Response to MDE SWP Comments Related to:
"Area 1, Phase 2 Detailed Development Plan, Parcel 3 Development, Honeywell Baltimore Works Site, Baltimore, Maryland" Resubmitted November 19, 2021 and associated documents (the "DDP"),

MDE SWP COMMENT #	MDE COMMENT	COMMENT RESPONSE
A.	General. There still remain a few typographical errors that are not all identified below, and some inconsistencies that are identified in this document. It is recommended that the document be proof-read again in toto prior to re-submission.	The DDP document including appendices has been proof-read again and typographical errors have been corrected.
B.	From the Response Document: 1. Response II.D, regarding the Narrative Page 10, Section 3.4.2.1: MDE's previous comment referenced a description in the Narrative of 45.8' cellular cofferdams backfilled with sand and gravel, connected by steel sheet pile arcs, and requested a description of the materials used to construct the cofferdams themselves if this is known. The response was that "Strength, size, pile top elevation, and pile tip elevation are all unknown." How was it known that there are cofferdams connected by sheet pile arcs? From the response it sounds like it is known that they are pilings of some type (e.g., "pile top construction", "pile tip elevation" etc.); are they also sheet piles, and it is just the specifications that are unknown? The question is pertinent, as the performance of wooden pilings which may decay faster than steel sheet pilings may affect the performance of the cap under load.	Steel sheet pile coffer dams were exposed and visually inspected by Mueser Rutledge Consulting Engineers via diver and surface observation in 1989 and photographed as part of the Condition Survey of Waterfront Structures report prepared by MRCE dated May 4, 1990. Design specifications and as-built conditions upon installation were not available in the records from Allied Signal reviewed prior to embankment construction and dismantlement in the 1990s. See attached for excerpt from Condition Survey pertinent to coffer dams.
C.	Appendix A.2, the Health and Safety Guidance: It appears that the Health and Safety Guidance document has not been updated since the last draft. 1. Page 27 (page 33 of the .pdf file), Section 17.3.1: In the last sentence under the section governing worker safety during tornado warnings, the text reads "Site workers will seek shelter in a building, expect trailers or low-lying areas." "Expect" should read "except". 2. Page 34 (page 40 of the .pdf file), Section 24: Maria Kouris is still listed as a contact. 3. Figure 2 (page 47 of the .pdf file): The location of the Perimeter Air Monitoring (PAM) stations is not in conformance with the Construction Air Monitoring Plan (CAMP), and the large red blob previously identified as being on Figure 1 of the CAMP without being identified in the legend is present on this figure as well. It is noted that Figure 1 of the CAMP has been corrected.	Section 17.3.1 has been updated to correct the typographical error. Section 24 (Incident Reporting Procedure) has been updated to reference the correct contact persons. PAM locations shown on Figure 2 has been updated to be consitent with CAMP.
D.	Appendix A.5, Construction Air Monitoring Plan: There is a discrepancy between Sections 2.1 and 2.3: Section 2.1 says there are 5 PAMs: "- PAM-1 is planned for placement between the Project and the Exelon Office Building; - PAM-2 is planned for placement between the Project and the Point Street Apartments (under construction at the time that this CAMP was being prepared); and - PAM-3, PAM-4, and PAM 5 will cover the remainder of the site perimeter." Section 2.3 suggests there are only 4 PAMs: "PM10 will be continuously monitored and 24-hour composite filter samples collected at the four fixed perimeter stations (i.e., PAM-1, PAM-2, PAM-3, and PAM-4) ..."	Section 2.3 has been updated to clarify that there are five (5) PAM stations.

Additional Clarifications / Modifications on:
"Area 1, Phase 2 Detailed Development Plan, Parcel 3 Development, Honeywell Baltimore Works Site, Baltimore, Maryland" Resubmitted November 19, 2021 and associated documents (the "DDP"),

