway from a sewer or outfall pipe and may be either continuous or intermittent. Non-point source pollutants are those which enter the receiving water as runoff from overland flow and as runoff and leachate from landfills.

The scope of this chapter includes an inventory of existing point source discharges in the planning area to determine their effects upon the water quality of the receiving waters. Both continuous and intermittent point source discharges are reviewed. In addition, all available information concerning the problem of non-point source pollution in the planning area is summarized.

4.1 Point Source Waste Loads

Point source discharges in the planning area include outfalls from municipal, institutional, and industrial wastewater treatment plants, outfalls from industrial discharges, and overflows from combined wastewater and storm sewer collection systems. Overflows from combined sewer systems are differentiated from other point source discharges and

frequently are referred to as intermittent point sources since they generally discharge to the receiving water only during storm events.

4.1.1 Point Discharges

Point sources in the planning area contribute waste loads from two domestic wastewater treatment facilities and from 18 industrial dischargers. The two domestic wastewater treatment facilities are the Bayonne Wastewater Treatment Plant and the U.S. Military Ocean Terminal Plant. These facilities are described and evaluated in greater detail in Chapter 5 of this report.

An identification of industrial dischargers in the planning area was made based on an inventory of the USEPA point source file to determine those industries which are authorized to discharge pollutants into the adjacent receiving waters under the National Pollutant Discharge Elimination System (NPDES). There may be additional industries in the planning area which discharge pollutants to the adjacent receiving waters and which have not applied for NPDES permits to discharge their wastes.

The location of each point source discharger in the planning area is shown on Plate 3. Pertinent information concerning each discharger is summarized in Tables 4-1a through 4-1d. These tables describe each discharger in terms of name, receiving waters, New Jersey NPDES permit number, Standard Industrial Classification (SIC), industrial activity, source of wastewater, existing treatment methods, and stream loadings.

Based on available information,[17] the total wastewater flows and waste loads which are discharged to the receiving waters from the various point sources in the planning area can be summarized as follows:

TABLE 4-1c

INVENTORY OF POINT SOURCE DISCHARGES IN BAYONNE
PLATTY KILL CREEK DRAINAGE BASIN(2)

MAP (3) NO	NAME	NJ (1) NPDES NO	SIC	INDUSTRIAL OPERATIONS	SOURCE OF WASTEWATER	TYPE OF TREATMENT	WASTEWATER CHARACTERISTICS	STREAM LOADINGS FLOW MGD	BOD5 LB DAY	TSS LB DAY(4)
11	TANK STORAGE CORP (5) (MCDONALD INDUSTRIES	0003387	2094	OPERATES TANK STORAGE TERMINAL FOR HANDLING ANIMAL AND VEGETABLE FATS AND OILS	STORM WATER RUNOFF	OIL WATER SEPARATION AND NEUTRALIZATION (SANITARY WASTES TO SEPTIC TANK)	OIL AND GREASE	0 07	N A	28
12	NONA PLANT INC (5)	0030449	2844	MANUFACTURES BISMUTH OXYCHLORIDE AN INORGANIC CHEMICAL USED IN COSMETIC PRODUCTS	PROCESS WASTES BACKWASH FROM DEIONIZATION UNIT AND WATER USED IN GAS SCRUBBER	NEUTRALIZATION AND SETTLING (SANITARY WASTES TREATED AT BAYONNE STP)	HIGH SUSPENDED SOLIDS BISMUTH	0 01	N A	N A
13	METROPOLITAN (5) RENDERING ASSOC INC	NONE	2094	PROCESSES WASTE FATS AND BONES INTO INEDIBLE TALLOW MEAT AND BONE MEAL	CONTACT COOLING WATER AND CLEAN UP WATER	SETTLING (SANITARY WASTES TREATED AT BAYONNE STP)	HIGH BOD5 AND SUSPENDED SOLIDS OIL AND GREASE	0 09	N A	N A
14	SOUTHERN CALIFORNIA CHEMICAL CORP (5)	0030481	2819	MANUFACTURES INORGANIC CHEMICALS: PRINCIPAL PRODUCTS ARE AN ALKALINE ETCHANT USED IN THE MANUFACTURE OF ELECTRONIC CIRCUIT BOARDS FERRIC CHLORIDE AND COPPER OXIDE	PROCESS WASTES	SETTLING (SANITARY WASTES TO SEPTIC TANK)	HIGH SUSPENDED SOLIDS COPPER AND IRON	0 01	N A	N A
15	BAYONNE INDUSTRIES INC	0001341	5093	OPERATES OIL STORAGE TERMINAL	STORM WATER RUNOFF	OIL WATER SEPARATION SETTLING	OIL AND GREASE	0 68 (6)	22	142
16	WHITE CHEMICAL CORP (5) also facility in Newark of interest.	0001538	2818	MANUFACTURES HALOGENATED ORGANIC CHEMICALS PRINCIPAL PRODUCTS ARE A BROMINATED ORGANIC COMPOUND USED AS A FLAME RETARDANT AND ACID CHLORIDES MADE BY CHLORINATING FATTY ACIDS	NON CONTACT COOLING WATER AND PROCESS WASTES	SETTLING (SANITARY WASTES TO SEPTIC TANK.	HIGH TEMPERATURE ZINC CHROMIUM TOTAL ORGANIC CARBON CHLORINATED HYDROCARBONS TOTAL SUSPENDED SOLIDS AND BROMIDE	0 42	N A	N A
17	KENNICH PETROCHEMICALS (5)	0003018	2821	MANUFACTURES RUBBER CHEMICALS THERMOPLASTIC RESIN AND PLASTICIZERS	COOLING WATER AND PROCESS WASTES	SETTLING (SANITARY WASTES TO SEPTIC TANK)	N A	0 03	N A	N A

NOTES
- (1) REFERENCE NPDES PERMIT FILES OF THE U S EPA
- (2) INCLUDES ALL DISCHARGERS WHICH DISCHARGE TO KILL VAN KULL VIA PLATTY KILL CREEK
- (3) NUMBERS REFER TO LOCATION OF DISCHARGER ON PLATE 4
- (4) TSS DENOTES TOTAL SUSPENDED SOLIDS
- (5) THESE INDUSTRIES DISCHARGE THEIR WASTES TO AN OIL SKIMMING POND WHICH IS OPERATED BY BAYONNE INDUSTRIES INC
- (6) INCLUDES ALL WASTES DISCHARGED FROM OIL SKIMMING POND
- (7) "N A" DENOTES NOT AVAILABLE

Receiving Water	Flow (mgd)	BOD_5 (lb/day)	TSS (lb/day)
Newark Bay	4.06	225	851
Kill Van Kull			
Directly to the Kill	12.89	9,685	8,796
Via Platty Kill Creek	0.68	22	142
Upper New York Bay	59.19(1)	2,661	178
Totals	76.82	12,593	9,967

Note: 1. Includes Bethlehem Steel's 56.0 million gallon discharge, which occurs rather infrequently.

With the exception of the discharges from the Bayonne Wastewater Treatment Plant and from the U.S. Military Ocean Terminal Plant, the majority of the discharges result either from stormwater runoff or from cooling water. The large discharge from Bethlehem Steel includes water which is withdrawn from Upper New York Bay and used to wash down a graving dock after repairs and maintenance are made on ocean going ships.

In addition to discharging wastes which include oxygen demanding materials and suspended solids, most of the point sources discharge wastes which include oil and grease and various heavy metals. Much of the stormwater runoff includes oil and grease from the paved areas and storage areas surrounding the many petroleum related industries in the Constable Hook area. Industrial cooling water and process wastewater contribute most of the heavy metals that are discharged to the receiving waters. In all cases, sanitary wastes either are discharged to a private septic system or are collected and treated at the Bayonne Wastewater Treatment Plant.

