



US Army Corps  
of Engineers  
Buffalo District

AD-A278 455



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Cleveland Harbor  
Cuyahoga County, Ohio

# Confined Disposal Facility Project

(Site 10B - 15 Year)

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Final Environmental  
Impact Statement  
and Appendices

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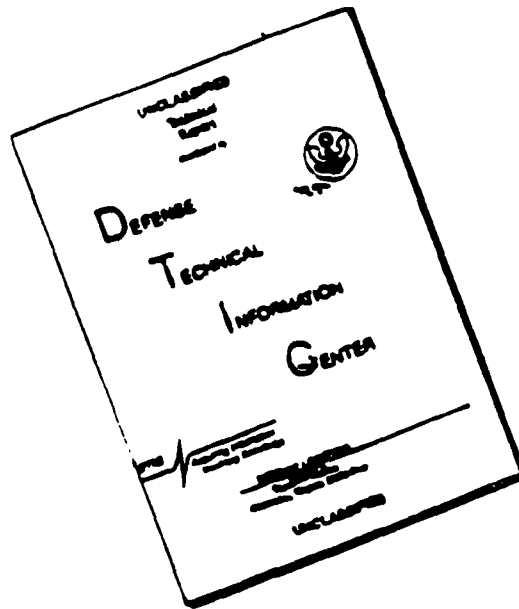
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This technical report updates earlier reports that recommended the dikes be raised by seven feet at the existing Federal Confined Disposal Facility (CDF) at Site 14 and the construction of a new CDF at Site 10, north of Burke Lakefront Airport. During planning and design of the new site, water quality, water circulation, and other concerns were raised regarding the adjacent embayment caused by the construction of the CDF. A decision was made in February 1991 to terminate the work at the Burke East Site. This report describes the sites that were considered and evaluated, resubmits a modified Site 10 disposal area adjacent to Burke Airport, and presents an economic and environmental evaluation of the site.		

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Final

Environmental Impact Statement

Harbor Maintenance and Confined  
Disposal Facility  
Site 10B (15-Year)

Cleveland Harbor, Cuyahoga County, Ohio

1994

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FINAL  
ENVIRONMENTAL IMPACT STATEMENT

HARBOR MAINTENANCE AND CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CLEVELAND HARBOR, CUYAHOGA COUNTY, OHIO

The responsible lead agency is the U.S. Army Engineer District, Buffalo. The City of Cleveland, Ohio is the cooperating agency for this project.

**ABSTRACT** - Cleveland Harbor is located at the mouth of the Cuyahoga River on the south shore of Lake Erie. By water, the port is approximately 176 miles west of Buffalo Harbor, New York and 96 miles east of Toledo Harbor, Ohio. It is a major port on the Great Lakes - St. Lawrence Seaway system. The Buffalo District has investigated problems and needs pertaining to annual maintenance of Federal navigation facilities and dredging and disposal of approximately 300,000 cubic yards of mostly polluted (not suitable for unrestricted open-lake disposal) sediments dredged from the Federal navigation channels at Cleveland Harbor. In addition to the No Action (Without Project Conditions) alternative, an array of alternative measures and/or plans were evaluated for basic engineering and economic feasibility, social and environmental acceptability, and/or their contributions towards accomplishing project planning objectives. Of the alternatives evaluated, the Site 10B (15-Year) CDF Plan has been identified as the recommended plan. This plan involves construction of a new stone rubblemound diked confined disposal facility (CDF) just northwest and adjacent to the Burke Lakefront Airport. The new CDF would have a 5,050-foot long perimeter stone dike and be about 68 acres in area, with a capacity to contain about 3,840,000 cubic yards of consolidated dredged material, thereby giving it an effective project life of about 15 years. The filled CDF would likely eventually be utilized to expand or relocate facilities at Burke Lakefront Airport. Environmental quality considerations include: construction and operations "environmental protection" measures, dredging removal of polluted (not suitable for unrestricted open-lake disposal) sediments from the harbor channels and containment in the CDF, loss of some protected harbor area and aquatic (water column & mud bottom) habitat but slight gain in perimeter (outer) stone dike aquatic habitat, and potential future waterfront land use (relocation/expansion of Burke Lakefront Airport) and possibly (where allowable/feasible) periphery waterfront recreational developments (ie North Coast Harbor) which may be facilitated/accommodated by CDF related future airport facility relocation or expansion. The basic plan is supported by the local cooperator.

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If you would like further information  
on this Environmental Impact Statement,  
please contact:  
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U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, New York 14207-3199  
Phone (716) 879-4173

NOTE: Information, displays, maps, etc. discussed in the Cleveland Harbor New CDF Letter Report may be incorporated by reference in the Environmental Impact Statement.

FINAL  
ENVIRONMENTAL IMPACT STATEMENT

HARBOR MAINTENANCE AND CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CLEVELAND HARBOR, CUYAHOGA COUNTY, OHIO

SUMMARY

MAJOR CONCLUSIONS AND FINDINGS

Cleveland Harbor is located at the mouth of the Cuyahoga River on the south shore of Lake Erie. By water, the port is approximately 176 miles west of Buffalo Harbor, New York and 96 miles east of Toledo Harbor, Ohio. It is a major port on the Great Lakes - St. Lawrence Seaway system.

Sediments from Cleveland Harbor Federal navigation channels are periodically sampled and analyzed for pollutants. In coordination (Reference Clean Water Act) with the U.S. Environmental Protection Agency (USEPA) and the Ohio Environmental Protection Agency (OEPA), testing indicates that most sediments dredged from Federal navigation channels are classified as polluted and not suitable for unrestricted open-lake discharge. (There is a short reach at the upper end of the Cuyahoga River Channel where primarily sand and gravel material accumulates. This material is relatively clean and may periodically be used as beach nourishment material.) This overall situation, although improving, is expected to continue for some time into the future.

On average, approximately 300,000 cubic yards of material is currently dredged from Cleveland Harbor Federal navigation channels annually. The material is discharged into the Site 14 confined disposal facility (CDF) located adjacent to the Cleveland Harbor East Entrance Channel. This CDF is nearly full. A new CDF and/or alternate measures are needed to facilitate continued dredging and discharge of dredged polluted material from Cleveland Harbor.

The U.S. Army Corps of Engineers, in conjunction with Federal, State, and local interests, has investigated problems and needs pertaining to maintenance of Federal navigation facilities and annual dredging and discharge of approximately 300,000 cubic yards of dredged polluted sediments from Federal navigation channels at Cleveland Harbor. The study was conducted in accordance with present Federal legislation, guidelines and regulations. In addition to the No Action (Without Project Conditions) alternative, an array of alternative measures and/or plans were evaluated for engineering and economic feasibility, and social and environmental acceptability, and/or their contributions towards accomplishing project planning objectives.

The No Action (Without Project Conditions) alternative is always a possibility and serves as the basis of comparison by which other possible alternatives may be compared. The No Action (Without Project Conditions) alternative is not acceptable primarily because of its expected significant economic, social, and environmental ramifications of limited dredging of the harbor.

Various alternate (non CDF) measures were also considered and are being pursued and implemented as possible, but are more long-term in nature and would not sufficiently address the approaching near-future problems associated with harbor operation and maintenance.

Development of a CDF at Site 10 emerged as the favored alternative. This however, could not be implemented, because the cost to extend sewer outflow pipes through the site would be a significant non-Federal cost which could not be financed by the local sponsors. Therefore, continued alternative development and evaluation became necessary.

Since no alternative was readily identified, accommodations for continued dredging and discharge into the early 1990's became a critical concern. The most apparent measure to provide for interim facilities until a new alternative can be implemented is to extend the use of currently utilized Site 14 by slightly raising the dike height (Plan 14A). This is not a popular plan in the area since Site 14 is projected to be utilized for expansion of Gordon Park. Nonetheless, in light of limited alternatives, Plan 14A was reluctantly endorsed as an interim measure by the local sponsors. Coordination pertaining to Plan 14A was coordinated by separate report in order to expedite potential implementation, while continued alternative development and evaluation is being pursued.

Development of a CDF at the Burke East Site emerged as a favorable alternative during this second phase of alternative development and evaluation. A supplemental "scoping" letter was coordinated in early January of 1990 pertaining to the Burke East Site. This coordination was conducted with agencies and organizations which previously were not substantially contacted for their comments and recommendations. Significant concerns pertaining to sewer outflows into the created embayment and associated water quality issues, as well as future land and water use conflicts, made this alternative unacceptable. Additionally, water quality studies and potential mitigation proposals would require significant additional time and funding.

Subsequently, the Site 10B (15-Year) CDF Plan has now emerged as the current recommended plan. It is preferred by the city of Cleveland with the understanding that the cost for sewer outflow pipe extensions would be a local sponsor cost. (These costs have been reduced from those for the original Site 10 Plan because of fewer extensions.) Other planning criteria appears to be within acceptable limits.

The Site 10B (15-Year) CDF Plan involves construction of a new stone rubblemound diked CDF just northwest and adjacent to the Burke Lakefront Airport. The new CDF would be about 68 acres in area and have a capacity to contain about 3,840,000 cubic yards of consolidated dredged material, giving it an effective project life of about 15 years. Several sewerline outflows would need to be extended through the site.

The plan is engineeringly and economically feasible, and with environmental and social design measure considerations, it is considered environmentally and socially acceptable. This plan best meets the overall planning objectives.

If the proposed project is constructed, the Contractor would be required to comply with the Corps of Engineers Civil Works Construction Guide Specification entitled "Environmental Protection" (CW-01430 - July 1978), which requires measures to minimize construction/operations impacts to water and associated land environmental resources (i.e., noise, dust, erosion, and turbidity) and FAA Regulations Part 77 Notice of Proposed Construction or Alteration.

As with all of the most feasible CDF alternatives, the range of resultant environmental impacts include harbor channel maintenance, a contribution toward protection of Lake Erie water and sediment quality, removal of polluted sediments from the harbor channels and containment in a CDF, some loss of protected harbor area and aquatic (water column) habitat, a trade-off or slight enhancement of perimeter stone dike aquatic habitat, and potential future waterfront land use. The U.S. Fish and Wildlife Service and the Ohio Department of Natural Resources comments and recommendations are addressed in more detail in SECTION 6 - PUBLIC INVOLVEMENT of this EIS.

Navigation facility operations and maintenance, dredging and discharge operations, and associated considerations would be expected to continue similar to existing operations, but utilizing the new CDF.

Environmental evaluation, as compared with the without project conditions, indicates that with implementation of the Recommended Plan, the following impacts would be expected. (Reference Summary Tables A and B which follow.)

Adverse Impacts - Minor to moderate short-term adverse impacts would be anticipated for: air quality; water quality; sediment quality; benthos/plankton; fisheries; vegetation; wildlife; public facilities and services; recreation; property values and tax revenues; noise and aesthetics; and community cohesion. Minor to moderate long-term adverse impacts would be anticipated for: air quality; water quality; benthos/plankton; and fisheries.

Not Significant Impacts - "Not significant" short-term impacts would be anticipated for: wetlands; threatened and endangered species; displacement of people; displacement of farms; and cultural resources. "Not significant" long-term impacts would be anticipated for: wetlands; wildlife; threatened and endangered species; displacement of people; displacement of farms; noise and aesthetics; and cultural resources.

Beneficial Impacts - Minor to moderate short-term beneficial impacts would be anticipated for: community and regional growth; business and industry; and employment and income. Minor to moderate long-term beneficial impacts would be anticipated for: sediment quality; vegetation; public facilities and services; recreation; property values and tax revenue; and community cohesion. Major long-term beneficial impacts would be anticipated for: community and regional growth; business and industry; and employment and income.

#### AREAS OF CONTROVERSY

Siting of a CDF for discharge of dredged polluted material is normally controversial. Several agencies and public interests requested that a full array of alternative measures be considered. This investigation considered



alternate measures (non CDFs), as well as, upland and in-water CDF sites for: implementability; overall engineering and economic feasibility, and environmental and social acceptability; and/or their contributions toward accomplishing project planning objectives. Some agencies are concerned about the continued use of lakefront aquatic areas for development of CDF's. However, provision of alternate measures and/or upland disposal sites remains extremely difficult, at this time.

Local sponsor recommendations and ability to implement local sponsor responsibilities was an important issue during this study. Generally, the local sponsor is required to provide lands, easements, right-of-ways, and relocations for the project.

As mentioned previously, although the local sponsors favored the initially considered CDF development at Site 10, the plan would have required a number of sewerline outflow extensions through the site at considerable cost to the local sponsors. The local sponsors could not finance that cost and further alternative development and evaluation was required.