ITEM NO.	REFERENCED DOCUMENT	CLARIFICATIONS / MODIFICATIONS
1	DDP Narrative	Section 5.2.2 (Excavation Dewatering) of the DDP has been updated to clarify definition of Contact Water. Section 7.2 (Air Monitoring and Dust Control) of the DDP has been updated to clarify continuation of perimeter air monitoring throughout intrusive activities unitl all materials removed from beneath the MMC geomembrane have been disposed offsite.
2	MHMP Narrative	Section 3.4 of the MHMP has been revised to replace the term "TPM" with "PM_{10}". This revision is consistent with the terminology presented in the CAMP. In Section 5.1 of the MHMP, a clarification on the profiling and disposal of Contact Water has been added to allow Contact Water that accumulates on plastic sheeting below the MMC to be stored and tested separately from other contact water for potential disposal at a non-hazardous facility.
3	HASP Narrative	Section 13.3 of the HASP has been revised to replace the term "TPM" with "PM_{10}". This revision is consistent with the terminology presented in the CAMP.
4	SPRP & SWPPP Narrative	In Section 4.2.1 of the SWPPP, and Section 5.1 of the SPRP, a clarification on the profiling and disposal of Contact Water has been added to allow Contact Water that accumulates on plastic sheeting below the MMC to be stored and tested separately from other contact water for potential disposal at a non-hazardous facility.
5	CAMP Narrative	Section 2.2.1 has been updated to clarify that air moniroing will not be required in an excavation area covered with a temporary geomembrane cap that achieves a continuous seal of the MMC geomembrane over the excavation.
6	CAMP Figure	An additional wind rose figure (Figure CAMP-01.1) has been added for NOAA's BLTM2 weather station, which is located near Fort McHenry and closer to the site (within 1.5 miles of Harbor Point)
7	QAPP Table	"Completeness" Column for PM_{10} Compound in Table 1 of the Construction Air Monitoring QAPP has been updated to clarify that the measurement of PM_{10} concentration at each location will be performed for the **duration of time that intrusive activities are taking place**.
8	QAPP Figure	Workzone monitoring network geometry shown on Figure 2 of QAPP has been updated to be consistent with workzone monitroing network geometry shown on Figure 3 of CAMP

CONDITION SURVEY
OF WATERFRONT STRUCTURES

ALLIED-SIGNAL INC. BALTIMORE WORKS
BALTIMORE, MARYLAND

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Allied-Signal Inc.
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May 4, 1990

tion at the mortar joints between a few of the blocks is more significant.

8. Bulkhead Type G
(West side: Sta. 10+23 to Sta. 13+86)

The limits and details of this structure are shown on Drawing No. 1005C. Field notes of observed conditions are provided in Appendix H, and an overall view of the cofferdam cells is shown in Photograph No. 19.

This structure, constructed circa 1966, is 363 feet long and was installed approximately 80 feet outboard of the old Type H bulkhead which was left in place. This bulkhead consists of six 45.8 foot diameter cellular cofferdams, spaced approximately 49.5 feet on center. The cells are connected to each other, on the outboard side only, by steel sheetpile arc-shaped bulkheads. The rounded closure to the bulkhead south of the cells is formed by a partial cell installed to overlap the cell immediately to the north. The outboard edge of the cells and the intermediate sheetpile bulkheads are capped with a concrete curb. Available drawings indicate the steel sheetpiles are MP-112 sections, 54 feet long along the outboard face and 48 feet long along the sides and back. The cells are shown to have been backfilled with sand and gravel.

The condition survey of the cellular cofferdams consisted of visually inspecting the outboard face of the sheetpiles for their full depth to mudline and performing ultrasonic thickness tests. Ultrasonic tests were performed at several locations above and below water and included areas which were tested during previous investigations. Prior to testing, the metal surfaces were prepared in a similar manner to those at Type F1 bulkhead. The mudline along the face of the bulkhead ranges between 13 and 18 feet below MLW.

At the north and south cells, the diver discovered steel sheeting walls inboard between the cells and adjacent bulkheads. Only the sheeting walls at the south end of the cells are shown on available drawings. It is believed these sheets were installed to function as closure walls to prevent fill from being lost between the two types of bulkhead structures. The closure walls are approximately 18 inches wide and extend from the underside of the slab at grade to about Elev.-4, one foot above the mudline. The diver was able to insert a probe in the void below the sheets for a distance of approximately 10 feet without encountering any other structure. However, no ground depressions or sinkholes exist in the areas immediately behind and above the closure walls.

The cofferdam cells are generally in good condition. However, isolated areas in the tidal zone exhibit significant corrosion, particularly at the cell junctions. At these locations, as shown

in Photograph No. 20, the rivets and connection angles are severely corroded and in most cases entirely disintegrated. The diver typically removed approximately 1/2 inch of rust scale with a hammer. Pitting is estimated to be approximately 1/8 inch. In some instances, pitting is as much as 1/4 inch deep. In at least two locations, the corrosion has penetrated the sheets and approximately 1/4 inch diameter perforations exist, typified by Photograph No. 21. Ultrasonic thickness measurements in the tidal zone indicate average section loss is generally 10 percent at the cell centerline and approximately 20 percent at junctions. The location and results of the measurements are included in Appendix H.