The majority of the wastes which are discharged to the receiving waters receive at least partial treatment. Most industries provide

facilities for oil/water separation prior to discharging their wastes. Bayonne Industries, Inc. owns and operates an oil skimming pond located at the upstream end of Platty Kill Creek. Six industries, in addition to Bayonne Industries, discharge their wastes to this pond. Each of these industries is responsible for the discharge of its wastes and has applied for an NPDES permit, with the exception of Metropolitan Rendering Association, Inc. which is not listed in the USEPA files.

Eight of the dischargers in the planning area have been identified as "major" or "significant" dischargers according to the USEPA file information. The term "major" or "significant" discharger is defined by Federal regulations as a discharger for which timely remedial action is necessary within the planning period in order to meet water quality objectives. The intent is to emphasize those dischargers which most significantly affect water quality. These dischargers include:

1. Bayonne Industries, Inc.
2. El Dorado Terminals, Corp.
3. Exxon Company, U.S.A.
4. General Cable Corp.
5. Kenrich Petrochemicals, Inc.
6. National Oil Recovery Corp.
7. NL Industries, Inc.
8. City of Bayonne Municipal Plant

In addition, two dischargers, National Oil Recovery Corp. and the U.S. Military Ocean Terminal are classified as thermal dischargers. However, it is estimated that these dischargers contribute insignificant amounts of heat to the receiving waters in comparison to the large power plants which are located upstream from the planning area.

The effects on the receiving waters of the point source discharges in the planning area vary depending on the type of wastes which are

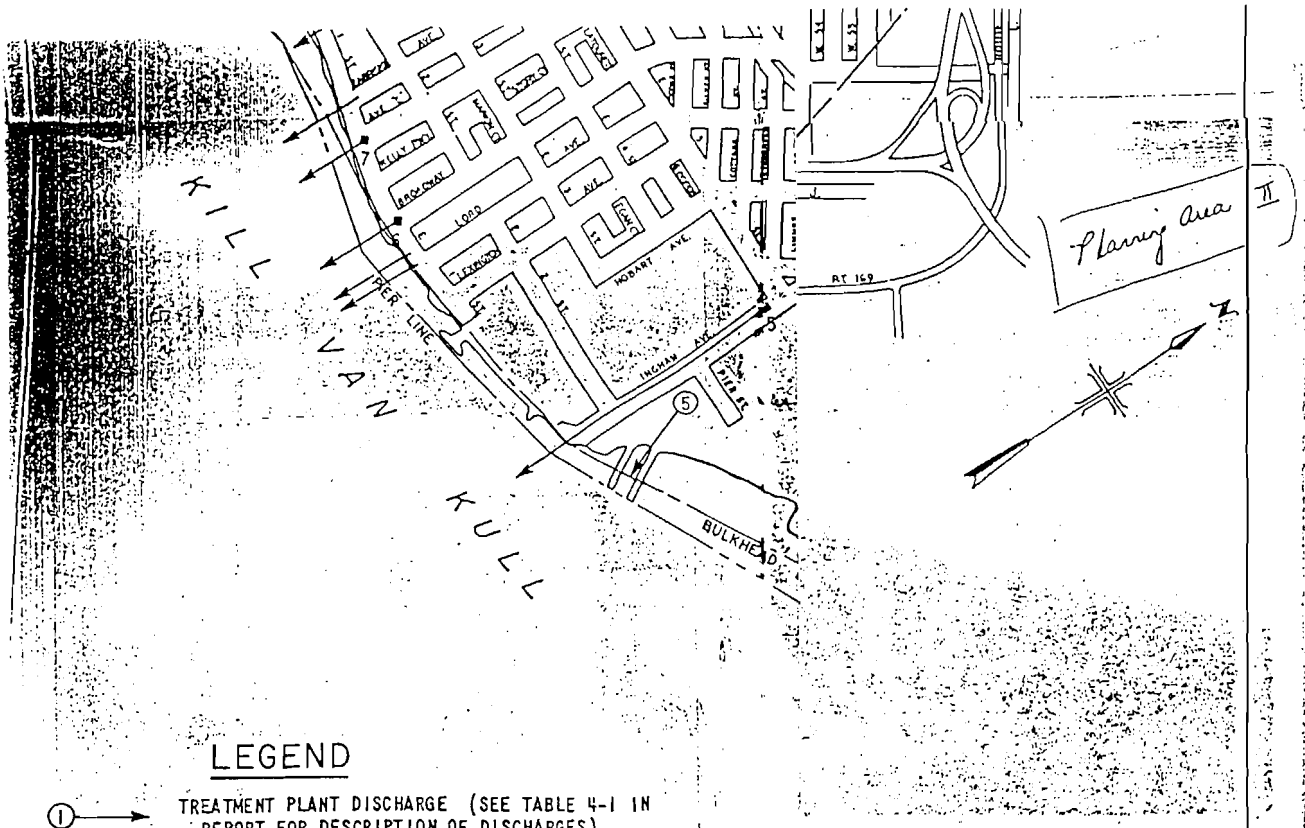
discharged. Soluble organics cause depletion of the dissolved oxygen levels in the waterways. The discharge of solids to the waterways results in the buildup of sludge blankets or banks which are harmful to the normal aquatic life. Sludge blankets containing organic solids will undergo decomposition resulting in depletion of dissolved oxygen levels and production of noxious gases. Heavy metals and toxic organics are also harmful to aquatic life. The discharge of oil and grease to the waterways presents aesthetic problems and degrades the potential recreational value of the receiving water.

4.1.2 Combined Sewer Overflows

The subject of waste loads and water quality associated with the combined sewer overflows is held in abeyance at this time until the completion of the Combined Sewer Overflow (CSO) Study. This study will attempt to define waste loads and water quality in terms of optimum cost/benefits ratio with regard to reduction of pollutant discharge, rather than specific effluent limitations. The results of the CSO Study are scheduled for presentation in Volume V of the Wastewater Facilities Plan.

4.2 Non-Point Source Waste Loads

The water quality in the planning area is not only affected by waste loads from various point sources but also is affected by waste loads from non-point sources. A non-point source has been defined in a paper entitled "Non-Point Water Pollution: Federal and State Perspectives" prepared by John R. Churchill of the USEPA as follows:



LEGEND

- ① → TREATMENT PLANT DISCHARGE (SEE TABLE 4-1 IN REPORT FOR DESCRIPTION OF DISCHARGES)
- I → OVERFLOW REGULATOR DISCHARGE W/REGULATOR NUMBER
- → STORM RELIEF SEWER DISCHARGE (UNREGULATED OUTFALL)
- ——— COMBINED SEWER DISCHARGE (UNREGULATED OUTFALL)

DSON COUNTY SEWERAGE AUTHORITY
JERSEY CITY, NEW JERSEY

ASTEWATER FACILITIES PLAN
LANNING AREA II - BAYONNE

DINT SOURCE DISCHARGES

INDEX TO TREATMENT PLANT DISCHARGE

1. CPC INTERNATIONAL, INC.
2. NL INDUSTRIES, INC.
3. TEXACO, INC.
4. GENERAL CABLE CORP.
5. STANDARD TANK CLEANING CORP.
6. CITY OF BAYONNE
7. EXXON CO. U.S.A. 002
8. EL DORADO TERMINALS CORP.
9. NATIONAL OIL RECOVERY CORP.
10. AMERADA HESS
11. TANK STORAGE CORP.
12. RONA PEARL, I
13. METROPOLITAN
14. SO. CALIFORNI
15. BAYONNE INDUS
16. WHITE CHEMICA
17. KENRICH PETRC
18. EXXON CO. U.S
19. ICI UNITED ST
20. BETHLEHEM STE
21. U.S. MILITARY

500 0 500 1000 1500
SCALE IN FEET

Copied at the Interstate Sanitation Comm.