Since no alternative was readily identified, accommodations for continued dredging and disposal through the early 1990's became a critical concern. The most apparent measure to provide for interim facilities until a new alternative could be implemented is to extend the use of currently utilized Site 14 by slightly raising the dike height (Plan 14A). This is not a popular plan in the area since Site 14 is projected to be utilized for expansion of Gordon Park. Nonetheless, in light of limited alternatives, Plan 14A was reluctantly endorsed as an interim measure by the local sponsors. Coordination pertaining to Plan 14A was coordinated by separate report in order to expedite potential implementation, while continued alternative development and evaluation is being pursued.

Development of a CDF at the Burke East Site emerged as a recommended alternative during this second phase of alternative development and evaluation. A supplemental "scoping" letter was coordinated in early January of 1990 pertaining to the Burke East Site. This coordination was conducted with agencies and organizations which previously were not substantially contacted for their comments and recommendations. Significant concerns pertaining to storm sewer outflows into the created embayment and associated water quality issues, as well as future land and water use conflicts, made this alternative unacceptable. Additionally, water quality studies and potential mitigation proposals would require significant additional time and funding.

Subsequently, the Site 10B (15-Year) CDF Plan has now emerged as the current recommended plan. It is preferred by the city of Cleveland with the understanding that the cost for sewer outflow pipe extensions would be a local sponsor cost. (These costs have been reduced from those for the original Site 10 Plan because of fewer extensions.) Other planning criteria appears to be within acceptable limits.

## UNRESOLVED ISSUES

Hopefully, major project planning issues have been resolved. Some items which need to be finalized include: coordination and approval of these draft and final reports, and response to comments; finalization of Federal and local cooperation agreements (including costs); preparation of project plans and specifications (including environmental consideration measures); acquisition of lands, easements, and right-of-ways; project construction; and operation and maintenance.

## RELATIONSHIP TO ENVIRONMENTAL PROTECTION STATUTES AND OTHER ENVIRONMENTAL REQUIREMENTS

Summary Table A, which follows, summarizes anticipated environmental impacts for each evaluation parameter for those final plans considered in detail. These are discussed in more detail in Table 5 - Comparative Impacts of Detailed Plans in SECTION 2 - ALTERNATIVE CONSIDERATIONS and in SECTION 4 - ENVIRONMENTAL EFFECTS of this Environmental Statement.

Summary Table B, which follows, indicates the relationship of final plans considered in detail to Federal Environmental Protection Statutes, Executive Orders, and Memoranda. Reference SECTION 6 - PUBLIC INVOLVEMENT (REQUIRED COORDINATION) and associated appendices including Appendix EIS-G - ENVIRONMENTAL CORRESPONDENCE of this Environmental Statement for further information.

Summary Table A - Comparative Impacts of No Action and Detailed Plans

Evaluation Parameters	No Action (Without Project Conditions)	Site 108 15-Year CDF	Burke East Site 15-Year CDF
<b>Economics B/C</b>			
Federal Share		28,900,000	29,300,000
Non-Federal Share		3,980,000	0
Total		32,880,000	29,300,000
Benefits (Av. An)	N/A	7,896,500	
Costs (Av. An)		4,411,800	
B/C		1.78	NFC
Net Benefits (Av. An)		3,484,700	
<b>Natural Environment Resources</b>			
Air Quality	ST: Not Significant LT: Not Significant	ST: Moderate Adverse LT: Minor Adverse	ST: Moderate Adverse LT: Minor Adverse
Water Quality	ST: Not Significant LT: Not Significant	ST: Moderate Adverse LT: Minor Adverse	ST: Moderate Adverse LT: Minor Adverse
Sediment Quality	ST: Not Significant LT: Not Significant	ST: Moderate Adverse LT: Moderate Beneficial	ST: Moderate Adverse LT: Moderate Beneficial
Benthos/Plankton	ST: Not Significant LT: Minor Adverse	ST: Moderate Adverse LT: Major Adverse Minor Beneficial	ST: Moderate Adverse LT: Major Adverse Minor Beneficial
Fisheries	ST: Not Significant LT: Moderate Beneficial	ST: Moderate Adverse LT: Major Adverse Minor Beneficial	ST: Moderate Adverse LT: Major Adverse Minor Beneficial
Vegetation	ST: Not Significant LT: Not Significant	ST: Minor Adverse LT: Moderate Beneficial	ST: Minor Adverse LT: Moderate Beneficial
Wetlands	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant
Wildlife	ST: Not Significant LT: Not Significant	ST: Moderate Adverse LT: Moderate Adverse Moderate Beneficial	ST: Moderate Adverse LT: Moderate Adverse Moderate Beneficial
Threatened & Endangered Species	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant
<b>Human Environment Man Made Resources</b>			
Community and Regional Growth	ST: Moderate Adverse LT: Major Adverse	ST: Moderate Beneficial LT: Major Beneficial	ST: Minor Beneficial LT: Moderate Beneficial
Displacement of People	ST: Minor Adverse LT: Moderate Adverse	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant
Displacement of Farms	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant
Business/Industry Employment/Income	ST: Moderate Adverse LT: Major Adverse	ST: Moderate Beneficial LT: Major Beneficial	ST: Moderate Beneficial LT: Major Beneficial
Public Facilities and Services	ST: Minor Adverse LT: Moderate Adverse	ST: Moderate Adverse LT: Moderate Beneficial	ST: Minor Adverse LT: Moderate Beneficial
Recreational Resources	ST: Minor Adverse LT: Minor Adverse	ST: Minor Adverse LT: Minor Beneficial	ST: Minor Adverse LT: Minor Beneficial
Property Values and Tax Revenues	ST: Minor Adverse LT: Moderate Adverse	ST: Minor Adverse LT: Minor Beneficial	ST: Minor Adverse LT: Minor Beneficial
Noise and Aesthetics	ST: Not Significant LT: Minor Adverse	ST: Minor Adverse LT: Not Significant	ST: Moderate Adverse LT: Moderate Adverse
Community Cohesion	ST: Moderate Adverse LT: Major Adverse	ST: Minor Adverse LT: Moderate Beneficial	ST: Moderate Adverse LT: Minor Beneficial
Cultural Resources	ST: Not Significant LT: Minor Adverse	ST: Not Significant LT: Not Significant	ST: Not Significant LT: Not Significant

**Key:**

ST: Short Term  
 LT: Long Term  
 N/A: Not Applicable  
 (AA): Average Annual  
 NFC: Not Final  
 Calculated

**Range:**

Major Beneficial  
 Moderate Beneficial  
 Minor Beneficial  
 Not Significant  
 Minor Adverse  
 Moderate Adverse  
 Major Adverse

**Note**

\*Narrative provided in "SECTION 4 - ENVIRONMENTAL EFFECTS" of the ENVIRONMENTAL IMPACT STATEMENT.

Summary Table B - Relationship of Plans to Environmental Protection Statutes and Other Environmental Requirements

	Site 108 15-Year CDF	Burke East Site 15-Year CDF
<u>Federal Statutes</u>		
Archeological and Historic Preservation Act, as amended, 16 USC 469, <u>et seq.</u>	Full	Full
National Historic Preservation Act, as amended, 16 USC 470a, <u>et seq.</u>	Full	Full
Fish and Wildlife Coordination Act, as amended, USC 661, <u>et seq.</u>	Full	Full
Endangered Species Act, as amended, 16 USC 1531, <u>et seq.</u>	Full	Full
Clean Air Act, as amended, 42 USC 7401, <u>et seq.</u>	Full	Full
Clean Water Act, as amended (Federal Water Pollution Control Act), 33 USC 1251, <u>et seq.</u>	Full	Full
Federal Water Project Recreation Act, as amended, 16 USC 460-1(12), <u>et seq.</u>	Full	Full
Land and Water Conservation Fund Act, as amended, 16 USC 4601-11, <u>et seq.</u>	Full	Full
National Environmental Policy Act, as amended, 42 USC 4321, <u>et seq.</u>	Full	Full
Rivers and Harbors Act, 33 USC 401, <u>et seq.</u>	Full	Full
Wild and Scenic Rivers Act, as amended, 16 USC 1271, <u>et seq.</u>	Full	Full
Coastal Zone Management Act, as amended, 16 USC 1451, <u>et seq.</u>	Full	Full
Estuary Protection Act, 16 USC 1221, <u>et seq.</u>	N/A	N/A
Marine Protection, Research and Sanctuaries Act, 22 USC 1401, <u>et seq.</u>	N/A	N/A
Watershed Protection and Flood Prevention Act, 16 USC 1001, <u>et seq.</u>	Full	Full
Farmland Protection Policy Act, (7 USC 4201) <u>et seq.</u>	Full	Full
FAA Notice of Proposed Construction of Alteration	Full	N/A
<u>Executive Orders, Memoranda, Etc.</u>		
Protection and Enhancement of the Cultural Environment (EO 11593)	Full	Full
Flood Plain Management (EO 11988)	Full	Full
Protection of Wetlands (EO 11990)	Full	Full
Environmental Effects Abroad of Major Federal Actions (EO 12114)	Full	Full
Analysis of Impacts on Prime and Unique Farmlands (CEQ memorandum, 30 Aug 76)	Full	Full
Local Land Use Plans	Full	Full

The compliance categories used in this table were assigned based on the following definitions:

- a. Full compliance - All requirements of the statute, EO, or other policy and related regulations have been met for this stage of the study.
- b. Partial Compliance - some requirements of the statute, EO, or other policy and related regulations, which are normally met by this stage of planning, remain to be met.
- c. Noncompliance - None of the requirements of the statute, or other policy and related regulations have been met.
- d. N/A - The statute, EO, or other policy and related regulations are not applicable for this study.

FINAL

ENVIRONMENTAL IMPACT STATEMENT

HARBOR MAINTENANCE AND CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CLEVELAND HARBOR, CUYAHOGA COUNTY, OHIO

ABSTRACT  
SUMMARY

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EIS-G	ENVIRONMENTAL CORRESPONDENCE
EIS-H	COMMENT/RESPONSE ON THE DRAFT LETTER REPORT AND DRAFT EIS

## SECTION 1 - NEED FOR AND OBJECTIVES OF THE ACTION

### INTRODUCTION

1.01 This section briefly describes how the Corps of Engineers became involved in the study and what government and public concerns and subsequent planning objectives were identified as a basis for plan formulation.

### STUDY AUTHORITY

1.02-1.04 The existing Federal navigation project at Cleveland, Ohio was authorized by the Rivers and Harbors Acts of 1875, 1886, 1888, 1899, 1902, 1907 and 1910. The 1937 Rivers and Harbors Act made the maintenance of the channels in the Cuyahoga and Old Rivers to a depth of 21 feet a Federal responsibility. All subsequent legislation has made maintenance of all channels in Cleveland Harbor a Federal responsibility. Since the new confined disposal facility is to be constructed under operations and maintenance authority the original project authority applies, which are the River and Harbors Acts of 1946, 1958, 1960 and 1962.

### PROBLEMS AND NEEDS

1.05 Cleveland Harbor, Ohio is located at the mouth of the Cuyahoga River on the south shore of Lake Erie. By water, the port is approximately 176 statute miles west of Buffalo Harbor, New York and approximately 96 miles East of Toledo Harbor, Ohio. Reference Figure 1. Cleveland Harbor navigation features are shown on Figures 2, 3, and 4. Federal navigation channels in the Cleveland Harbor area include the Cleveland Outer Harbor, the Old River Channel, and the Cuyahoga River Channel. The currently utilized CDF Site 14 is located adjacent to the eastern end of the Outer Harbor.

1.06 Navigation features provide protection and facilitate shipments of commercial commodities into, out of, and around Cleveland Harbor. They also provide protection and facilitate docking and movement of recreation vessels in and around Cleveland Harbor.

1.07 The U.S. Army Corps of Engineers, Buffalo District is responsible for maintaining Federal navigation facilities at Cleveland Harbor (U.S. River and Harbor Act, as amended). Generally, these activities involve maintenance of Federal breakwater facilities and dredging and disposal of dredged material from Federal navigation channels.

1.08 Over time, breakwater sections can become dislodged due to severe wave action, deterioration, and/or settling. This requires periodic replacement of stone or concrete material to restore breakwaters to design specifications and to maintain their structural integrity.

1.09 Silt from the area watersheds and shoreline gradually fill in sections of Cleveland Harbor navigation channels. The channels need to be dredged to maintain commercial and recreational navigation.