The steel H-piles which support the concrete deck between Cells Nos. 5 and 6, and No. 7 and Type H bulkhead, are extremely corroded at and above the tidal zone. The piles between Cells Nos. 5 and 6 have lost virtually all their load carrying capacity. As shown in Photograph No. 22, the webs are entirely corroded and the flanges deteriorated to approximately 3 inches in width and less than 1/16 inch thick. The pile supporting the slab at the southeast corner of Cell No. 7 is also corroded but not as severely. The underside of the concrete slabs are in good condition and no significant spalling exists.

9. Bulkhead Type H
(Southwest corner: Sta. 13+86 to Sta. 16+32)

The limits of this structure and framing details are shown on Drawing No. 1006C. Field notes of observed conditions are provided in Appendix I and an overall view of the structure is shown in Photographs Nos. 23 and 24.

Type H bulkhead, at the southwest corner of the site, was reconstructed circa 1948 and extends 106 feet north and 140 feet east from the corner. Available drawings show this structure to be a tied-back gravity type reinforced concrete headwall cast monolithically with a 7'-6" wide base slab located just above MLW. The headwall and base slab are supported by three longitudinal rows of timber piles. Below the headwall, the upland soil is supported by timber sheeting located immediately inboard of the first outboard row of piles. The depth to mudline along the face of the sheeting averages approximately 13 feet below MLW.

A total of six locations along Type H bulkhead were probed by the diver. Two locations along the west side and four along the south side. At each location, the probing device was advanced vertically along and adjacent to the sheeting face. The probe locations along the southwest corner are indicated as P-3 through P-6B on Drawing No. 1006C.

At probe locations P-3, P-4, and P-5, the diver encountered timber sheeting down to at least elevations -20, -19 and -19,

QUADRANT A

QUADRANT B

QUADRANT C

QUADRANT D

CITY PIER NO. 8

CENTER PIER

BACK BASIN

MATCH LINE A–B

MATCH LINE A–C

MATCH LINE B–D

MATCH LINE C–D

BULKHEAD TYPE D (SEE DWG. NO. 1003C)

STA. 7+00

BULKHEAD TYPES B AND C (SEE DWG. NO. 1002C)

STA. 2+40

BULKHEAD TYPE A (SEE DWG. NO. 1001C)

STA. 0+00

STA. 7+77

TYPE E

TYPE F1

TYPE F1 AND CRIB STRUCTURE (SEE DWG. NO. 1003C)

STA. 10+23

BULKHEAD TYPE G (SEE DWG. NO. 1003C)

BULKHEAD AND PIERHEAD LINE

DOCK STREET

CAROLINE STREET

GUARD

SCALE

GATE

MAIN OFFICE

POINT STREET

MILLS STREET

BLOCK STREET

THAMES STREET

PHILPOT STREET

STA. 13+86

BULKHEAD TYPE H (SEE DWG. NO. 1006C)

COVERED SLIP

TYPE J PLATFORM

TRUCK WASH

WATER TREATMENT PLANT

WILLS STREET EXTENSION

STA. 16+32

COVERED SLIP (SEE DWG. NO. 1006C)

STA. 17+04

BULKHEAD TYPES F2 & K (SEE DWG. NO. 1006C)

STA. 17+91

SOUTH SLIP

SOUTH SLIP

POLICE

GILL PIER

SHYROCK PIER

BOWIE SMITH PIER

BOWIE SMITH PIER (SEE DWG. NO. 1009C)

BULKHEAD AND PIERHEAD LINE

WATERFRONT FROM WILLS ST. TO THAMES ST. (SEE DWG. NO. 1010C)