MALCOLM PIRNIE, INC.

White Chemical Company

Hook Road & East 22nd Street Bayonne City Hudson County

CATEGORY: Non-Superfund
State Lead

TYPE OF FACILITY: Manufacturing-Chemicals
OPERATION STATUS: Ceased

PROPERTY SIZE: 1.5 Acres

SURROUNDING LAND USE: Industrial

MEDIA AFFECTED	CONTAMINANTS	STATUS
Soil	Volatile Organic Compounds Brominated Compounds	Delineated

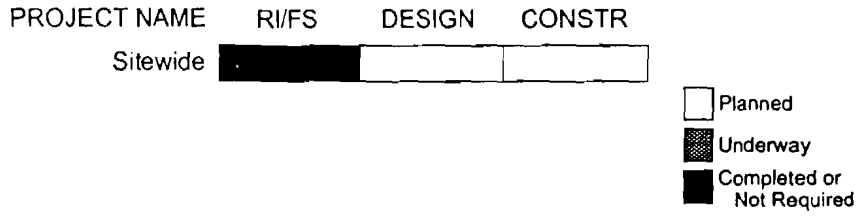
FUNDING SOURCE(S): Responsible Party

ACO SIGNED: 08/05/83
FINANCIAL ASSURANCE: None

SITE DESCRIPTION/RESOLUTION OF ENVIRONMENTAL CONCERNS:

White Chemical Company is located within the property limits of Bayonne Industries. The company formerly used this site for the manufacture of acid chlorides, alkylbromides, brominated flame retardants and various specialty compounds. It was discovered through Spill Response inspections in 1979 by state and federal agencies that areas of the site were contaminated due to poor handling and storage practices over a period of many years. The New Jersey Department of Environmental Protection and Energy (NJDEPE) issued a Notice of Violation in 1979 for accumulating waste for longer than a six month period, for deteriorating/leaking drums and for unmitigated spills. The United States Environmental Protection Agency (USEPA) also imposed regulatory actions on the company for violation of the Clean Water Act. The company moved all of its drums, tanks and pipes to a site in Newark in 1983. Further sampling and analysis were undertaken pursuant to a 1983 Administrative Consent Order (ACO). The Remedial Investigation (RI) has been completed by White Chemical. The 1989 RI Report recommended a "No-Action Alternative". The NJDEPE rejected this recommendation and required brominated compound removal at a minimum. The company has since declared bankruptcy and filed a case under Chapter 11 of the Federal Bankruptcy Code. The case was transferred to the Negotiation/Litigation group within the Bureau of State Case Management. A formal referral has been forwarded to the Deputy Attorney General's Office requesting they intervene in the bankruptcy court so that funds can be retrieved during the proceedings to conduct the removal work that is necessary.

FOR FURTHER INFORMATION CONTACT: Site Remediation Program
Bureau of State Case Management
609-633-0719



DDH000003

PUBLIC RECORD INFORMATION
FOR THE SOLE USE OF:

ACCOUNT NUMBER: 4329

ATTENTION: Jennifer Haley
THE INTELIGENCE GROUP
PO BOX 967

FAR HILLS NJ 07931-

YOUR INFORMATION REQUEST

SEARCH NUMBER: 02-248-00290 REFERENCE: DIOXIN 2

NAME SEARCHED: WHITE CHEMICAL COMPANY

TYPE OF NAME: COMPANY NAME PARTY: DEBTOR/DEFENDANT

NAME VARIATION: NORMAL VARIATION

FILES SEARCHED: NEW JERSEY COURT CASES

SEARCH RECORDS: ALL

* TYPES OF CASES: FEDERAL TAX LIENS*
JUDGMENTS & LIENS
SUITS
BANKRUPTCIES*
FORECLOSURES (NJ ONLY)
STATE-WIDE GENL LIENS (NJ ONLY)

* NEW JERSEY GEOGRAPHIC AREA : ALL AVAILABLE AREAS

* THESE CRITERIA APPLY TO COURT CASES ONLY, NOT CORPORATION FILES

DISCLAIMER

The following information is derived from our DATABASE which consists of abstracts of public records. Each item is subject to being updated since the date shown therein. This report is further subject to our disclaimer of accuracy, adequacy and completeness, and to restrictions as to its use as specified in a written agreement with this Account. Upon request, updates and verifications will be made at scheduled prices.

FINDING

See attached sheets for 18 filings selected from 36 filings found in our DATABASE which meet your Information Request

(DETAIL# 1)

REFERENCE: B4198735 STATE: NJ UNITED STATES DISTRICT COURT
SUIT: SU-00002185-1993 ACTION: ENVIRONMNT VENUE: ESSEX
DATE ENTERED: 05/20/93
PLAINTIFF :
PPG INDUSTRIES INC.
RHONE-POULENC INC.
ATTY FOR PLTF: PITNEY, HARDIN, KIPP AND SZUCH-
DEFENDANT:
AZS CORPORATION
JOHN MARK SCAGNELLI
ONE GATE WAY CENTER
NEWARK, NJ 07102
WHITE CHEMICAL
(No Address)
JAMES W. WHITE
100 MANHATTAN AV, UNION CITY, NJ 07087

*** End of Abstract **

==========

(DETAIL# 2)

REFERENCE: B1225564 STATE: NJ SPECIAL CIVIL PART
SUIT: SC-00017927-1989DC ACTION: CONTRACT VENUE: ESSEX
DATE ENTERED: 07/12/89 CASE: S0701792789
AMOUNT: $ 2,715.50
PLAINTIFF :
NELSON VITORINO
ATTY FOR PLTF: PRO SE-
DEFENDANT:
JAMES WHITE
D/B/A
WHITE CHEMICAL CORP
660 FRELINGHUYSEN AV, NEWARK, NJ 07114

*** End of Abstract **

==========

(DETAIL# 3)

REFERENCE: B1774911 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SW-00028550-1989 ACTION: CONTRACT VENUE: HUDSON
DATE ENTERED: 10/20/89 CASE: W-028550-89
AMOUNT: $ 9,877.00
PLAINTIFF :
ADVANCED INDUSTRIAL ELECTRIC CO INC
ATTY FOR PLTF: HEYD & CROTTY-
DEFENDANT:
WHITE CHEMICAL CORP
660 FRELINGHUYSEN AV, NEWARK, NJ

*** End of Abstract **

==========

(DETAIL# 4)

REFERENCE: B1012146 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SL-00039338-1989 VENUE: BERGEN
DATE ENTERED: 08/23/89 ACTION: CONTRACT CASE: L-039338-89
AMOUNT: $ 1,632,940.50
PLAINTIFF :
D & D CHEMICALS, INC.
ATTY FOR PLTF: RICHARD B HONIG-
DEFENDANT:
WHITE CHEMICAL CORP.
(No Address)

*** End of Abstract **

==========

(DETAIL# 5)

REFERENCE: B1790854 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SW-00057836-1988 ACTION: CONTRACT VENUE: ESSEX
DATE ENTERED: 11/09/88 CASE: W-057836-88
AMOUNT: $ 36,288.00
PLAINTIFF :
CHAS. SCHAEFER & SONS INC.
ATTY FOR PLTF: ALAN F. SUCH-
DEFENDANT:
WHITE CHEMICAL CORP.
660 FRELINGHUYSEN AV, NEWARK, NJ