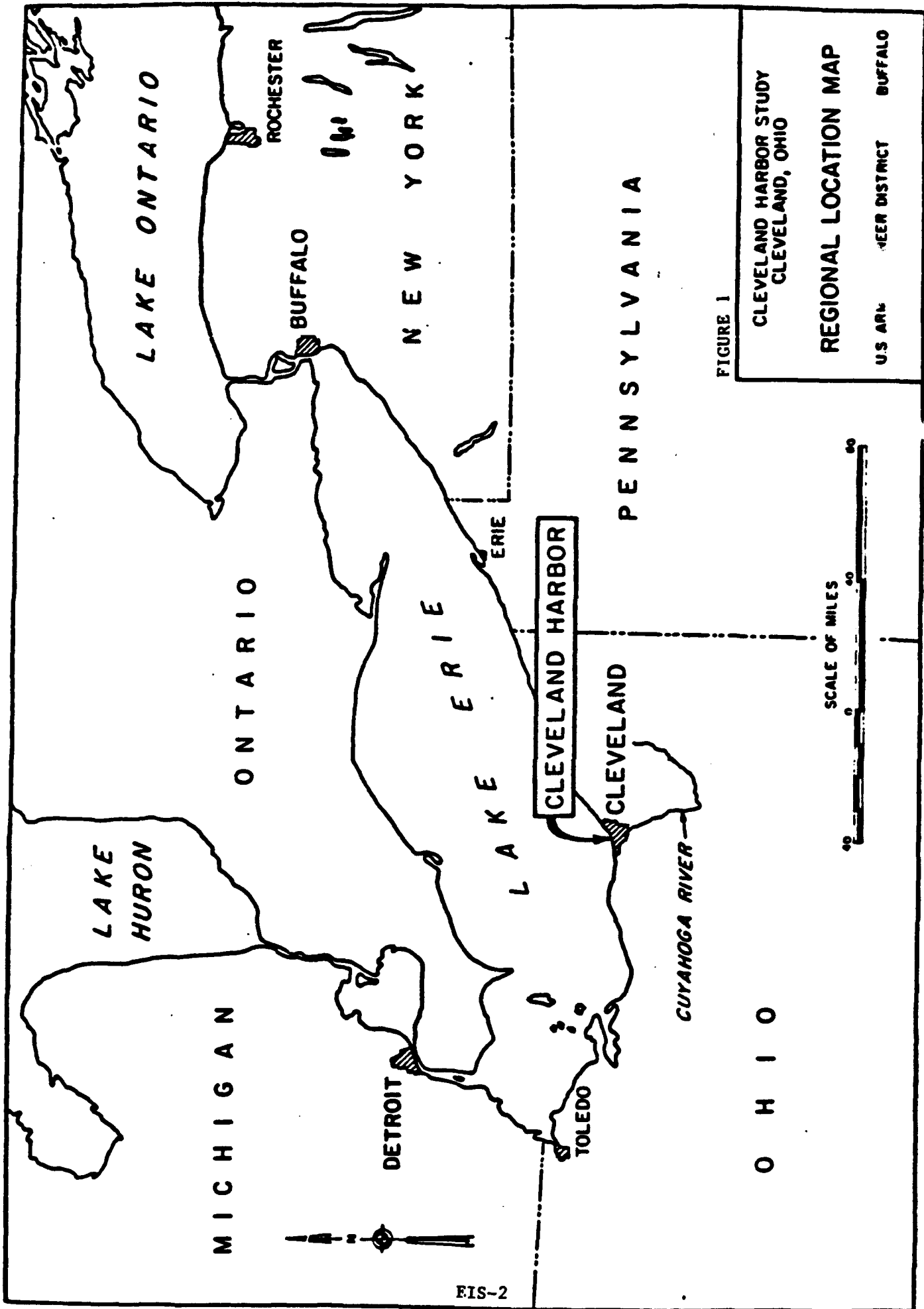


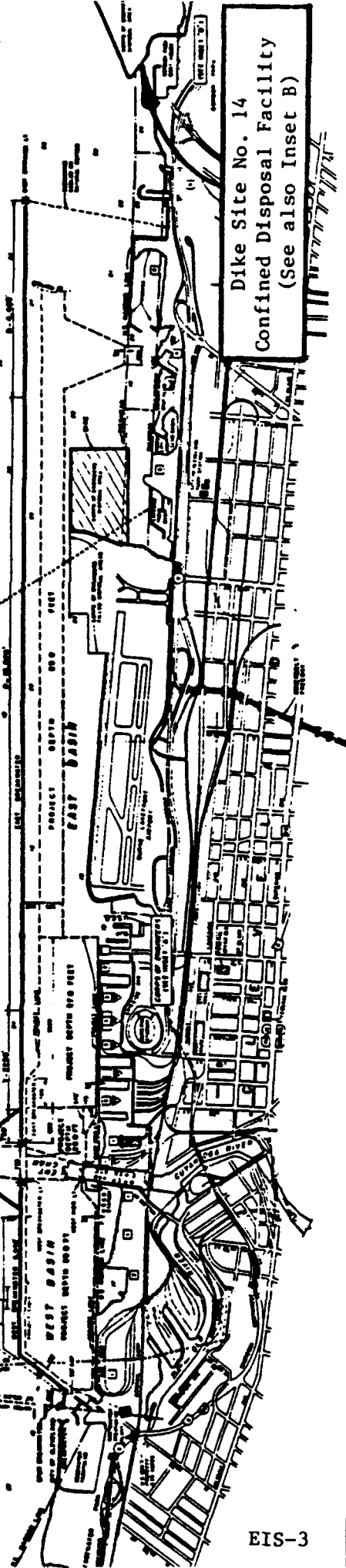
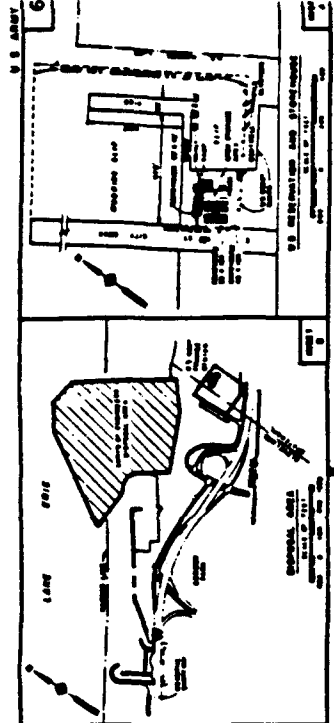
FIGURE 1

CLEVELAND HARBOR STUDY  
CLEVELAND, OHIO

REGIONAL LOCATION MAP

U.S. ARMY ENGINEER DISTRICT BUFFALO

COOPS OF ENGINEERS



EIS-3

**WATERFRONT OWNERSHIP**  
 (See map 041)

- 1. FEDERAL GOVERNMENT
- 2. CITY OF CLEVELAND
- 3. CLEVELAND ELECTRIC, LIGHT AND POWER CO.
- 4. CLEVELAND ELECTRIC, LIGHT AND POWER CO.
- 5. CLEVELAND ELECTRIC, LIGHT AND POWER CO.

DATE: 11/19/69

THIS IS OUTER HARBOR SECTION  
 (SEE CLEVELAND MAPS SECTION, SEE MAP 041)

**NOTES**

PROJECT SHOWS THE PROPOSED AND EXISTING  
 LAKES AND BASINS, DIKES AND OTHER  
 STRUCTURES. THE PROPOSED STRUCTURES  
 ARE SHOWN WITH DASHED LINES.

- (1) EXISTING DIKE
- (2) PROPOSED DIKE
- (3) EXISTING BASIN
- (4) PROPOSED BASIN
- (5) EXISTING STRUCTURE
- (6) PROPOSED STRUCTURE

**FIGURE 2**  
**CLEVELAND HARBOR**  
**OHIO**  
 U.S. ARMY ENGINEER DISTRICT OFFICE

INDEX TO BRIDGES

- 1. COUNTY
- 2. STATE
- 3. COUNTY
- 4. COUNTY
- 5. COUNTY
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- 7. COUNTY
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- 9. COUNTY
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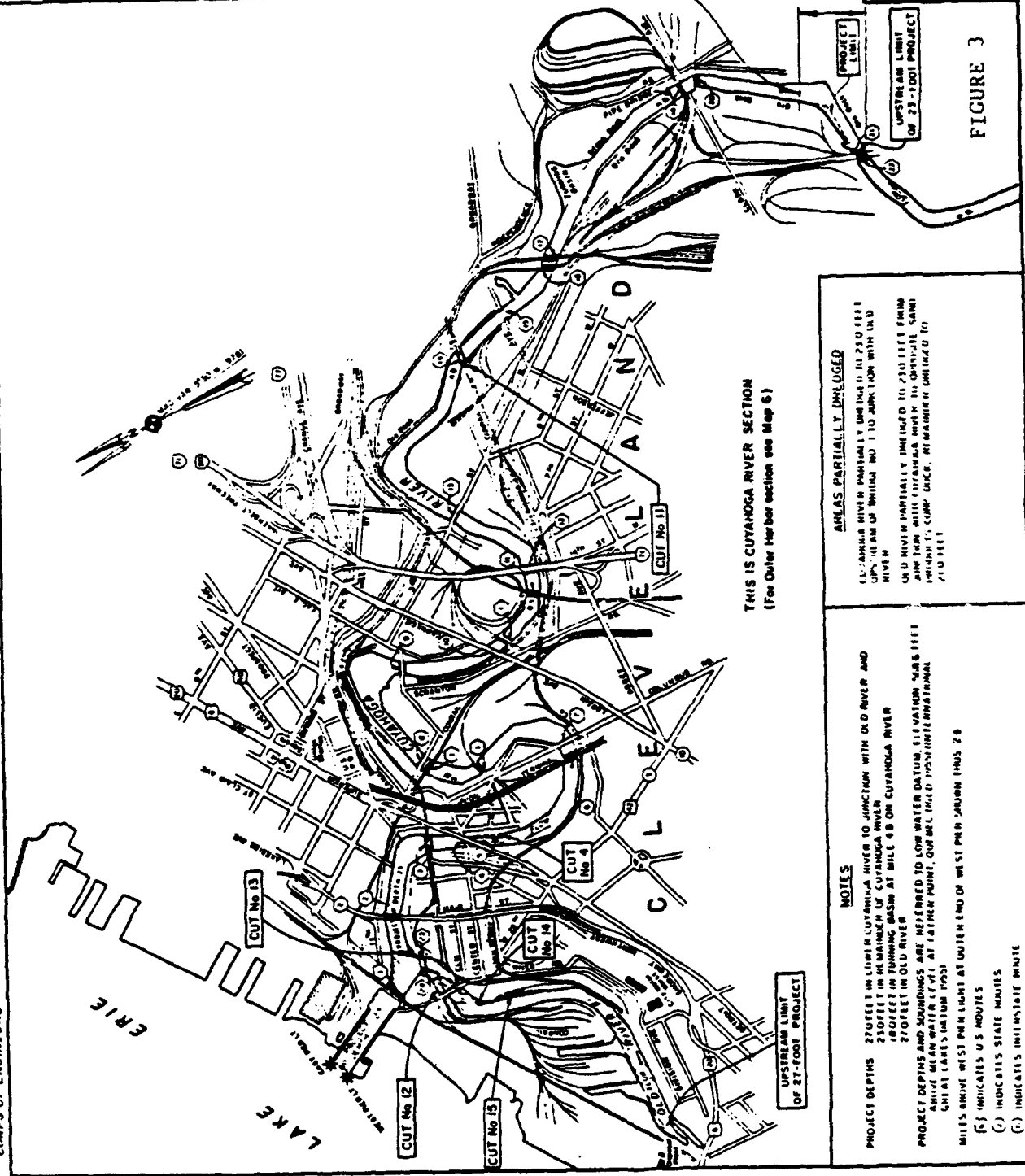
Approximate Station 807+00

Channel Reach of Sand Material

CLEVELAND HARBOR OHIO

SCALE OF FEET  
U S ARMY ENGINEER DISTRICT BUFFALO  
30 SEPTEMBER 1959

FIGURE 3



THIS IS CUYAHOGA RIVER SECTION  
(For Outer Harbor section see Map 6)

**AREAS PARTIALLY DREDGED**

CUYAHOGA RIVER PARTIALLY DREDGED TO 25.0 FEET UPS TO AB OF BRIDGE NO 1 TO JUNCTION WITH OLD RIVER

OLD RIVER PARTIALLY DREDGED TO 25.0 FEET FROM JUNCTION WITH CUYAHOGA RIVER TO BRIDGE NO 1. CHANNEL DEPTH REMAINS UNCHANGED TO 21.0 FEET