NORTHWEST BRANCH OF THE PATAPSCO RIVER

CHANNEL

FLOW

EBB

GENERAL NOTES

1. THE GENERAL PLAN IS BASED ON A FALL 1989 SURVEY PERFORMED BY GREENHORNE AND O'MARA.
2. EXISTING PHYSICAL FEATURES SHOWN OF THE VARIOUS WATERFRONT STRUCTURES ARE BASED ON AVAILABLE ORIGINAL DESIGN DRAWINGS AND THE 1987 WHITMAN REQUARDT REPORT. DESCRIPTIONS OF EXISTING CONDITIONS AS REVEALED BY DIVER AND TEST PIT INVESTIGATIONS ARE PROVIDED IN THE 1990 MRCE REPORT "CONDITION SURVEY OF WATERFRONT STRUCTURES."
3. ELEVATIONS ARE REFERENCED TO THE BALTIMORE CITY AND COUNTY DATUM (BCCD) WHICH EQUALS ELEV. +93.425 FEET ON THE ALLIED PLANT DATUM AND ELEV.–0.85 FEET ON THE NATIONAL GEODETIC VERTICAL DATUM (NGVD). MEAN HIGH WATER (MHW) AND MEAN LOW WATER (MLW) ARE AT ELEV. +1.76 AND +0.661 BCCD.
4. SOIL STRATIFICATION INTERPOLATED FROM SUBSURFACE CONDITIONS REVEALED BY "MR–100" AND "MR–200" SERIES BORINGS. SEE OCTOBER 1988 AND APRIL 1990 MRCE SUBSURFACE INVESTIGATION REPORTS FOR SUBSURFACE INFORMATION. MUDLINE SURFACE ELEVATIONS WERE TAKEN FROM BORINGS, THE DIVER INSPECTION AND THE 1989 SURVEY PERFORMED BY GREENHORNE AND O'MARA.
5. ADDITIONAL WORK PERFORMED SINCE THIS FIELD INVESTIGATION INCLUDE:
   a) MAKING OF TEST PITS
   b) CHEMICAL TESTING OF FILL ON PLATFORMS ALONG SOUTH WATERFRONT
   c) REMOVAL OF FILL FROM BOWIE SMITH PIER
   d) SELECTIVE REMOVAL OF FILL FROM THE GILL AND SHYROCK PIERS.

LEGEND

- PROBE LOCATION
- TEST PIT LOCATION
- EXISTING TIMBER SHEETING
- EXISTING TIMBER MEMBER
- EXISTING CONCRETE STRUCTURE
- EXISTING ROCK LINE
- EXISTING SLOPE
- PILE CORE LOCATION
- SEDIMENT SAMPLE
- CENTER LINE PILE BENT

80' 40' 0 80' 160'