*** End of Abstract **

==========

(DETAIL# 6)

REFERENCE: B3046539 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SL-00000134-1991 VENUE: UNION
DATE ENTERED: 01/03/91 ACTION: CONTRACT
AMOUNT: $ 7,131.00
PLAINTIFF :
IMC/PITMNAN-MOORE, INC.
ATTY FOR PLTF: HERBERT HEITNER-
DEFENDANT:
WHITE CHEMICAL CORP.
(No Address)

*** End of Abstract **

==========

(DETAIL# 7)

REFERENCE: B3798137 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SL-00012148-1992 VENUE: ESSEX
DATE ENTERED: 07/28/92 ACTION: CONTRACT
Dismissed 07/16/93
AMOUNT: $ 31,757.00
PLAINTIFF :
INDUSTRIAL & COMMERCIAL REFUSE REMOVAL SERVICE, INC.
ATTY FOR PLTF: ROBINSON, ST. JOHN AND WAYNE-
DEFENDANT:
WHITE CHEMICAL CORP.
Dismissed 07/16/93
660 FRELINGHUYSEN AV, NEWARK, NJ

*** End of Abstract **

REFERENCE: B4762632 STATE: NJ UNITED STATES DISTRICT COURT
SUIT: SU-00004107-1994 ACTION: ENVIRONMNT VENUE: ESSEX
DATE ENTERED: 08/25/94
PLAINTIFF :
CPS CHEMICAL COMPANY, INC.
ATTY FOR PLTF: MARK EDWARD ROGART-
DEFENDANT:
A-MARK FINANCIAL CO.
(No Address)
AMERICAN CYANAMID CO.
(No Address)
CABOT CORPORATION
(No Address)
CARPENTER TECHNOLOGY
(No Address)
CHEMICAL CONVERSION
(No Address)
CHEMICAL RECOVERY
(No Address)
COMMUNICATIONS CORPORATION
(No Address)
DREW RESOURCE CORPORATION
(No Address)
EPL INDUSTRIES INC.
(No Address)
EVOR PHILLIPS LEASING CO., INC.
(No Address)
GOM INC.
(No Address)
INTERNATIONAL FLAVOR
(No Address)
JENNAT CORPORATION
(No Address)
JOHNSON-MATTHEY INC.
(No Address)
KEM MANUFACTURING
(No Address)
KING OF PRUSSIA TECH
(No Address)
LORAL AEROSPACE CORPORATION
(No Address)
MID-STATE TRADING COMPANY
(No Address)
NORTH AMERICAN METAL
(No Address)
OAKLEY SERVICES CO.
(No Address)
RUETGERS-NEASE CHEMICAL
(No Address)
SCA SERVICES INC.
(No Address)
SGC INDUSTRIES INC.
(No Address)
SOGEM CORPORATION
(No Address)
SOGEM PRECIOUS METAL
(No Address)
SPECTRASERV INC.

(No Address)
SPIRAL METAL COMPANY
(No Address)
TEK CARRIERS INC.
(No Address)
U.S. DEPARTMENT OF DEFENSE
(No Address)
UNION CARBIDE CORP.
(No Address)
WHITE CHEMICAL CO.
(No Address)

*** End of Abstract **

==========

(DETAIL# 9)

REFERENCE: A248512 STATE: NJ SUPERIOR COURT
JUDGMENT: J-00083439-1991 ACTION: CONTRACT VENUE: HUDSON
DATE ENTERED: 07/31/91 SIGNED: 06/11/91 CASE: W-009862-89
AMOUNT: $ 230,000.00
CREDITOR(S):
BAYONNE INDUSTRIES , INC.
ATTY FOR CR.: ROBINSON, ST. JOHN & WAYNE
DEBTOR(S):
WHITE CHEMICAL CORPORATION
(No Address)

DEBT AMOUNT INCLUDES RENT PAYMENTS FROM 01-84 UNTIL 05-91.
DEBT AMOUNT TO BE OFFSET BY SECURITY DEPOSIT OF $122,479.62 HELD BY BAYONNE INDUSTRIES, FOR A TOTAL AMOUNT DUE BAYONNE INDUSTRIES OF $107,520.48.

*** End of Abstract **

==========

(DETAIL# 10)

REFERENCE: A410321 STATE: NJ CASE: 4,506,501.00
BANKRUPTCY: BK-00008278-1989 CHAPTER: 11 VOLUNTARY
PETITION FILED: 10/13/89 ORDER FOR RELIEF: 10/13/89 ASSETS: $ 2,656,901.00 LIAB

DEBTOR(S): WHITE CHEMICAL CORPORATION UNDEFINED , EIN#:22-1687353
JAMES WHITE ON10-13-89
660 FRELINGHUYSEN AV, NEWARK, NJ
ATTORNEY: GREENBAUM, ROWE, SMITH, RAVIN, DAVIS & BERGSTEIN-

ORDER DISMISSING PETITION: 08/20/92
FINAL DECREE: 08/20/92
WHITE CHEMICAL CORPORATION ADDED TO OUR INDEX.

*** End of Abstract **

==========

(DETAIL# 11)

REFERENCE: A816264 STATE: NJ SUPERIOR COURT
JUDGMENT: DJ-00065051-1989 TYPE: LIEN
DATE DOCKETED: 08/07/89
AMOUNT: $ 949,882.06
CREDITOR(S):
STATE OF NEW JERSEY
DEBTOR(S):
A&B DUMP TRUCK SERVICE, INC.
(No Address)
Satisfied
F/K/A
A&B DRUM COMPANY, INC.
(No Address)
ADELPHI PRODUCTS
(No Address)
AMERICA INKS AND COATINGS CORP.
(No Address)
AMERICAN LACQUER SOLVENTS COMPANY
(No Address)
Satisfied 09/25/97
ATLANTIC INDUSTRIAL TANK MAINTENANCE, INC.
(No Address)
AT&T TECHNOLOGIES, INC.
(No Address)
WESTERN ELECTRIC CO., INC.
(No Address)
B.P. OIL COMPANY
(No Address)
Satisfied 09/25/97
B.P. AMERICA, INC. ,SUBSIDIARY OF
(No Address)
J.T. BAKER CHEMICAL COMPANY, INC.
(No Address)
Satisfied 09/25/97
CHEMICAL CONTROL CORPORATION
(No Address)
CHEMICAL LEAMAN TANK LINES, INC.
(No Address)
Satisfied 09/25/97
CHRYSLER CORPORATION
(No Address)
Satisfied 09/25/97
CLIFTON ADHESIVE, INC.
(No Address)
Satisfied 09/25/97
COLE BUSINESS FURNITURE CO.
(No Address)
Satisfied 09/25/97
COLE STEEL COMPANY
(No Address)
Satisfied 09/25/97
CROWN CORK AND SEAL COMPANY
(No Address)
Satisfied 09/25/97
DAUBERT INDUSTRIES, INC.
(No Address)
Satisfied 09/25/97
EASTCOAST POLLUTION CONTROL, INC.