**NOTES**

PROJECT DEPTHS 27 FEET IN LOWER CUYAHOGA RIVER TO JUNCTION WITH OLD RIVER AND 25 FEET IN REMAINDER OF CUYAHOGA RIVER

PROJECT IN TURNING BASIN AT MILE 4.8 ON CUYAHOGA RIVER 27 FEET IN OLD RIVER

PROJECT DEPTHS AND SHADINGS ARE REFERRED TO LOW WATER DATUM. ELEVATION MARKS FEET ABOVE MEAN WATER LEVEL AT FATHOM POINT, CUYAHOGA RIVER, CLEVELAND, OHIO (1929)

MILES ABOVE WEST PIER LIGHT AT OUTER END OF WEST PIER SARON INUS 2.0

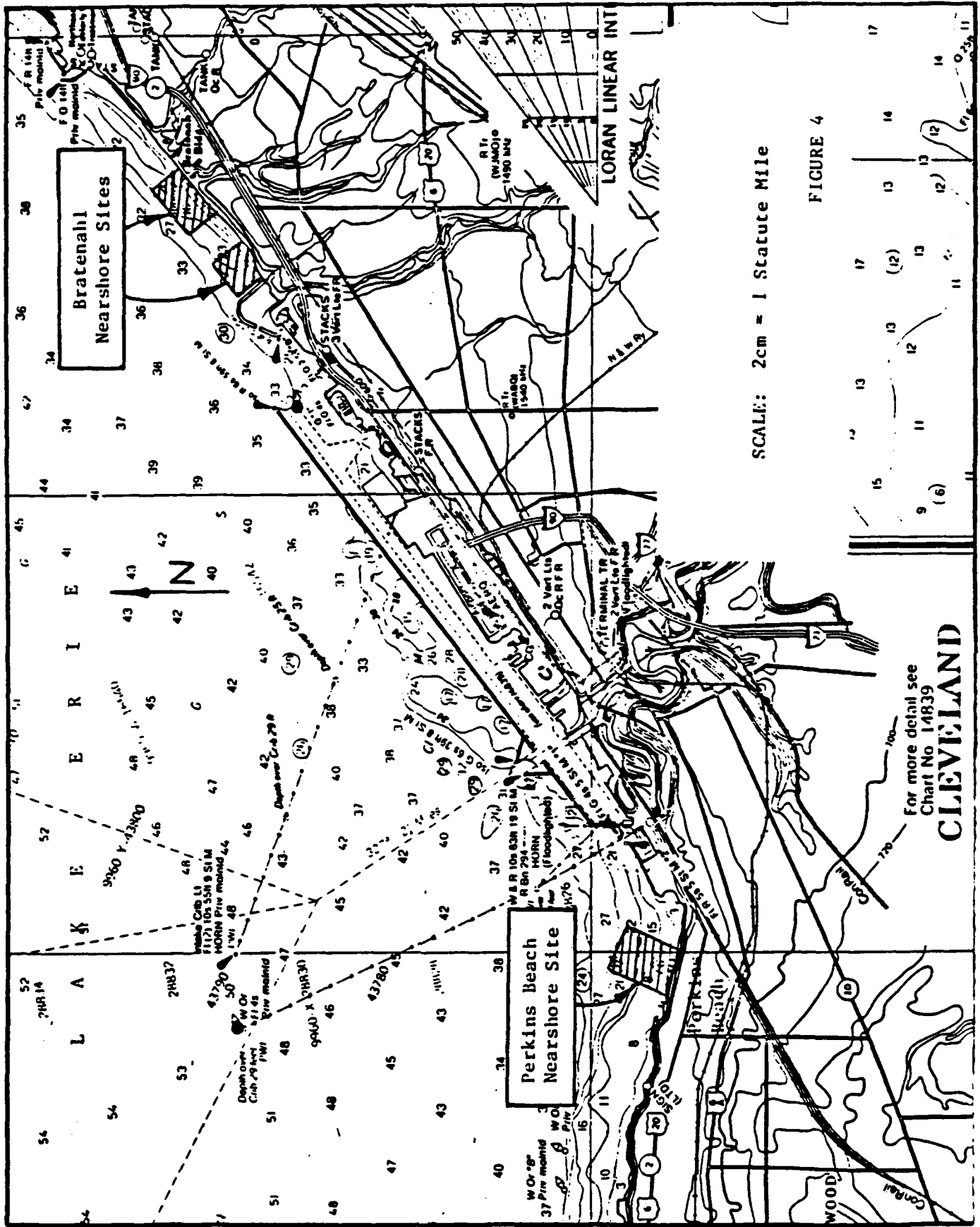
(S) INDICATES U.S. ROUTES

(C) INDICATES STATE ROUTES

(P) INDICATES INTERSTATE ROUTES

CORPS OF ENGINEERS

FIGURE Nearshore discharge sites for Cuyahoga River dredged material.



1.10 Sediments from the Cleveland Harbor Federal navigation channels are periodically sampled and analyzed for pollutants (approximately every 5 years). The most recent tests conducted in 1986 show that harbor and most river channel sediments continue to be polluted with heavy metals and oil and grease. Figures 5A and 5B show the location of the sample sites referenced in Table 1. Table 1 summarizes testing for samples taken from the river and harbor Federal channels in 1986.

1.11 The upper end of the river navigation channel contains sandy material and is somewhat cleaner. The testing of samples taken from the upper limit of this sector in 1990, as shown in Figure 6 and summarized in Table 2, indicates non or low contamination. This material may be used for local beach nourishment. Reference Figure 4. The Buffalo District, in coordination with USEPA and Ohio EPA has determined that with the exception of this sandy material, sediments dredged from Federal navigation channels in Cleveland Harbor are not suitable for unrestricted open-lake disposal and must be disposed of by alternative measure.

1.12 Annual maintenance dredging is performed in the Cleveland Federal navigation channels. An average annual volume of 504,000 cubic yards has historically been dredged to maintain authorized project drafts. However, in the 13 years since 1980, the average dredged volume which has to be contained or disposed of by alternative measures has decreased to about 300,000 (234,000 consolidated) cubic yards.

1.13 One CDF site is currently used to accommodate discharge of dredged polluted sediments from the Cleveland Harbor Federal project area. The most recently built site (Site 14 CDF) is an 88-acre area located directly west of the village of Bratenahl-Cleveland city line and adjacent to Gordon Park and the U.S. Navy Finance Center at Bratenahl. The irregularly shaped discharge area is bounded on the southeast by the Cleveland shoreline and on all other sides by Lake Erie. The stone rubblemound containment structure has a variable bottom width, a top width of 18.5 feet and elevation of 14 feet above Low Water Datum (LWD)\*, 1 vertical to 1.5 horizontal sideslopes, and a core which includes a wall of vertically driven steel sheet piling. The estimated total capacity of the Site 14 CDF, when constructed, was 6,130,000 cubic yards. Under the current dredging and discharge procedures, the remaining life of the existing CDF is only 3 years±. A new CDF and/or alternate measures are needed to facilitate continued dredging and disposal of dredged polluted material at Cleveland Harbor.

1.14 The Cuyahoga River has been designated as a Great Lakes Area of Concern (AOC) by the International Joint Commission (IJC) because of past development and associated pollution problems. The area of concern includes the lower portion of the river up to the Akron wastewater treatment plant, the ship canal, and the nearshore area inside the harbor breakwater. Problems include municipal, industrial, and urban and agricultural run-off pollution which have affected many desirable human and fish and wildlife uses of the

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\* Low water datum (LWD) for Lake Erie is 568.6 feet above mean water level at Father Point, Quebec, Canada.

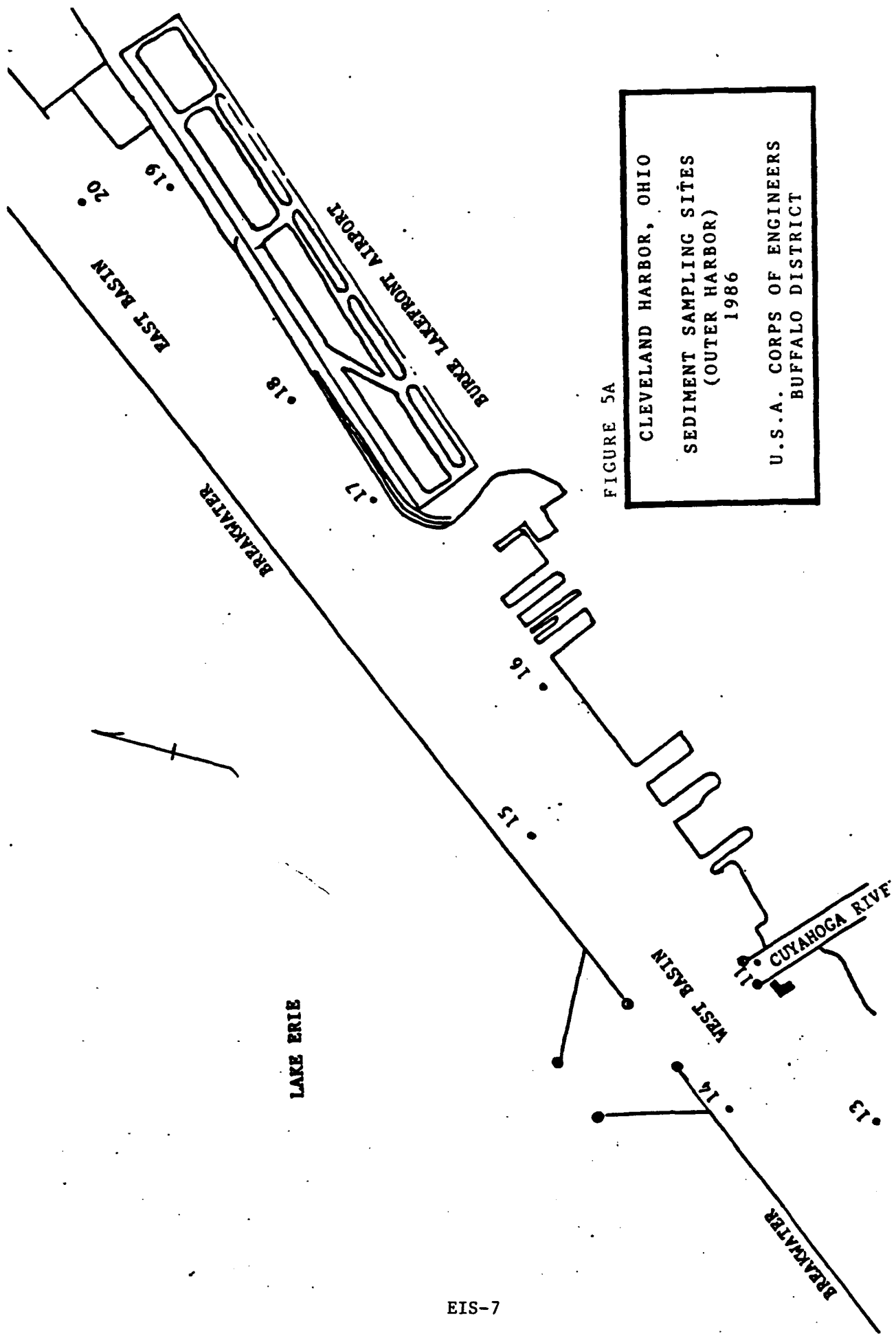


FIGURE 5A

CLEVELAND HARBOR, OHIO  
 SEDIMENT SAMPLING SITES  
 (OUTER HARBOR)  
 1986  
 U.S.A. CORPS OF ENGINEERS  
 BUFFALO DISTRICT