GRAPHIC SCALE

NO.	DESCRIPTION	DATE	BY	CHK	APP MR	APP B&V	APP A–S
0	CONDITION SURVEY	5/4/90					

MUESER RUTLEDGE CONSULTING ENGINEERS
708 THIRD AVENUE, NEW YORK, N.Y. 10017

FILE NO. 6909

BARNARD BUILDING AND TECHNOLOGY CORP.
CONSULTING ENGINEERS
PHILADELPHIA, PENNSYLVANIA

PROJECT NO. 04190

Allied Signal
ENGINEERED MATERIALS SECTOR
ENGINEERING DEPARTMENT
P.O. BOX 2105 R
MORRISTOWN, NJ 07960

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PROJECT NUMBER 31831

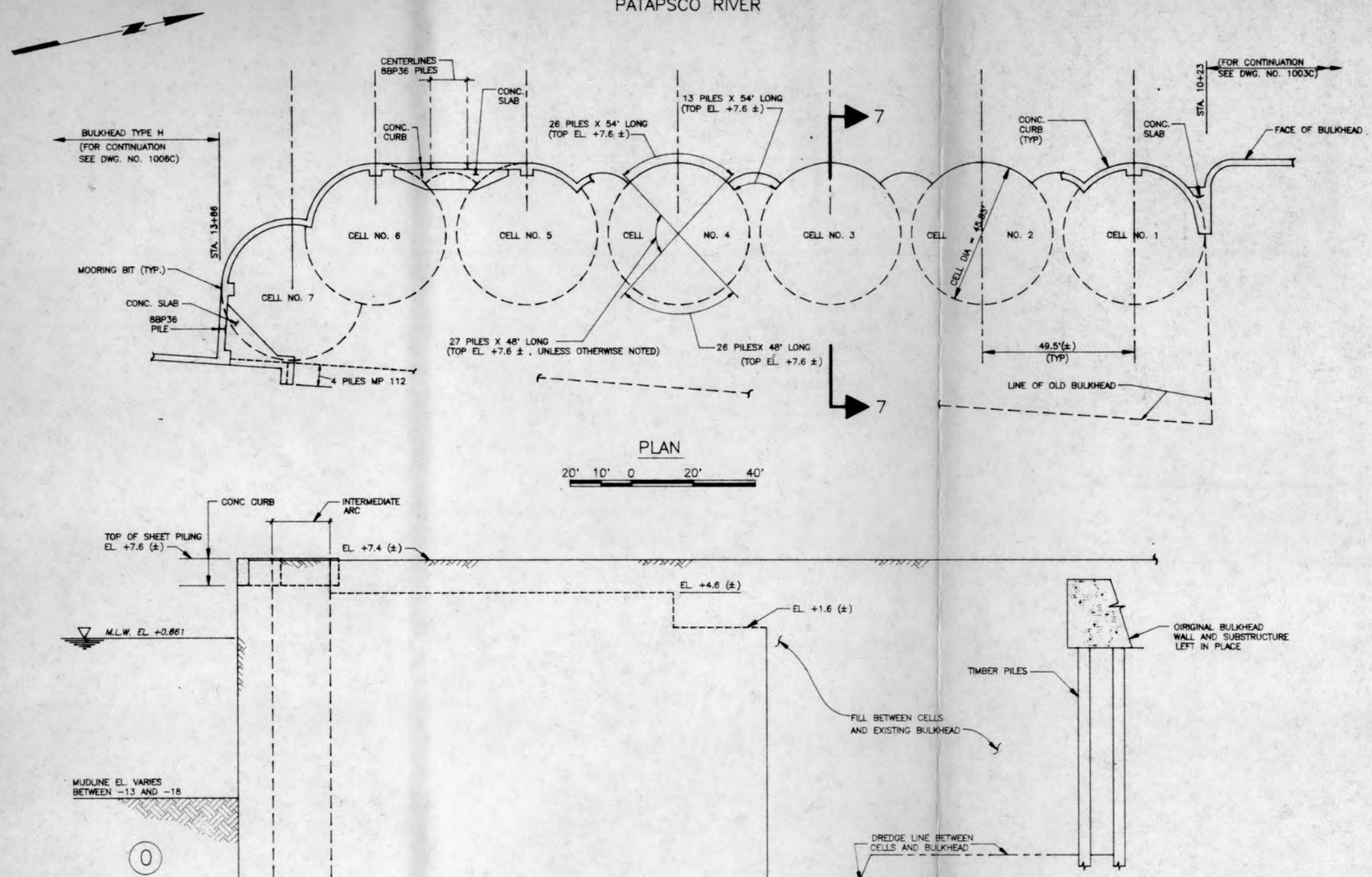
LOCATION BALTIMORE

BALTIMORE WORKS REMEDIATION

GENERAL PLAN

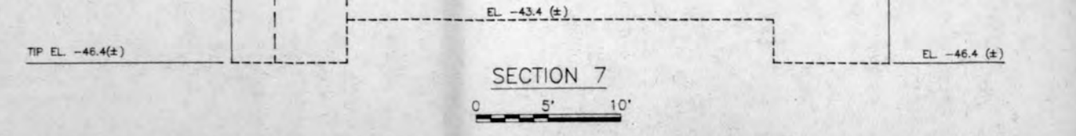
DRAWING NO. 1000C

SHEET OF



PLAN

20' 10' 0 20' 40'

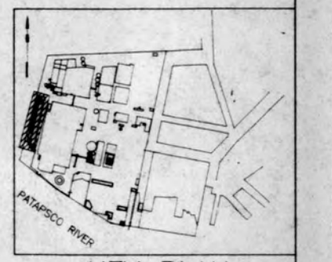


SECTION 7

0 5' 10'

NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING NO. 1000C.
2. EXISTING PHYSICAL FEATURES SHOWN ARE BASED ON AVAILABLE ORIGINAL DESIGN DRAWINGS AND THE 1987 WHITMAN REQUARDT REPORT. DESCRIPTIONS OF EXISTING CONDITIONS AS REVEALED BY DIVER INVESTIGATION ARE PROVIDED IN THE 1990 MRCE REPORT "CONDITION SURVEY OF WATERFRONT STRUCTURES."
3. SOIL STRATIFICATION INTERPOLATED FROM SUBSURFACE CONDITIONS REVEALED BY "MR-100" AND "MR-200" SERIES BORINGS. SEE OCTOBER 1988 AND APRIL 1990 MRCE SUBSURFACE INVESTIGATION REPORTS FOR SUBSURFACE INFORMATION. MUDLINE SURFACE ELEVATIONS WERE TAKEN FROM BORINGS, THE DIVER INSPECTION AND THE 1989 SURVEY PERFORMED BY GREENHORNE AND O'MARA.