(No Address)
FIVE COUNTY CARTING, INC.
(No Address)
FORD NEW HOLLAND, INC.
(No Address)
Satisfied 09/25/97
GENERAL COOPERAGE
(No Address)
GENERAL ELECTRIC COMPANY
(No Address)
Satisfied 09/25/97
GILBERT-SPRUANCE CO., INC.
(No Address)

CREDITOR(S):
(SAME AS ABOVE)
DEBTOR(S):
HAUL ROADS, INC.
(No Address)
H.J. HOLMAN COMPANY
(No Address)
HULBERT OIL CO.
(No Address)
JOYCE INTERNATIONAL, INC.
(No Address)
Satisfied 09/25/97
KEWANEE INDUSTRIES, INC.
(No Address)
Satisfied 09/25/97
LOUDERBACK TRANSPORTATION COMPANY
(No Address)
Satisfied 09/25/97
M.A. BRUDER AND SONS, INC.
(No Address)
Satisfied 09/25/97
MCCORQUODALE PROCESS, INC. ,MCCORQUODALE COLOR CARD CO. DIV.
(No Address)
Satisfied 09/25/97
N.L. INDUSTRIES, INC.
(No Address)
Satisfied 09/25/97
NORTON COMPANY
(No Address)
Vacated
NOVAGUARD CORPORATION ,COMPANY
(No Address)
PAKWELL PAPER COMPANY
(No Address)
PENN PETROLEUM COMPANY
(No Address)
Satisfied 09/25/97
PRINCETON CHEMICAL RESEARCH, INC.
(No Address)
PUR-ALL PAINT PRODUCTS
(No Address)
RCA CORPORATION
(No Address)
Satisfied 09/25/97
RAGEN TRANSPORTATION COMPANY, INC.

(No Address)
RHODIA COMPANY
(No Address)
Satisfied 09/25/97
SHERWIN-WILLIAMS CO., INC.
(No Address)
S.J. TRANSPORTATION COMPANY
(No Address)
SPERRY CORPORATION
(No Address)
Satisfied 09/25/97
76 CARTING COMPANY, INC.
(No Address)
SUKONIK BARREL AND DRUM COMPANY, INC.
(No Address)
STATE STEEL DRUM AND BARRELL
(No Address)
SUN CHEMICAL, INC.
(No Address)

CREDITOR(S):
(SAME AS ABOVE)
DEBTOR(S):
THOROFARE TRASH COMPANY
(No Address)
UNITED STATES PRINTING INK CO., INC.
(No Address)
UNITED STEEL BARRELL
(No Address)
WESTERN ELECTRIC COMPANY, INC.
(No Address)
WESTINGHOUSE ELECTRIC CORPORATION
(No Address)
Satisfied 09/25/97
WHITE CHEMICAL CORPORATION
(No Address)
WITCO CHEMICAL CORP.
(No Address)
Satisfied 09/25/97
GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC. , AMEND
(No Address)

STORAGE OF HAZARDOUS SUBSTANCES AT: GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC. LANDFILL, ERIAL AND HICKSTOWN ROADS, GLOUCESTER TOWNSHIP, CAMDEN COUNTY, NEW JERSEY (PLATE 31, BLOCK 357, LOT 9).
09-29-89 AMENDED NOTICE OF LIEN DELETING AS JUDGMENT DEBTORS:
EASTCOAST POLLUTION CONTROL, INC.
SUN CHEMICAL, INC., GENERAL PRINTING INK DIVISION
03-08-90 AMENDED NOTICE OF LIEN DELETING AS JUDGMENT DEBTORS:
UNITED STATES PRINTING INK CO., INC.
RECORDED 03-12-90.
12-16-93 JUDGMENT WITHDRAWED AS TO NORTON COMPANY AS PER LETTER FROM THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY. RECORDED 12-16-93.
AMENDED JUDGMENT TO ADD DEFENDANT: GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC. RECORDED 03-07-97.
A&B DUMP TRUCK SERVICE INC ADDED TO OUR INDEX.
Satisfied 12/07/92
AMERICAN INKS AND COATINGS CORP ADDED TO OUR INDEX.

Satisfied 09/25/97
MCCORQUODALE COLOR CARD CO DIVISION ADDED TO OUR INDEX.
Satisfied 09/25/97
AT &T TECHNOLOGIES INC ADDED TO OUR INDEX.
Satisfied 09/25/97
GILBERT SPRUANCE CO INC ADDED TO OUR INDEX.
Satisfied 09/25/97
GILBERTSPRUANCE CO INC ADDED TO OUR INDEX.
Satisfied 09/25/97
NORTON COMPANY ADDED TO OUR INDEX.
Vacated 12/16/93
PUR ALL PAINT PRODUCTS ADDED TO OUR INDEX.
PURALL PAINT PRODUCTS ADDED TO OUR INDEX.
SHERWIN WILLIAMS CO INC ADDED TO OUR INDEX.
Satisfied 09/25/97
SHERWINWILLIAMS CO INC ADDED TO OUR INDEX.
Satisfied 09/25/97
SEVEN SIX CARTING COMPANY INC ADDED TO OUR INDEX.
GENERAL PRINTING INK DIVISION ADDED TO OUR INDEX.
Satisfied 03/12/90
*** End of Abstract **

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(DETAIL# 12)

REFERENCE: A916371 STATE: NJ SUPERIOR COURT
JUDGMENT: DJ-00116636-1990 TYPE: CERTIF OF DEBT VENUE: ESSEX
DATE DOCKETED: 11/08/90 FROM: ADMINISTRATOR OF NEW JERSEY SPILL COMPENSATIO

AMOUNT: $ 824,790.56
CREDITOR(S):
NEW JERSEY SPILL COMPENSATION FUND
DEBTOR(S):
WHITE CHEMICAL CORPORATION
(No Address)
AND
JAMES WHITE
(No Address)

NOTICE OF LIEN
HAZARDOUS SUBSTANCES AT WHITE CHEMICAL CORPORATION, 660 FRELINGHUYSEN AVE., NEWARK, ESSEX COUNTY, NEW JERSEY, BLOCK 3782, LOT 107
*** End of Abstract **

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(DETAIL# 13)

REFERENCE: A1576592 STATE: NJ SUPERIOR COURT
JUDGMENT: J-00056159-1992 ACTION: CONTRACT VENUE: UNION
DATE ENTERED: 05/15/92 SIGNED: 05/08/92 CASE: L-000134-91
AMOUNT: $ 7,275.60
CREDITOR(S):
IMC-PITMAN-MOORE , INC.
ATTY FOR CR.: HEITNER AND BREITSTEIN
DEBTOR(S):
WHITE CHEMICAL CORPORATION
100 MANHATTAN AV, UNION CITY, NJ 07087

*** End of Abstract **

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(DETAIL# 14)

REFERENCE: B3244899 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SL-00008384-1991 VENUE: PASSAIC
DATE ENTERED: 07/23/91 ACTION: CONTRACT
Dismissed 01/15/93
AMOUNT: $ 5,748.00
PLAINTIFF :
DELAWARE CONTAINER COMPANY, INC.
ATTY FOR PLTF: JOSEPH A. MARINO-
DEFENDANT:
WHITE CHEMICAL CORPORATION
Dismissed 01/15/93
P.O. BOX 2500
NEWARK, NJ 07114