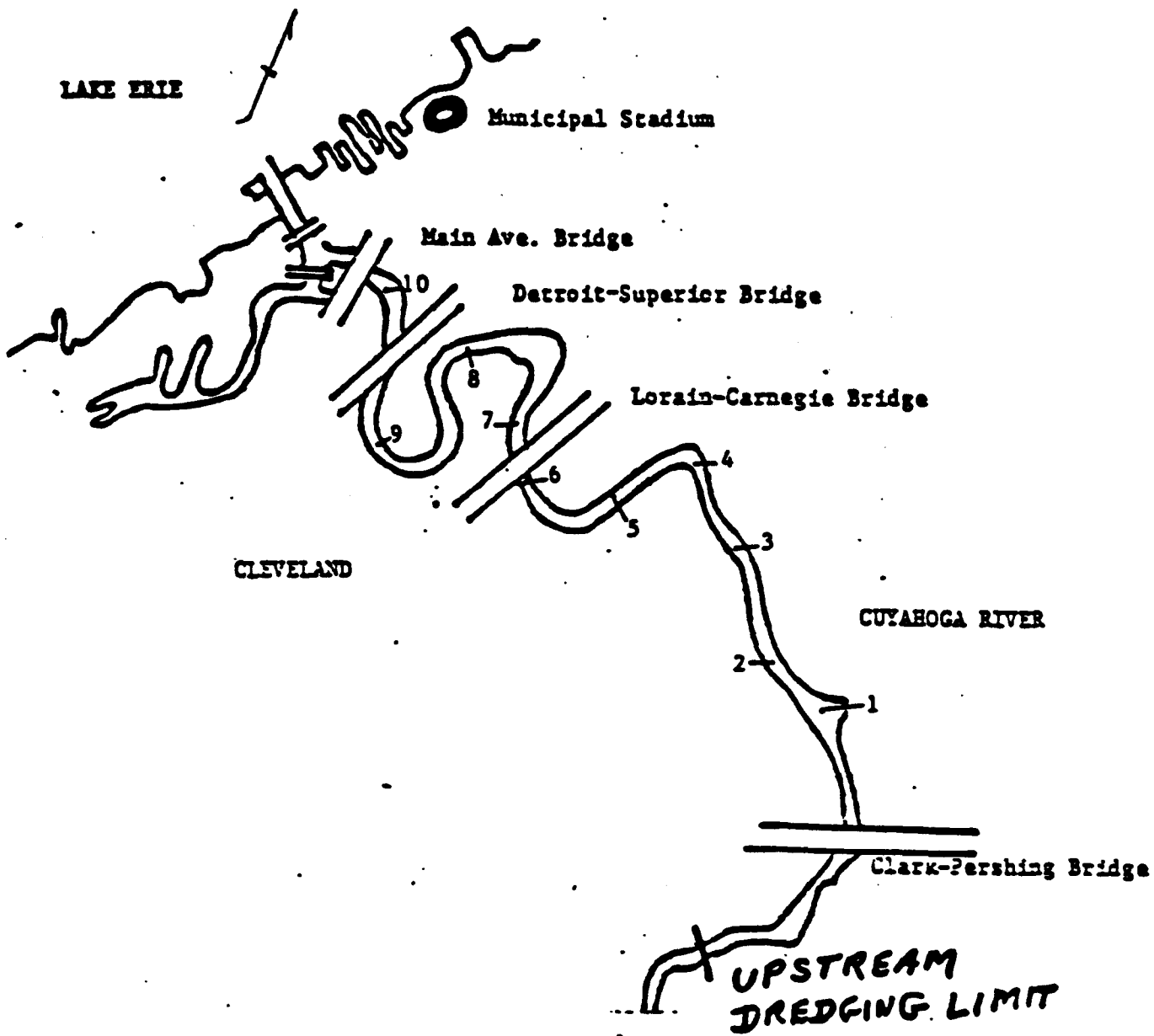


FIGURE 5B

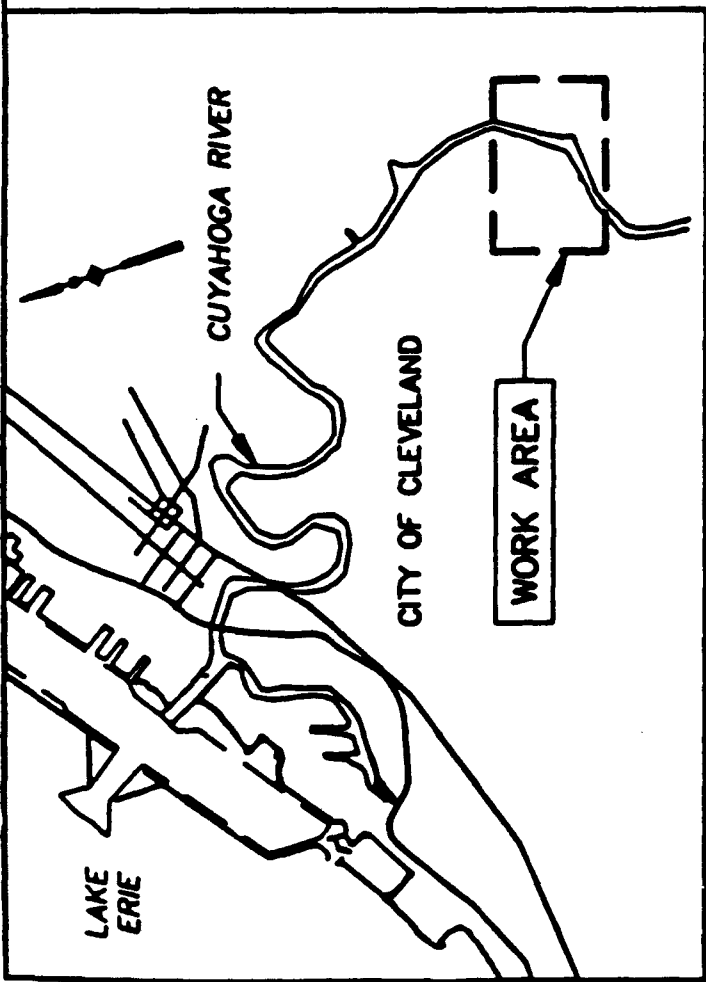
CLEVELAND HARBOR, OHIO  
 SEDIMENT SAMPLING SITES  
 (CUYAHOGA RIVER)  
 1986  
 U.S.A. CORPS OF ENGINEERS  
 BUFFALO DISTRICT

Table I. Bulk chemical analyses conducted on sediments from Cleveland Harbor (Inorganic Parameters), (1986)

SITE	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-13	C-14	C-15	C-16	C-17	C-18	C-19	C-20
RESIDUE, TOTAL (TS), %	56.6	56.6	52.6	56.6	56.4	53.5	53.1	51.1	49.9	55.9	56.9	67.4	45.8	54.5	51.4	39.9	36.0	38.2
NITROGEN, T, VOLATILE, %	6.24	6.67	6.69	6.32	5.68	7.12	4.03	6.49	6.21	6.02	5.32	2.11	4.46	3.48	6.69	6.28	6.53	6.34
NITROGEN, AMMONIA, N, MG/EG	411	612	348.	183	249	255	223	258	224	242	130	251	254	235	479	232	304	208
TOTAL ELFDIAEL N, TEB, MG/EG	1390	1620	1810	2230	2020	3650	1610	1850	1400	1260	1025	943	1250	1290	1380	1460	1730	1690
PHOSPHORUS, TOTAL, P, MG/EG	911	974	1100	842	980	1220	948	1070	1240	1340	433	1610	1130	926	1500	1300	1470	1430
ARSENIC, TOTAL, AS, MG/EG	13	17	12	13	15	15	11	15	16	11	7.8	11	10	14	13	12	13	16
BARIUM, TOTAL, BA, MG/EG	87	94	99	71	100	100	77	47	92	80	65	72	78	79	100	79	87	94
CADMIUM, TOTAL, CD, MG/EG	6	6	7	6	6	8	6	6	8	6	1.2	6	7	5	9	9	12	10
CHROMIUM, TOTAL, CR, MG/EG	68	68	78	47	55	77	43	52	69	45	12	30	60	60	42	61	77	74
COPPER, TOTAL, CU, MG/EG	84	77	87	65	77	98	67	76	85	75	28	50	70	58	80	79	68	82
IRON, TOTAL, FE, MG/EG	24350	31200	30300	27900	30700	26300	28500	28900	33800	27600	20800	33200	27800	27700	27300	29100	31800	29900
LEAD, TOTAL, PB, MG/EG	120	120	130	98	130	170	110	100	340	100	26	71	88	81	120	120	130	110
MANGANESE, TOTAL, MN, MG/EG	350	360	400	350	380	380	340	350	440	370	360	420	380	350	570	520	590	600
MERCURY, TOTAL, HG, MG/EG	0.26	0.26	0.23	0.25	0.27	0.46	0.21	0.28	0.73	0.63	0.76	0.28	0.25	0.22	0.32	0.38	0.44	0.31
NICKEL, TOTAL, NI, MG/EG	65	68	75	63	71	79	68	78	73	53	37	42	51	41	54	57	65	61
SILVER, TOTAL, AG, MG/EG	2	2	2	2	2	2	2	2	2	2	1	2	1	2	2	3	3	2
ZINC, TOTAL, ZN, MG/EG	830	680	870	630	650	750	520	720	850	470	110	310	450	380	550	480	570	500
COO, MG/EG	40800	41100	60700	46700	49500	487000	39600	50900	44800	39500	22000	18600	43700	23000	33900	53900	49200	46000
CYANIDE, TOTAL, CN, MG/EG	1.4	1.7	1.8	1.3	1.4	1.3	2.1	1.3	1.4	1.1	0.7	0.8	1.6	1.2	1.3	1.8	3.2	1.6
OIL/GELASE, MG/EG	4200	4400	5200	5400	5100	6700	4800	4700	5400	3800	920	1800	3600	2700	3400	3900	4000	3300
PERNOLS, 4-AAP, MG/EG	0.67	0.67	0.67	0.66	0.4	0.46	0.4	0.28	0.63	0.3	0.47	0.13	0.08	0.1	1.1	0.69	0.18	0.15

TABLE I  
CLEVELAND HARBOR, OHIO  
SEDIMENT SAMPLING SITE RESULTS  
(INORGANIC PARAMETERS)  
1986  
U.S.A. CORPS OF ENGINEERS  
BUFFALO DISTRICT





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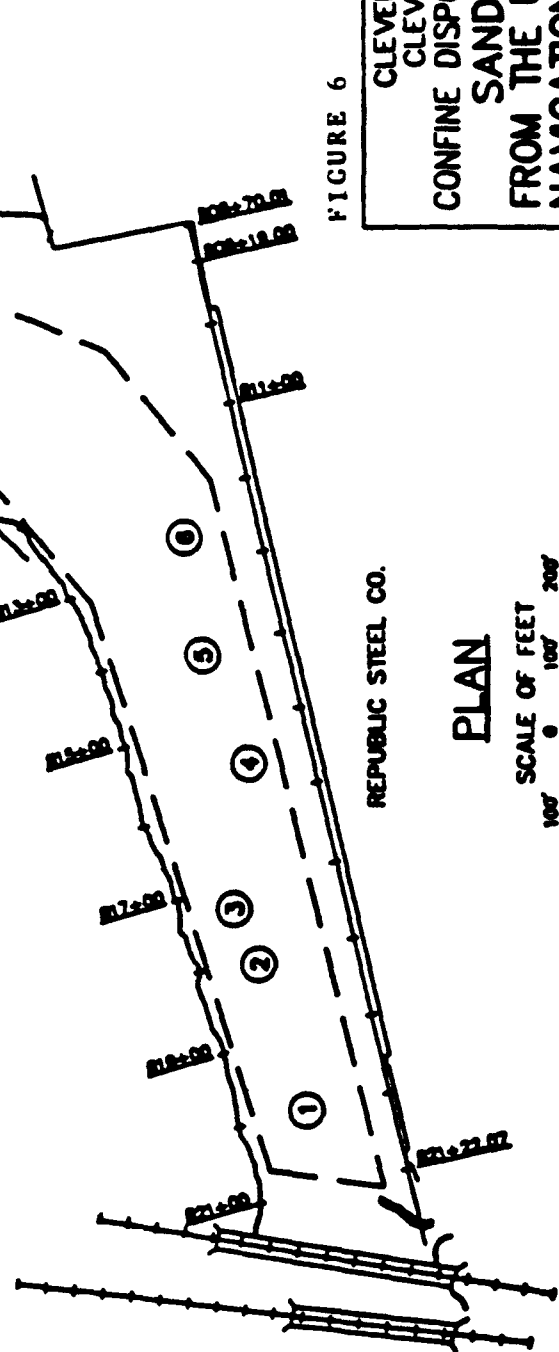


FIGURE 6

CLEVELAND HARBOR  
 CLEVELAND, OHIO  
 CONFINE DISPOSAL FACILITY STUDY  
 SAND SAMPLING  
 FROM THE UPPER CUYAHOGA  
 NAVIGATION CHANNEL 1990  
 U.S. ARMY ENGINEER DISTRICT BUFFALO

X

TABLE 2. BULK CHEMICAL ANALYSES. INORGANIC PARAMETERS. UPPER CUYAHOGA (1990)

	1	3	4	5	6
SITE NO.	9	8	19	13	7
ARSENIC, TOTAL, AS, MG/KG	33	31	72	43	26
BARIUM, TOTAL, BA, MG/KG	1	2	1	1	1
CADMIUM, TOTAL, CD, MG/KG	12	11	21	14	13
CHROMIUM, TOTAL, CR, MG/KG	55	175	61	100	34
COPPER, TOTAL, CU, MG/KG	20	45	53	36	35
LEAD, TOTAL, PB, MG/KG	0.08	0.13	0.22	0.13	0.11
MERCURY, TOTAL, HG, MG/KG	32	25	31	28	18
NICKEL, TOTAL, NI, MG/KG	200	370	210	620	350
PETROLEUM HYDROCARBONS, MG/KG	2.15	2.10	5.53	4.53	2.35
RESIDUE, T. VOLATILE, †	79.5	75.7	51.9	64.0	75.9
RESIDUE, TOTAL (TS), ‡	250	370	320	230	255
ZINC, TOTAL, ZN, MG/KG	<0.10	<0.10	<0.10	<0.10	<0.10
PCB's MG/KG					

CLEVELAND HARBOR, OHIO  
 SEDIMENT SAMPLING SITE RESULTS  
 (INORGANIC PARAMETERS)  
 UPPER CHANNEL 1990  
 U.S.A. CORPS OF ENGINEERS  
 BUFFALO DISTRICT

river (i.e., aesthetics, fishing, boating, swimming, habitat, etc.). Although dramatic progress has been made to clean-up the lower part of the river, many problems still exist on the lower and mid portions of the river.