KEY PLAN

N.T.S.

NO.	DESCRIPTION	DATE	BY	CHK	APP MR	APP B&V	APP A-S
0	CONDITION SURVEY	5/4/90					

MUESER RUTLEDGE CONSULTING ENGINEERS
708 THIRD AVENUE, NEW YORK, N.Y. 10017

FILE NO. 6909

BLASLAND, BOUCK & LEE, INC.
ENGINEERS AND SCIENTISTS
CONSULTING ENGINEERS
PHILADELPHIA, PENNSYLVANIA

PROJECT NO. 04190

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PROJECT NUMBER 31831
LOCATION BALTIMORE

BALTIMORE WORKS REMEDIATION

BULKHEAD TYPE G
PLAN AND SECTION

DRAWING NO. 1005C
SHEET OF

PLOT DATE 5/4/90

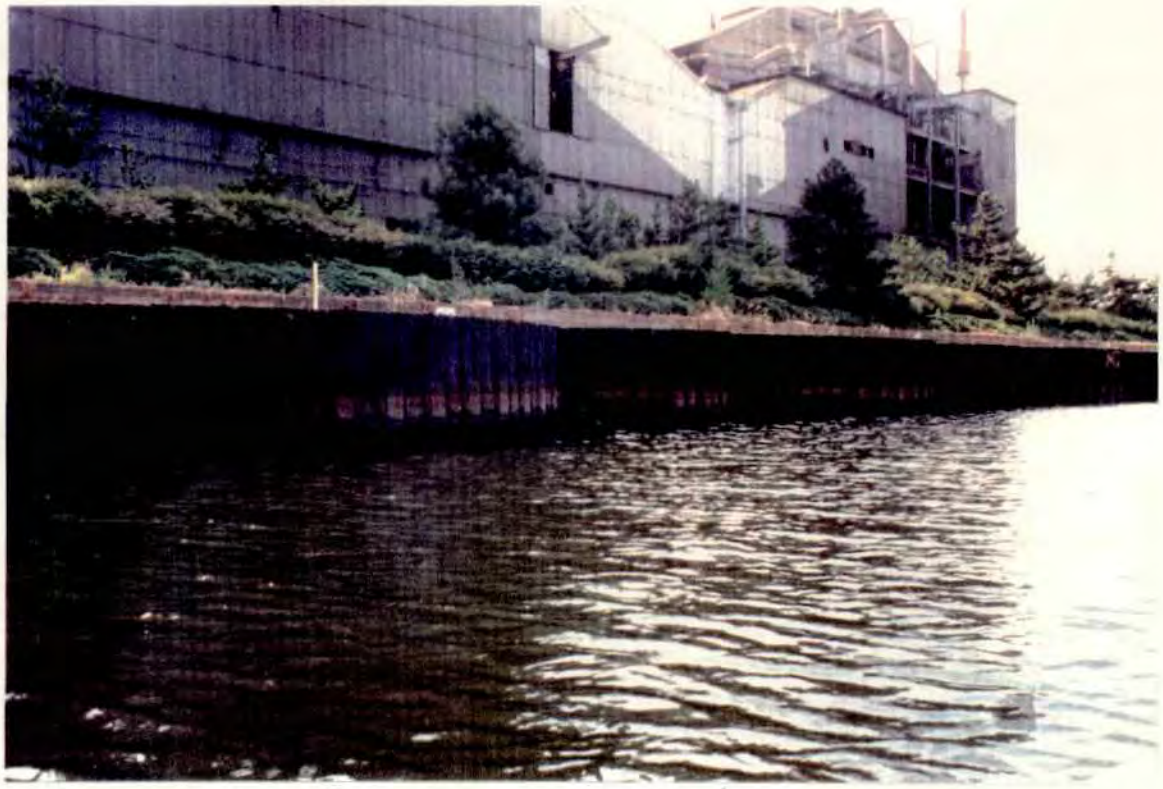

PHOTO NO.19 - OVERALL VIEW OF STEEL COFFERDAM CELLS BETWEEN STA. 10+23 AND STA. 13+86.