*** End of Abstract **

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REFERENCE: B3873503 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SL-00010458-1992 VENUE: MIDDLESEX
DATE ENTERED: 10/09/92 ACTION: ENVIRONMNT
Settled 08/11/93
PLAINTIFF :
PAULA A. CAMMARATA
ALAN T. BULLER
EDWARD J. MAKAREWICZ
ATTY FOR PLTF: KOZLOV, SEATON AND ROMANINI-
DEFENDANT:
D & O CHEMICALS CO., INC.
(No Address)
Settled 08/11/93
TENNESSEE EASTMAN COMPANY
(No Address)
Settled 08/11/93
ECONALYTIC SYSTEMS INCORPORATED
(No Address)
Settled 08/11/93
ELI LILLY AND COMPANY
(No Address)
Settled 08/11/93
EM SCIENCE
(No Address)
Settled 08/11/93
ETHYL CORPORATION
(No Address)
Settled 08/11/93
EXXON CHEMICAL COMPANY USA
(No Address)
Settled 08/11/93
FMC CORPORATION
(No Address)
Settled 08/11/93
FANWOOD CHEMICAL INC.
(No Address)
Settled 08/11/93
HEXAGON ENTERRPISES INC.
(No Address)
Settled 08/11/93
HUMMEL CROTON, INC.
(No Address)
Settled 08/11/93
ICI AMERICAS, INC.
(No Address)
Settled 08/11/93
ICP CHEMICAL GROUP, INC.
(No Address)
Settled 08/11/93
INOLEX CHEMICAL COMPANY, INC.
(No Address)
Settled 08/11/93
INTEROX CHEMICAL PTY. LTD.
(No Address)
Settled 08/11/93
MAYBROOK, INC.
(No Address)
Settled 08/11/93

MERCK & CO., INC.
(No Address)
Settled 08/11/93
MONSANTO COMPANY, INC.
(No Address)
Settled 08/11/93
PROCTOR AND GAMBLE CO.
(No Address)
Settled 08/11/93
REILLY INDUSTRIES
(No Address)
Settled 08/11/93
RHONE-POULENC AG. CO., INC.
(No Address)
Settled 08/11/93
ROCKLAND INDUSTRIES INC.
(No Address)
Settled 08/11/93
SPECTRUM CHEMICAL MANUFACTURING CORPORATION
(No Address)
Settled 08/11/93
TANNER CHEMICAL CO INC.
(No Address)
Settled 08/11/93
TURNBULL CORPORATION
(No Address)
Settled 08/11/93
UNION CARBIDE CHEMICAL AND PLASTICS COMPANY, INC.
(No Address)
Settled 08/11/93
PPG INDUSTRIES INC.
(No Address)
Settled 08/11/93
WHITE CHEMICAL CORPORATION
(No Address)
Settled 08/11/93
JAMES W. WHITE
(No Address)
Settled 08/11/93
AZS CORPORATION
(No Address)
Settled 08/11/93
LANCASTER CHEMICAL CORPORATION
(No Address)
Settled 08/11/93
MINNESOTA MINING AND MANUFACTURING COMPANY, USA
(No Address)
Settled 08/11/93
ABBOTT LABORATORIES
(No Address)
Settled 08/11/93
AIR PRODUCTS AND CHEMICALS, INC.
(No Address)
Settled 08/11/93
AMERICAN HOECHST CORPORATION
(No Address)
Settled 08/11/93
B & P ENVIRONMENTAL RESOURCES, INC.
(No Address)

Settled 08/11/93

BEECHAM LABORATORIES

(No Address)

Settled 08/11/93

BIOCRAFT LABORATORIES, INC.

(No Address)

Settled 08/11/93

CHUGAI INTERNATIONAL AMERICA CORP.

(No Address)

Settled 08/11/93

PHILIP WIESENFELD

Settled 08/11/93

688 MAPLE AV, ELIZABETH, NJ 07202

*** End of Abstract **

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(DETAIL# 16)

REFERENCE: B4624711 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SL-00001910-1994 VENUE: ESSEX
DATE ENTERED: 02/15/94 ACTION: MISCELLANEOUS
Dismissed 06/16/97

PLAINTIFF :
STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND EMERGY A

SUSAN B BOYLE
ADMINISTRATOR NEW JERSEY SPILL COMPENSATION FUND

ATTY FOR PLTF: DEBORAH T. PORITZ, ATTORNEY GENERAL OF NEW JERSEY-

DEFENDANT:
SIGNO TRADING INTERANTIONAL INC.
(No Address)
Dismissed 03/11/96
SCI EQUIPMENT AND TECHNOLOGY
(No Address)
Dismissed 03/11/96
ACE SERVICE CORPORATION
Dismissed 03/11/96
WILLIAM H. EELLS, 3RD
14 LANE OF ACRES HADDONFIELD, NJ 08033
ADELL PLASTICS, INC.
(No Address)
Dismissed 03/11/96
AMERACE CORPORATION
(No Address)
Dismissed 03/11/96
ARTHUR H. THOMAS COMPANY
(No Address)
Dismissed 03/11/96
ATLANTIC COAST ENVIRONMENTAL, INC.
(No Address)
Dismissed 03/11/96
AUTO DYNAMICS, INC.
Dismissed 03/11/96
DANIEL LOUIS GROSSMAN
299 BALDWIN RD, PARSIPPANY, NJ
BLACK AND DECKER INC.
(No Address)
Dismissed 03/11/96
BRYN MAWR ASSOCIATES, INC.
(No Address)
Dismissed 03/11/96
BURLINGTON INDUSTRIES, INC.
(No Address)
Dismissed 03/11/96
CHESAPEAKE AND POTOMAC TELEPHONE COMPANY
(No Address)
Dismissed 03/11/96
CELOTEX CORPORATION
(No Address)
Dismissed 03/11/96
CHELTENHAM TOWNSHIP SCHOOL DISTRICT
(No Address)
Dismissed 03/11/96
CITY OF PHILADELPHIA
(No Address)
Dismissed 03/11/96

CLEMENTS BROTHERS, INC.

(No Address)
Dismissed 03/11/96
CLIFTON PRECISION NORTH
(No Address)
Dismissed 03/11/96
CHARLES COLBERT ,INDIVIDUALLY
(No Address)
Dismissed 03/11/96
JACK COLBERT ,INDIVIDUALLY
(No Address)
Dismissed 03/11/96
DELAWARE STATE UNIVERSITY
(No Address)
Dismissed 03/11/96
F/K/A
DELAWARE STATE COLLEGE
(No Address)
Dismissed 03/11/96
DREXEL UNIVERSITY
(No Address)
Dismissed 03/11/96
EASTERN CHEMICAL CLEANING, INC.
(No Address)
Dismissed 03/11/96
ECONOMICS LABORARORY, INC.
(No Address)
Dismissed 03/11/96
ENVIRONMENTAL CLEANING AND TESTING, INC.
(No Address)
Dismissed 03/11/96
EVERGREEN PRINTING AND PUBLISHING COMPANY, INC.
Dismissed 03/11/96
SALAYDA
1001 HAAG AV, BELLMAWR, NJ 08031
EXTRACORPOREAL TECHNOLOGIES, INC.
(No Address)
Dismissed 03/11/96
EXXON CORPORATION
(No Address)
Dismissed 03/11/96
F/K/A
STANDARD OIL COMPANY
(No Address)
Dismissed 03/11/96
FEDERAL RESERVE BANK OF PHILADELPHIA
(No Address)
Dismissed 03/11/96
FENWAL, INC.
(No Address)
Dismissed 03/11/96
FLEER CORPORATION
(No Address)
Dismissed 03/11/96
FORD MOTOR COMPANY
(No Address)
Dismissed 03/11/96
F/K/A
FORD MOTOR COMPANY OF DELAWARE
(No Address)