1.15 The Ohio Environmental Protection Agency (OEPA) is responsible for ensuring development of a Remedial Action Plan (RAP) for the Cuyahoga River. As possible, the RAP program is working to:

- Significantly limit or eliminate sources of pollution (point, non-point);
- Clean up and/or contain residual pollution from past developments;
- Restore aquatic and terrestrial habitat quality.

Some RAP measures have been underway for some time (often independently) (i.e., pollution control regulations, improvements to sewage treatment plants, and combined overflows, sedimentation reduction, etc.), while some continue to be examined (identification, treatment, and/or containment of past residual pollutants; dredging, treatment, and disposal of sediments; habitat restoration; etc.). The Corps of Engineers, Buffalo District maintenance dredging and appropriate disposal of dredged polluted material may, in part, be associated with the RAP program and objectives. The Corps of Engineers is also involved in support to other Clean Water Act - Great Lakes associated programs such as Assessment and Remediation of Contaminated Sediments (ARCS) program (1988) and the Great Lakes Critical Program Act (1990), etc.

#### PLANNING OBJECTIVES

1.16 The Federal objective of water and related land resources project planning is to contribute to National Economic Development (NED) consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements.

1.17 Project objectives which were derived from resource management needs and utilized in plan formulation for the project vicinity include:

a. To provide continued operation and maintenance of Federal navigation features at Cleveland Harbor in order to provide for associated commerce and recreational needs and to contribute to community economic and social well-being;

b. To contribute toward protection of the water quality of Cleveland Harbor, Lake Erie and the Great Lakes, by confining dredged polluted sediments in order to contribute toward protecting environmental quality and social well-being of the area;

c. To contribute toward conserving the fish and wildlife resources in the project vicinity, in order to help maintain natural environmental quality; and

d. To preserve, as necessary, cultural resources in the project vicinity in order to protect the cultural heritage of the project vicinity.

## SECTION 2 - ALTERNATIVE CONSIDERATIONS AND THE RECOMMENDED PLAN

### INTRODUCTION

2.01 This section briefly summarizes alternative considerations, and assessment and evaluation of the most feasible alternative plans. Reference corresponding sections of the main report for a more detailed discussion of these plans.

#### NO ACTION (WITHOUT PROJECT CONDITIONS)

2.02 No Action indicates that the Corps of Engineers acting for the Federal Government could take "no-action" based on an evaluation of the problems and possible alternative solutions, as directed by the study authority and Federal planning guidelines. Without project conditions would be anticipated with this alternative. The No Action (Without Project Conditions) alternative is always a possibility and serves as the basis of comparison by which other possible alternatives may be compared.

2.03 If no plan is implemented to address future dredging and appropriate disposal of dredged polluted material, it is possible that dredging will be severely limited or discontinued. Polluted sediments which silt/shoal into the navigation channels would remain in-place in the river and harbor bottom environment. Discontinuance of dredging would likely result in the closure of many harbor-dependent businesses and would also have significant short-term and long-term adverse effects on both Cleveland and the regional economy. Existing land use would likely deteriorate in the short-term and be altered in the long-term.

#### PLANS ELIMINATED FROM FURTHER STUDY

2.04 In addition to the No Action alternative, an array of alternative measures were considered pertaining to dredging and disposal of dredged polluted material from Cleveland Harbor. Alternatives were evaluated for basic engineering and economic feasibility, and environmental and social acceptability, and/or their contributions toward accomplishing developed planning objectives.

2.05 Alternatives which were initially considered but were eliminated from further consideration for this study include the following:

2.06 Pollution Control. Appropriate Federal and State agencies have made considerable progress in point, non-point, and residual pollution control over the last few decades. All require continued and long-term efforts, however. It is expected that eventually, sediments dredged from Cleveland Harbor will be relatively nonpolluted. Although this is an on-going program and is expected to be beneficial relative to dredging and disposal of dredged material in the future, alternative measures will need to be utilized to address dredging and disposal of dredged polluted material in the near future. Also reference paragraphs 1.14 and 1.15 pertaining to the Cuyahoga River Area of Concern and Remedial Action Plan (RAP).

2.07 Upstream Erosion Control. Much of the sediment deposited in Cleveland Harbor originates from land erosion/runoff. Some reduction in the quantity of sediments can be achieved through more effective erosion-abatement procedures in agriculture, forestry, and construction in the Cuyahoga River Watershed. This measure however, involves several agencies, and like pollution control, will require continued and long-term efforts. In addition, an effective program of erosion control and the necessary educational program to implement such a plan will require new or revised legislation, time, and funding which are not now available.

2.08 A number of cooperative effort water resources basin studies were coordinated by the Corps of Engineers, primarily in the 1970s and early 1980s. Two studies which include the Cuyahoga River basin area were the Lake Erie Basin Resource Management Study (1979) and the Cuyahoga River Basin Restoration Study (Interim, 1971). These studies investigated various water resource problems and needs in the basins in order to develop a long-term framework plan. Many of the considered measures and recommendations have been pursued, as possible, by the various agencies within their authority, mission, and available resources (i.e., soil conservation, erosion protection, flood damage reduction, navigation, conservation, recreation, land use planning, water quality, etc.). However, while study funding and accomplishment may be one thing, accomplishment of actual programs/measures/projects within available agency authority, mission, and available resources (including funding) is much more complicated and difficult, and is becoming increasingly difficult.

2.09 The Cuyahoga River Basin Restoration Study identified potential erosion protection measures for the watershed. Pursuit of the considered streambank protection measures could not be approved by the Corps higher authority because the measure purpose is considered to be outside the authority, mission, and resources of the Corps and would not meet Corps erosion protection project criteria. The measures were considered to be more within the authority and mission of the Department of Agriculture - Soil Conservation Service. Unless Corps erosion protection authority is expanded or a special exception is directed (within other legal limits) from higher authority, implementation of such measures by the Corps is not possible.

2.10 On a more positive note, a number of on-going and potential future programs contribute toward this effort. For example: The U.S. Department of Agriculture - Soil Conservation Service is working with farmers/land owners to implement a "Best Management Plan" program (by 1996), which in part would include land management measures that would help reduce soil loss/run-off. The (FEMA) National Flood Insurance Program floodplain management measures will continue to contribute toward this effort. The (USEPA) National Pollutant Discharge Elimination System for Storm Water Discharges program will contribute toward this effort. The Corps of Engineers Rivers and Harbors Act and Clean Water Act permit authority pertaining to construction or fill in navigable waters and U.S. Waters (respectively) will continue to contribute toward this effort. Of note, the Corps of Engineers, Buffalo District is coordinating (in conjunction with numerous other agencies and interests) a specially authorized pilot study for long-term management of dredging and disposal of dredged material for Toledo Harbor, Ohio. This more extensively pursues alternative measures other than construction and use of new confined

disposal facilities (CDFs), including consideration of Sediment Load Reduction measures (i.e., Non-Structural: crop residue management, conservation cropping sequence, alternative crops; Structural: streambank erosion protection, filter strips, grassed waterway, wetland creation/sedimentation ponds, agricultural run-off retention reservoir). Findings will likely further potential measures for other areas.

2.11 Some progress in this regard may be evident over the last few decades via erosion reduction programs, land use changes, or probably both. Over the last few decades, the amount of material dredged from Cleveland Harbor has been reduced from about 500,000 cubic yards to 300,000 cubic yards on an average annual basis.

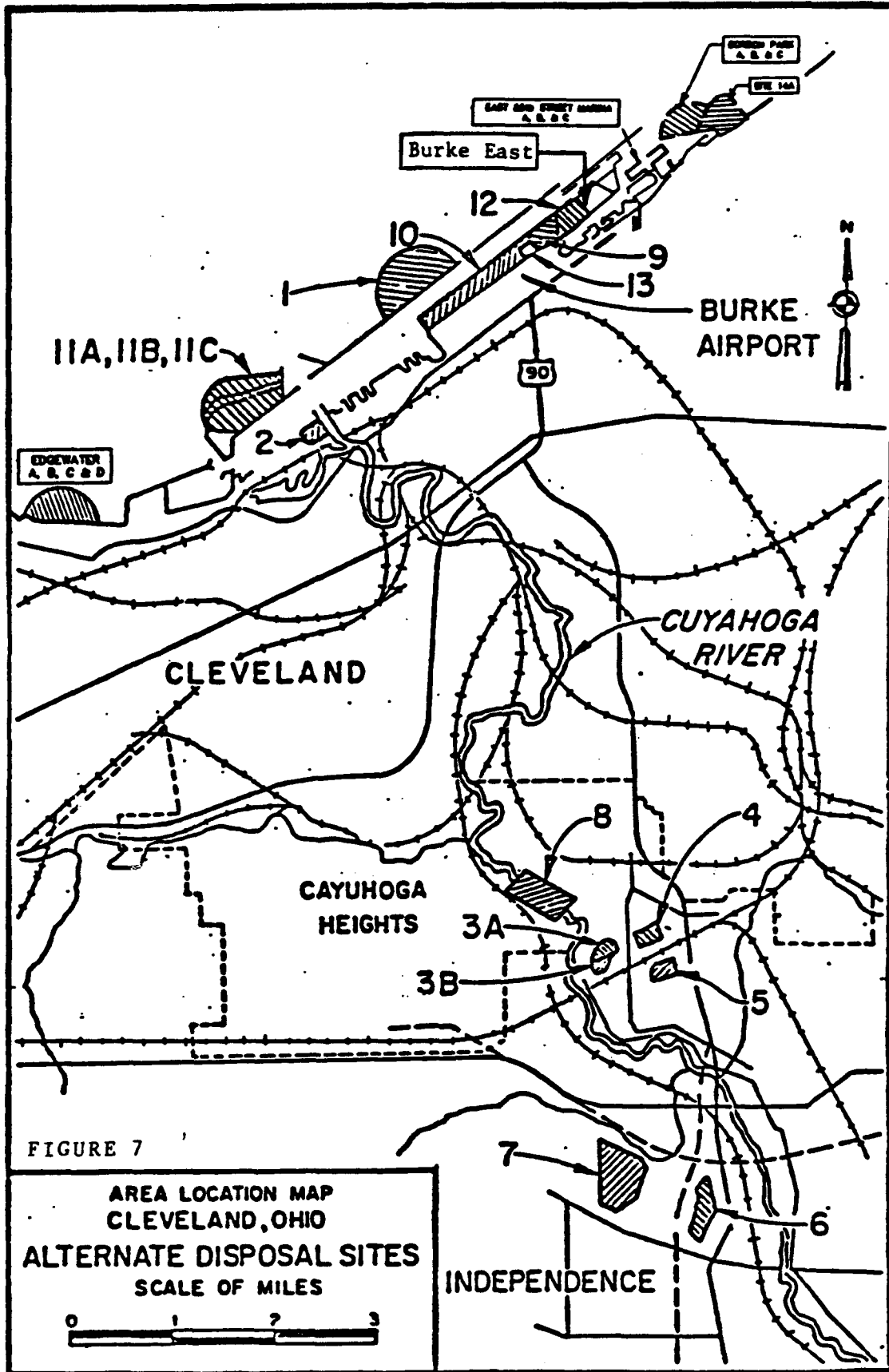
2.12 Although this is an on-going program and is expected to be beneficial relative to dredging and disposal of dredged material in the future, alternative measures will need to be utilized in the near future.

2.13 Open-Lake Discharge. In the past, most sediments dredged from harbors were discharged at open-lake disposal sites. With the passage of the Clean Water Act and associated legislation, polluted sediments have been restricted from open-lake discharge. The U.S. Army Corps of Engineers, Buffalo District, in coordination with the U.S. Environmental Protection Agency and Ohio EPA has determined that - with the exception of some sandy material which accumulates at the upstream limit of the Cuyahoga River Channel that may be used as beach nourishment material - sediments dredged from Federal navigation channels at Cleveland Harbor are not suitable for unrestricted open-lake discharge. This situation is expected to continue for some time into the future.

2.14 Upland Confined Disposal Facilities and/or Alternate Use. Potential disposal sites to be considered were identified via past studies and further coordination with Federal, State, and local interests. Sites which were identified for these studies are generally located on Figure 7.

2.15 Upland and/or alternate use measures pertain to utilizing freshly or previously dredged and untreated or treated dredged material for uses such as: land fill, land fill cover, wetland creation, or agricultural soil mix. These measures were considered, but were eliminated from further consideration in this study for a number of reasons, including the following:

2.16 Cleveland is a developed metropolitan area. No upland sites that would be appropriate for development of a disposal area have been identified in the immediate harbor area. Some sites that were considered are a considerable distance from the harbor. Transportation of material to these sites via pipeline or truck would be very costly. Site acquisition (real estate) and preparation would also be required. Site capacities are usually a problem. Additionally, there are local concerns about disruption to the community, dredged material spillage, damage to roads, location of a discharge site in the midst of the community, odors, aesthetics, health and safety, land use conflicts (wetlands, soils, developments), and potential or perceived groundwater contamination concerns.



2.17 Currently, upland and/or alternate use measures are more acceptable using minimally polluted dredged material. Dredged material from Cleveland Harbor generally remains substantially polluted. There are a number of on-going programs to investigate beneficial uses of dredged material and environmental effects of the use of dredged material. These programs also include investigation of potential processes to eliminate or reduce contaminants from the sediments (i.e., thermal, chemical, biological, solidification, etc.). However, at this time, practical application of these measures is very limited. Additionally, at this time, centralized containment (confined disposal facility) is more reassuring than distribution for various uses throughout the area.

2.18 As mentioned previously, some sandy, relatively unpolluted sediments dredged from the upper Cuyahoga River channel are used for littoral/beach nourishment. Use of dredged material for wetland creation has been considered in the Cleveland area, but lack of appropriate sites and mostly substantially polluted sediment quality makes this alternative not practical.

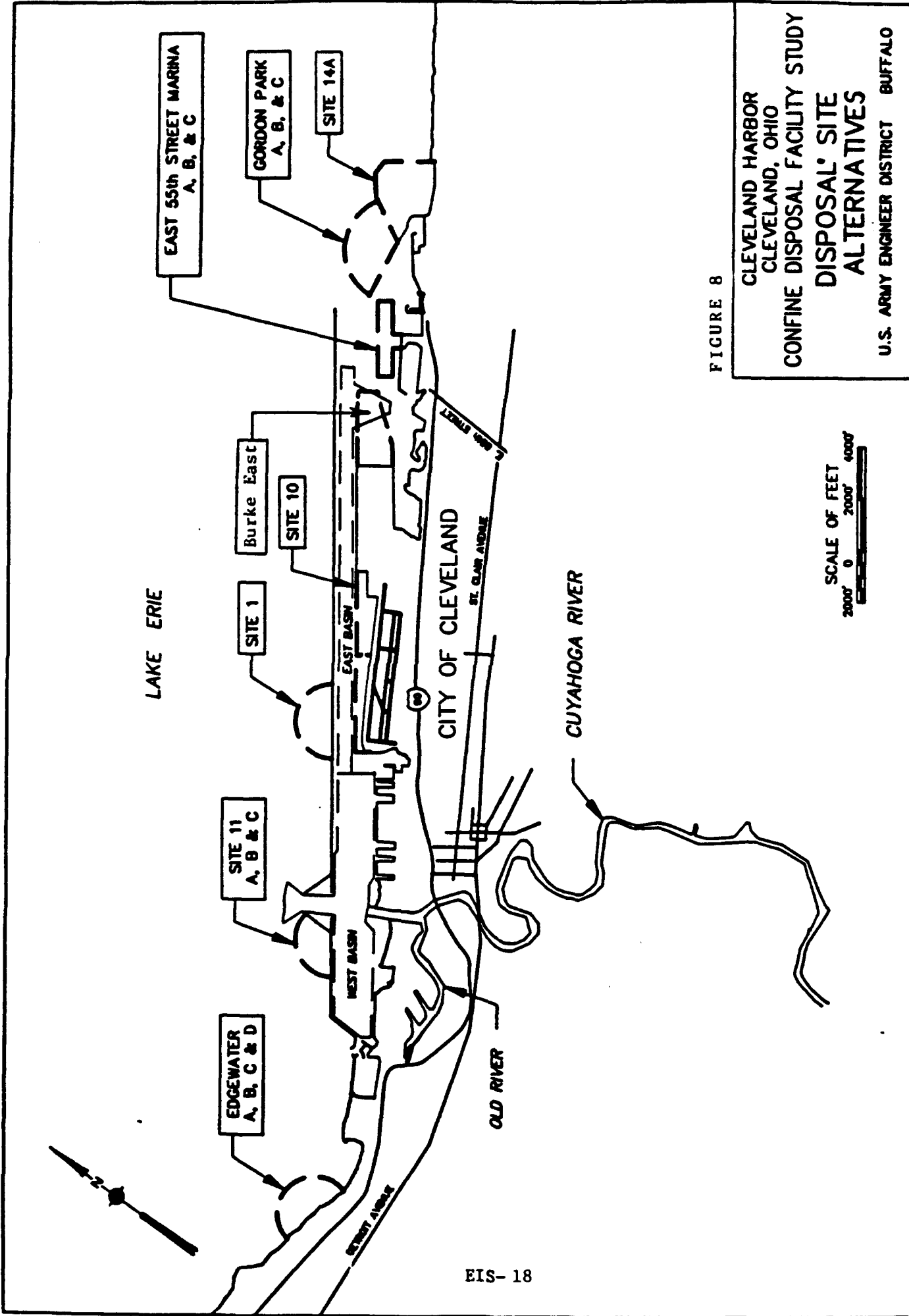
2.19 Initial Diked Confined Disposal Facilities (CDF). Consideration and evaluation of potential sites for a diked CDF has been long and difficult for this study. In all, eight sites have been identified and evaluated. These sites are identified on Figure 8. For each site, several levels of CDF development were considered pertaining primarily to 10 to 20-year use plans for the discharge of 300,000 to 400,000 cubic yards of dredged polluted material annually. Sheetpile construction versus rubblemound construction was considered in some cases, but was eliminated because of: higher costs, wave reflection, little filtration properties, stability and repair problems, and lesser aquatic habitat value. As indicated previously, these sites and/or plans were generally evaluated for engineering and economic feasibility, and social and environmental acceptability. Reference Table 3.

2.20 In addition to considering and evaluating potential new CDF sites for long-term use, the potential for raising the currently utilized and nearly full Site 14 CDF for short-term or interim use was considered as the alternative Site 14A plan.

2.21 Site 14A Plan. This alternative would raise the height of the dikes of the current CDF at Site 14. A seven-foot increase in the dike height at the 88-acre site would provide 993,000 cubic yards of capacity and would contain consolidated dredged material resulting from about 3 years worth of dredging operations.

2.22 Of the array of site CDF plans initially considered (Burke East was not initially considered) only five had benefit-to-cost ratios greater than one. These included the Site 10 CDF Plan (the entire site), the Edgewater Site Plans, and the Site 14A Plan. Upon further coordination and evaluation, the Edgewater Site Plans were eliminated from further consideration because of: costs, land use conflict, perceived water quality and health and safety concerns, adverse impact concerns on aquatic habitat, and associated non-support from the local interests. The initially considered plan of action was to raise the dikes of CDF at Site 14 (Site 14A Plan) and construct the Site 10 CDF Plan.





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FIGURE 8

CLEVELAND HARBOR  
 CLEVELAND, OHIO  
 CONFINE DISPOSAL FACILITY STUDY  
 DISPOSAL SITE  
 ALTERNATIVES  
 U.S. ARMY ENGINEER DISTRICT BUFFALO

SCALE OF FEET  
 2000' 0 2000' 4000'

x

TABLE 3 - Diked CDF Sites - Generalized Assessment - Problems

	Diked CDF Sites					
	Site 11	Site 1	Site 10	Burke East	East 55th Street	Gordon Park Site 14A
<u>Engineering</u>						
Foundation Problem		•				
<u>Economic</u>						
Benefit/Cost Problems	•	•		•	•	•
<u>Social</u>						
Implementation (Cost) Problem	•	•	•	•	•	•
Land Use Conflict	•			•	•	•
<u>Environmental</u>						
Water Quality Concern	•			•	•	•
Littoral (20 ft) Aquatic Habitat Concern	•			•	•	•

2.23 At the time, the local cooperating interests were opposed to the Site 14A Plan. The Site 14 CDF is projected to eventually be utilized to expand Gordon Park. Although by far the most economically feasible plan, it would result in undesirable social and land-use (delay) impacts which the local cooperating agencies were unwilling to support. Therefore, implementation of the Site 10 CDF Plan advanced as the recommended plan of action, with possible utilization of the site prior to completion. On further analysis, however, this plan proved to be non-implementable as considered. Construction of the Site 10 CDF Plan would require the extension of nine sewerline outflows at substantial cost (approximately \$9,000,000). Relocation/extension of the storm sewerlines is a local sponsor cost responsibility. The City of Cleveland was unable to commit to local cost funding for this plan. Therefore, none of the originally considered alternatives appeared to be feasible (Reference paragraphs 2.24-2.41 which follows) and additional plan formulation considerations were in order.

#### PLANS CONSIDERED IN DETAIL

2.24 The following sections detail revised plan formulation, evaluation, and selection since original recommendations proved to be non-implementable:

2.25 In an April 14, 1987 letter to the Corps of Engineers, North Central Division Office (NCD), the Buffalo District (NCB) requested:

a. concurrence with proposed local cooperation requirements for confined disposal facilities (CDF); and

b. approval to construct only the Site 10 CDF Plan (rather than the combination plan of action as initially considered). The local sponsor(s) opposed the raising of the existing Site 14 CDF and supported building a new Site 10 CDF. The proposed local cooperation agreement requires the local cooperator to pay for utility including storm sewerline extension/relocation while the new dike construction would be 100 percent Federal costs.

2.26 In a May 21, 1987 letter, NCD concurred with NCB's proposal to design and construct only the Site 10 CDF. NCD did not supply any guidance contrary to NCB's position that utility relocations were non-Federal costs.

2.27 An August 13, 1987 letter from NCB to the local sponsor(s) requested a letter of intent to act as the local cooperator for the proposed Site 10 CDF. The items of local responsibility in the agreement would include providing lands, easements, rights-of-way, and utility relocations needed to construct and maintain the new facility. The utility (storm sewerline) extensions/relocations were expected to cost over \$9 million dollars for the extension of nine storm sewer outfalls emerging from under the Burke Lakefront Airport.

2.28 On September 30, 1987 the local sponsor(s) informed NCB that they did not have significant funding capability; and unless Congress provided funding, they could not respond to NCB's August 13, 1987 letter since they could not come up with the requested amount of money for utility relocations.

2.29 An October 22, 1987 letter from NCB requested the local sponsor(s) to reconsider their position on one or both of the two sites previously identified for a CDF (Site 10 and raising the existing Site 14 CDF). Lack of receipt of a positive response would leave the Corps of Engineers unable to continue routine maintenance dredging of Cleveland Harbor beyond several years.

2.30 The local sponsor(s)' letter of November 3, 1987 said they were not able to supply a letter of intent for the proposed Site 10 CDF at Burke Airport due to the substantial costs of utility relocation. While they still had very strong objections to raising the Site 14 CDF, it appeared to be the only option they could support. The local sponsor(s), by letter dated June 5, 1989, agreed to act as the local cooperators for raising the Site 14 CDF.

2.31 In a January 21, 1988 letter, NCB notified local, State, and Federal agencies that the local sponsor(s) would not act as the cooperators for the Site 10 CDF and NCB would be reinstating a study to locate another site for a new CDF. The Corps of Engineers also said that we were proceeding with plans to raise the walls of the existing Site 14 CDF to increase its capacity. This latter plan (Site 14A Plan) is being coordinated for National Environmental Policy Act (NEPA) requirements via an earlier Environmental Impact Statement (EIS).

#### 2.32 Revised Diked Confined Disposal Facility (CDF) Plans.

2.33 During the course of this supplemental study, seven alternative plans for a new CDF in connection with three potential sites were examined. These sites are shown on Figure 9. Analysis at this phase was based on dredged material volumes of about 300,000 (234,000 consolidated) cubic yards annually. The sites and alternative plans for each site are described below.