Dismissed 03/11/96
FOSTER MEDICAL CORPORATION, INC.
(No Address)
Dismissed 03/11/96
A/K/A
STOUGHTON LABS
(No Address)
Dismissed 03/11/96
FRANK'S TRUCKING CORPORATION
Dismissed 03/11/96
WILLIAM F. MOUGHAN
APT.3-H
11 COLLEGE DR, JERSEY CITY, NJ 07305
GENERAL DYNAMICS CORPORATION
(No Address)
Dismissed 03/11/96
GENERAL ELECTRIC COMPANY
(No Address)
Dismissed 03/11/96
GENCORP INC.
(No Address)
Dismissed 03/11/96
F/K/A
GENERAL TIRE AND RUBBER COMPANY
(No Address)
Dismissed 03/11/96
GIVAUDAN ROURECORPORATION
(No Address)
Dismissed 03/11/96
GLOBE INDUSTRIES CORPORATION
(No Address)
Dismissed 03/11/96
HARCUM COLLEGE
(No Address)
Dismissed 03/11/96
HENON COMPANY INC
(No Address)
Dismissed 03/11/96
ENVIRONMENTAL ENTERPRISES INC
(No Address)
Dismissed 03/11/96
HERAEUS INC
(No Address)
Dismissed 03/11/96
HERCULES INC
(No Address)
Dismissed 03/11/96
HERCULES POWDER COMPANY
(No Address)
Dismissed 03/11/96
HITCHINER MANUFACTURING COMPANY INC
(No Address)
Dismissed 03/11/96
HULS AMERICA INC
(No Address)
Dismissed 03/11/96
TENNECO CHEMICALS
(No Address)
Dismissed 03/11/96

ICI AMERICAS INC
(No Address)
Dismissed 03/11/96
JOHNS HOPKINS UNIVERSITY INC
(No Address)
Dismissed 03/11/96
JOHNSON AND JOHNSON
(No Address)
Dismissed 03/11/96
J T BAKER INC
(No Address)
Dismissed 03/11/96
KADEX CORPORATION
(No Address)
Dismissed 03/11/96
KEMSTAR CORPORATION
(No Address)
Dismissed 03/11/96
LANDOVER EXPRESS CORPORATION INC
(No Address)
Dismissed 03/11/96
LDC CHEMICAL SERVICES INC
(No Address)
Dismissed 03/11/96
LEEDS AND NORTHRUP COMPANY
(No Address)
Dismissed 03/11/96
LONZA INC
(No Address)
Dismissed 03/11/96
BAIRD CHEMICAL INDUSTRIES INC
(No Address)
Dismissed 03/11/96
MARCH TRANSPORTATION COMPANY
(No Address)
Dismissed 03/11/96
H AND F TRACTOR LEASING INC
(No Address)
Dismissed 03/11/96
MAXUS ENERGY CORPORATION
(No Address)
Dismissed 03/11/96
ROBERT MCKENNA
(No Address)
Dismissed 03/11/96
MCNEIL CONSUMER PRODUCTS COMPANY
(No Address)
Dismissed 03/11/96
MERCURY MOTOR EXPRESS INC
(No Address)
Dismissed 03/11/96
METRO CARRIER CORPORATION
(No Address)
Dismissed 03/11/96
MORTON SPRINGER INC
(No Address)
Dismissed 03/11/96
MUHLENBERG COLLEGE
(No Address)

Dismissed 03/11/96
NASSAU MEDICAL LABORATORY L P
(No Address)
Dismissed 03/11/96
N D E TRUCKING CORPORATION
(No Address)
Dismissed 03/11/96
NL INDUSTRIES INC
(No Address)
Dismissed 03/11/96
NORAMCO CORPORATION
(No Address)
Dismissed 03/11/96
NORTH AMERICAN DRAGER
(No Address)
Dismissed 03/11/96
NOXELL CORPORATION
(No Address)
Dismissed 03/11/96
OCCIDENTAL CHEMICAL CORPORATION
(No Address)
Dismissed 03/11/96
O H M REMEDIATION SERVICES CORPORATION
(No Address)
Dismissed 03/11/96
KBI CORPORATION
(No Address)
Dismissed 03/11/96
ONE CALL MOTOR FREIGHT INC
(No Address)
Dismissed 03/11/96
OWENS ILLINOIS CHEMICAL CORPORATION
(No Address)
Dismissed 03/11/96
PARK TRADING INC
(No Address)
Dismissed 03/11/96
PFIZER INC
(No Address)
Dismissed 03/11/96
PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE
(No Address)
Dismissed 03/11/96
PHILADELPHIA NEWSPAPERS INC
(No Address)
Dismissed 03/11/96
PHILADELPHIA SUBURBAN WATER COMPANY
(No Address)
Dismissed 03/11/96
PHILLIP MORRIS INC
(No Address)
Dismissed 03/11/96
PROCTOR AND SCHWARTZ INC
(No Address)
Dismissed 03/11/96
RESOURCE TECHNOLOGY SERVICES INC
(No Address)
Dismissed 03/11/96
VALLEY FORGE LABORATORIES

(No Address)
Dismissed 03/11/96
SHERWIN WILLIAMS COMPANY
(No Address)
Dismissed 03/11/96
SOUTHEERN MILL CREEK PRODUCTS OF OHIO INC
(No Address)
Dismissed 03/11/96
STOCKTON SALES INC
(No Address)
Dismissed 03/11/96
STORAGE INNOVATIONS INC
(No Address)
Dismissed 03/11/96
SUN CHENICAL CORPORATION
(No Address)
Dismissed 03/11/96
SYNTEX CHEMICALS INC
(No Address)
Dismissed 03/11/96
ARAPAHOE CHEMICALS INC
(No Address)
Dismissed 03/11/96
TEMPLE UNIVERSITY
(No Address)
Dismissed 03/11/96
THOMPSON CSF COMPONENTS CORPORATION
(No Address)
Dismissed 03/11/96
DUMONT ELECTRON TTUBES
(No Address)
Dismissed 03/11/96
UNION CARBIDE CORPORATION
(No Address)
Dismissed 03/11/96
UNITED STATES GYPSUM COMPANY
(No Address)
Dismissed 03/11/96
UNISYS CORPORATION
(No Address)
Dismissed 03/11/96
BURROUGHS CORPORATION
(No Address)
Dismissed 03/11/96
VISTA CORPORATION
(No Address)
Dismissed 03/11/96
VOLKSWAGON OF AMERICA
(No Address)
Dismissed 03/11/96
WASTE CONVERSIONS INC
(No Address)
Dismissed 03/11/96
WEST CHESTER UNIVERSITY OF PENNSYLVANIA
(No Address)
Dismissed 03/11/96
WHITE CHEMICAL CORPORATION
(No Address)
Dismissed 03/11/96

WILLIAM PENN SCHOOL DISTRICT
(No Address)
Dismissed 03/11/96
YELLOW FREIGHT SYSTEMS INC
(No Address)
Dismissed 03/11/96

*** End of Abstract **

==========

(DETAIL# 17)

REFERENCE: B7674044 STATE: NJ SUPERIOR CT LAW DIV
SUIT: SL-00004352-1997 VENUE: CAMDEN
DATE ENTERED: 06/04/97 ACTION: TORT-OTHER
Dismissed 10/26/98

PLAINTIFF :
ROBERTA TARCASO ,ESTATE OF
JOSEPH ROMANO ,EXECUTOR

ATTY FOR PLTF: SUFRIN ZUCKER WALLER

DEFENDANT:

ADELPHI INDUSTRIES
(No Address)
Dismissed 10/26/98

ANTHONY AMADEI
(No Address)
Dismissed 10/26/98

AMERICN LACQUER SOLVENTS
(No Address)
Dismissed 10/26/98

ANTHONY AMADEI SAND & GRAVEL
(No Address)
Dismissed 10/26/98

ATL INDUSTRIAL TANK MAINTENANCE
(No Address)
Dismissed 10/26/98

ATL INDUSTRIAL TANK MAINTENANCE, INC.
(No Address)
Dismissed 10/26/98

BERLIN GLASS, INC.
Dismissed 10/26/98
60 W WHITE HORSE PIKE, BERLIN, NJ 08009

CAMDEN IRON & METAL IND
Dismissed 10/26/98
1500 S 6TH ST, CAMDEN, NJ 08101

CAMDEN IRON & METAL OF PA
(No Address)
Dismissed 10/26/98

CAMDEN IRON WORKS, INC.
(No Address)
Dismissed 10/26/98

CANETIC CORPORATION
(No Address)
Dismissed 10/26/98

CECA, INC.
(No Address)
Dismissed 10/26/98

CELOTEX CORPORATION
(No Address)
Dismissed 10/26/98

CHARLES CRUMBLEY, INC.
(No Address)
Dismissed 10/26/98

CHEMICAL CONTROL CORP
(No Address)
Dismissed 10/26/98

COLE STEEL COMPANY
(No Address)
Dismissed 10/26/98

COLE BUSINESS FURNITURE CORPORATION

(No Address)
Dismissed 10/26/98
JOYCE INTERNATIONAL, INC.
(No Address)
Dismissed 10/26/98
CONTINENTAL VANGUARD, INC.
(No Address)
Dismissed 10/26/98
CROWN CORK & SEAL COMPANY, INC.
(No Address)
Dismissed 10/26/98
DAVID ERLICH
(No Address)
Dismissed 10/26/98
DENNIS DUBIN
(No Address)
Dismissed 10/26/98
DOCK RESINS CORPORATION
(No Address)
Dismissed 10/26/98
E.G. ELSEY, INC.
(No Address)
Dismissed 10/26/98
E.I. DUPONT DENEMOURS & COMPANY, INC.
(No Address)
Dismissed 10/26/98
EAST COAST POLLUTION CONTROL
(No Address)
Dismissed 10/26/98
GENERAL COOPERAGE COMPANY
(No Address)
Dismissed 10/26/98
GIORDANO WASTE MATERIAL COMPANY
(No Address)
Dismissed 10/26/98
GLOUCESTER ENVIRONMENTAL MANAGEMENT
(No Address)
Dismissed 10/26/98
HAULROADS, INC.
(No Address)
Dismissed 10/26/98
HULBERT OIL COMPANY
(No Address)
Dismissed 10/26/98
JONAS WASTE REMOVAL, INC.
(No Address)
Dismissed 10/26/98
MARVIN JONAS
(No Address)
Dismissed 10/26/98
KEL-RON STEEL & FIBER DRUM CO
(No Address)
Dismissed 10/26/98
LAND BANK, INC.
(No Address)
Dismissed 10/26/98
LIGHTMAN DRUM COMPANY
(No Address)
Dismissed 10/26/98

JACK M LISS
(No Address)
Dismissed 10/26/98
TIMOTHY MEAKIN
(No Address)
Dismissed 10/26/98
JOHN MEAKIN
(No Address)
Dismissed 10/26/98
MEAKINS CORPORATION
(No Address)
Dismissed 10/26/98
MEAKINS ENTERPRISES, INC.
(No Address)
Dismissed 10/26/98
MEAKINS REALTY
(No Address)
Dismissed 10/26/98
NOVAGUARD CORPORATION
(No Address)
Dismissed 10/26/98
PFIZER, INC.
(No Address)
Dismissed 10/26/98
PRINCETON CHEMICAL RESEARCH
(No Address)
Dismissed 10/26/98
PRODUCT RESEARCH, INC.
(No Address)
Dismissed 10/26/98
PUBLIC SERVICE ELECTRIC & GAS COMPANY
(No Address)
Dismissed 10/26/98
RAGEN TRANSPORTATION CO
(No Address)
Dismissed 10/26/98
RJR NABISCO, INC.
(No Address)
Dismissed 10/26/98
ROHM & HAAS COMPANY, INC.
(No Address)
Dismissed 10/26/98
S.M. TRASH CONTAINER SERVICES, INC.
(No Address)
Dismissed 10/26/98
SCIENTIFIC CHEMICAL PROCESS
(No Address)
Dismissed 10/26/98
STALEY CHEMICAL COMPANY
(No Address)
Dismissed 10/26/98
SUKONIK BARREL & DRUM COMPANY, INC.
(No Address)
Dismissed 10/26/98
THOROFARE TRASH COMPANY
Dismissed 10/26/98
400 CROWN POINT RD, THOROFARE, NJ
TRUCK AWAY, INC.
(No Address)

Dismissed 10/26/98
UNITED STEEL BARREL COMPANY
(No Address)
Dismissed 10/26/98
VINELAND CHEMICAL CO
(No Address)
Dismissed 10/26/98
WASTE TECHNOLOGY CORPORATION
(No Address)
Dismissed 10/26/98
WHITE CHEMICAL CORPORATION
(No Address)
Dismissed 10/26/98
RICHARD WINN
(No Address)
Dismissed 10/26/98
JONAS STEEL DRUM
(No Address)
Dismissed 10/26/98

*** End of Abstract **

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(DETAIL# 18)

REFERENCE: A410324 STATE: NJ CASE: 321,345.00
BANKRUPTCY: BK-00008279-1989 CHAPTER: 11 VOLUNTARY
PETITION FILED: 10/13/89 ORDER FOR RELIEF: 10/13/89 ASSETS: $ 8,667.00 LIAB

DEBTOR(S): WHITE CHEMICAL SALES, INC. , EIN#:22-1759269
JAMES WHITE ON 10-13-89
660 FRELINGHUYSEN AV, NEWARK, NJ
ATTORNEY: GREENBAUM, ROWE, SMITH, RAVIN, DAVIS & BERGSTEIN-

ORDER DISMISSING PETITION: 08/20/92
FINAL DECREE: 08/20/92

*** End of Abstract **

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HUDS( ) REGIONAL HEALTH COMM.)ION
313 HARRISON AVENUE
HARRISON, N.J. 07029

REPORT OF FIELD INVESTIGATION

DATE 6-26-80 TIME _____ FILE# _____
REFERENCE TO CHAPTER _____

FULL BUSINESS NAME White Chemical Spill

Location Bayonne Ind. Complex, Bayonne, N.J.
No. Street Municipality

Mailing Address _____
No. Street Post Office Zip Code

Person(s) Interviewed _____ Title _____

_____ Title _____

Comments _____

Report Requested by _____ Title

Purpose of Investigation A spill of pivaloyl chloride (trimethylacetyl-chloride) occured at White Chemical Company between 10:30 and 11:00 p.m

Observations According to company sources a pallet on which several drums were stacked cracked causing two drums to fall, one of which ruptured. Fire officials were not notified of this spillage. When the material was spilled, the clean up procedure was to flood it with water. According to Steve Shopsis of White Chemical Company, pivoloyl chloride when contacted with water yields pivalic acid (a solid material) and hydrochloric acid formed a vapor cloud which travelled west going beyond the perimeter of the Bayonne Industries Complex. At this point the vapor was detected by police officers who in turn notified the fire department When fire officials reached the site the vapor had dissipated and clean up was in process. Residue from the spill has been shoveled into drums for proper disposal. On 6/27/80 there was still a detectable hydrochloric acid odor at the site of the spill. Also, Steve Shopsis said that one of his employees detected HCL while on 25th St. about the time of this incident. Mr. Shopsis also stated that disciplinary measures will be taken against the supervisor at that time for not informing fire officials of the spill.

Conclusions Persons from White Chemical who provided information on the incident were Steve Shopsis, Bill Richardson, and Dave Rigenbogen.

Recommendations _____

Investigated by Gary Garetano
Signed

DDH000005