2.34 Site 10A (9-Year) CDF. This plan (a smaller version of the originally proposed Site 10 CDF Plan requiring only two sewer extensions) was proposed by the city of Cleveland and the Cleveland-Cuyahoga County Port Authority. It is shown on Figure 9, and fits in with the future expansion of the Burke Lakefront Airport. The plan site has an area of approximately 36 acres with a usable volume of 2,071,000 cubic yards. It provides approximately 9 years of capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. The containment dike would be of stone rubblemound construction, 3,100 feet long, with a top elevation of +14 feet LWD, and a bottom elevation of approximately -22 feet LWD. The estimated construction cost would be \$19,100,000 (including \$1,632,200 for the extension of two sewer outfalls through the area), giving a cost of \$7.19 per cubic yard of consolidated dredged material.

2.35 Site 10B (15-Year) CDF. This plan (a smaller version of the originally proposed Site 10 CDF Plan, but larger than the Site 10A CDF Plan) was also proposed by the City of Cleveland and the Cleveland-Cuyahoga County Port Authority. It would require six storm sewerline outflow extensions. It is shown on Figure 9 and would conform with the future expansion of the

L A K E E R I E

EAST 55th STREET MARINA  
MODIFIED

SITE 14A

BURKE, EAST  
20 YEAR

SITE 10

SITE 10A

SITE 10B

EAST BASIN

CITY OF CLEVELAND

WEST BASIN

OLD RIVER

CUYAHOGA RIVER

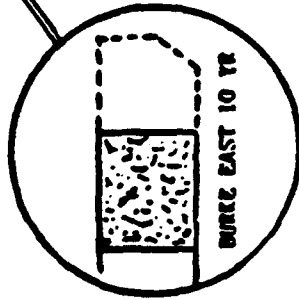
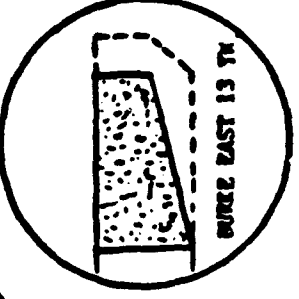
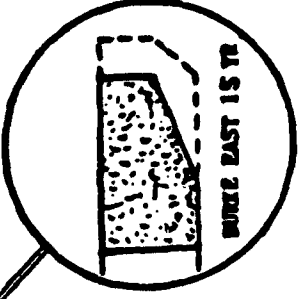
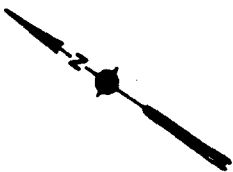


FIGURE 9

CLEVELAND HARBOR  
CLEVELAND, OHIO  
CONFINE DISPOSAL FACILITY STUDY  
**DISPOSAL SITE  
ALTERNATIVE**  
U.S. ARMY ENGINEER DISTRICT BUFFALO



Burke Lakefront Airport. The plan site would have an area of about 68 acres with a usable containment volume of about 3,840,000 cubic yards. It would provide approximately 15 years of capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. The containment dike would be of layered stone rubblemound construction about 5,050 feet long, with a top elevation of +14 feet LWD and a bottom elevation of approximately -22 feet LWD. The estimated construction cost would be \$32,880,000 (including \$3,980,000 for the extension of 6 sewer outfalls through the area), giving a cost of \$ 6.91 per cubic yard of consolidated dredged material.

2.36 Modified ODNR 55th Street Site (10-Year) CDF Plan. This plan was proposed by the Ohio Department of Natural Resources (ODNR). This plan, shown on Figure 9, would not accommodate plans for airport expansion; however, it would provide land for future expansion of the State park and marina. The plan site has an area of about 41 acres with a usable containment volume of about 2,381,000 cubic yards. It provides approximately 10 years of containment capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. The containment dike would be of layered stone rubblemound construction for about 3,800 feet, with a top elevation of +14 feet LWD, and a bottom elevation of approximately -23.5 feet LWD. The estimated construction cost was \$27,000,000 which includes \$1,041,900 for a storm sewer extension. The containment cost per cubic yard of consolidated dredged material would be \$8.85.

2.37 Burke East Site (10-Year) CDF. This plan was proposed for consideration by the Corps of Engineers. This plan, shown on Figure 9, does not accommodate future plans for airport relocation, but would provide protection for the potential development of a small-boat harbor. The plan would have an area of about 40 acres with a usable containment volume of about 2,340,000 cubic yards. It would provide approximately 10 years of containment capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. The containment dike would be of layered stone rubblemound construction for about 4,000 feet, with a top elevation of +14 feet LWD, and a bottom elevation of approximately -23 feet LWD. The estimated construction cost was \$21,700,000. The containment cost per cubic yard of consolidated dredged material would be \$7.23.

2.38 Burke East Site (13-Year) CDF. This plan was proposed for consideration by the Cleveland-Cuyahoga County Port Authority. This plan, shown on Figure 9, is considered the minimum size plan to accommodate future plans for airport relocation and provide protection for the potential development of a small-boat harbor. The plan has an area of about 53 acres with a usable containment volume of about 3,100,000 cubic yards. It would provide approximately 13 years of containment capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. The containment dike would be of layered stone rubblemound construction for about 5,600 feet, with a top elevation of +14 feet LWD, and a bottom elevation of approximately -24 feet LWD. The estimated construction cost was \$28,500,000. The containment cost per cubic yard of consolidated dredged material would be \$7.17.

2.39 Burke East Site (15-Year) CDF. This plan was a compromise plan developed by the Corps of Engineers and the local sponsors. This plan, shown on Figure 9, would accommodate future plans for airport relocation and provide protection for the potential development of a small boat harbor. The plan would have an area of about 60 acres with a usable containment volume of about 3,510,000 cubic yards. It would provide approximately 15 years of containment capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. The containment dike would be of layered stone rubblemound construction for about 5,650 feet, with a top elevation of +14 feet LWD, and a bottom elevation of approximately -24 feet LWD. The estimated construction cost would be \$29,300,000. The containment cost per cubic yard of consolidated dredged material is \$6.51.

2.40 Burke East Site (20-Year) CDF. This plan was proposed for consideration by the Corps of Engineers. This plan, shown on Figure 9, would accommodate future plans for airport relocation and provide protection for the potential development of a small-boat harbor. The plan has an area of about 81 acres with a usable containment volume of about 4,751,000 cubic yards. It provides approximately 20 years of containment capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. The containment dike would be of layered stone rubblemound construction for about 6,600 feet, with a top elevation of +14 feet LWD (Low Water Datum), and a bottom elevation of approximately -24.5 feet LWD. The estimated construction cost was \$33,100,000. The containment cost per cubic yard of consolidated dredged material is \$5.43.

2.41 Since the Burke East Site 10-year, 13-year, 15-year, and 20-year plans could extend into or through a commercially designated Federal channel, this area would need to be deauthorized as a Federal channel. Discussions held at local meetings indicate there is no local or State objection to this. This channel is not currently used by commercial interests and is no longer required due to the closure of the industries that used it. Tentative deauthorization was initiated by the City of Cleveland in March 1990. The current project schedule would provide an adequate timeframe for the deauthorization process, if necessary.

#### ALTERNATIVE EVALUATION AND SELECTION

2.42 Table 4 compares each of the final array of alternative CDF Alternative Plans to general criteria such as: plan description; economic efficiency; land availability; local sponsor; future land use plan; key environmental quality concerns; and key community/social concerns.

2.43 The modified East 55th Street alternative was eliminated from further consideration. It was least favorable from an overall economic perspective and could not be supported financially by the ODNR who proposed the site for consideration. It was not favorable to the City of Cleveland or the Cleveland-Cuyahoga Port Authority.

2.44 Intermediate evaluation indicated that the Burke East 20-year or 15-year alternatives were initially most favorable from an overall economic perspective. These were tentatively recommended by the U.S. Army Corps of

TABLE 4 - Comparison of Detailed Plans

Evaluation Criteria	Site 10A (9-Year Plan)	Site 10B (15-Year Plan)	Modified East 55th St.	Burke East Site (10-Year Plan)	Burke East Site (13-Year Plan)	Burke East Site (15-Year Plan)	Burke East Site (20-Year Plan)
<b>PLAN DESCRIPTION:</b>	Rubblemound Dike 36 Acres 2,071,000 CY 9-Year Life	Rubblemound Dike 68 Acres 3,840,000 CY 15-Year Life	Rubblemound Dike 41 Acres 2,381,000 CY 10-Year Life	Rubblemound Dike 40 Acres 2,340,000 CY 10-Year Life	Rubblemound Dike 53 Acres 3,100,000 CY 13-Year Life	Rubblemound Dike 60 Acres 3,510,000 CY 15-Year Life	Rubblemound Dike 81 Acres 4,751,000 CY 20-Year Life
<b>ECONOMIC EFFICIENCY:</b>							
Construction Cost							
Total	19,100,000	32,880,000	27,000,000	21,700,000	28,500,000	29,300,000	33,100,000
Federal	17,447,800	28,900,000	25,958,100	21,700,000	28,500,000	29,300,000	33,100,000
Local	1,632,200	3,980,000	1,041,900	0	0	0	0
Discharge Site Cost Per Cubic Yards:	7.19	6.68	8.85	7.25	7.17	6.51	5.43
Benefits (Av. An) Costs (Av. An.) B/C							
Net Benefits (Av. An.)							
<b>LAND AVAILABILITY:</b>	Port Authority has obtained rights from the State	Port Authority has obtained rights from the State	State has rights of lake bottom	State has rights of lake bottom	State has rights of lake bottom	State has rights of lake bottom	State has rights of lake bottom
<b>LOCAL SPONSOR:</b>	Not at this time. Not acceptable to City of Cleveland and Port Authority.	City of Cleveland	CDNR unable to commit to funding Not acceptable to City of Cleveland and Port Authority.	Not at this time. Not acceptable to City of Cleveland and Port Authority.	Not at this time. Not acceptable to City of Cleveland and Port Authority.	Not at this time. Not acceptable to City of Cleveland and Port Authority.	Not at this time. Not acceptable to City of Cleveland and Port Authority.
<b>FUTURE LAND USE PLAN:</b>	Burke Airport and Waterfront Expansion	Burke Airport and Waterfront Expansion	State Park and Marina Expansion	Burke Airport, Waterfront, and Marina Expansion	Burke Airport, Waterfront, and Marina Expansion	Burke Airport, Waterfront, and Marina Expansion	Burke Airport, Waterfront, and Marina Expansion
<b>KEY ENVIRONMENTAL QUALITY CONCERNS:</b>							
Water Quality	Minor Concern	Minor Concern	Minor Concern	Some Concern (Embayment Area)	Substantial Concern: (Embayment Area)	Substantial Concern: (Embayment Area)	Substantial Concern: (Embayment Area)
Littoral Aquatic Habitat Concern (<20 feet)	Some Concern	Some Concern	Some Concern	Some Concern	Some Concern	Some Concern	Some Concern
<b>KEY COMMUNITY/ SOCIAL CONCERNS:</b>							
Land & Water Use Conflict	Limited land use (size). Loss of 36 acres of protected harbor area.	Consistent with land use plans. Loss of 68 acres of protected harbor area.	Conflicts with current land use plans. Loss of 41 acres of protected harbor area.	Conflicts with current land use plans. Loss of 40 acres of protected harbor area.	Conflicts with current land use plans. Loss of 53 acres of protected harbor area.	Conflicts with current land use plans. Loss of 60 acres of protected harbor area.	Conflicts with current land use plans. Loss of 81 acres of protected harbor area.
Other Opposition				Northeast Ohio Sewer District	Northeast Ohio Sewer District	Northeast Ohio Sewer District	Northeast Ohio Sewer District



Engineers and tentatively acceptable to the City of Cleveland. The Burke East alternatives however, have become not favorable to the local interests because of aesthetics, potential future land and water use conflict, and concerns pertaining to storm sewer outflows and water quality problems that could be generated in the protected embayment area created by construction of the CDF. Resolution of this latter concern could require more extensive investigation, possibly extensive mitigation measures (i.e., water circulation culverts, extension of sewer outflows through the CDF, etc.), and associated costs.

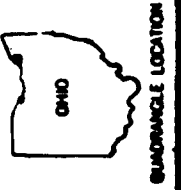
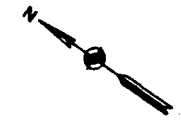
2.45 The Site 10B (15-Year) Diked CDF Plan was proposed by the City of Cleveland. The local sponsor supports this plan with the understanding that costs (about \$3,980,000) for relocation/extension of six sewerline outflows would be a local cost. This would provide a disposal site for in excess of 15 years and would provide required future land area for expected eventual expansion/relocation of Burke Airport facilities. The Site 10B (15-Year) CDF Plan is the recommended plan.

2.46 The Site 10B (15-Year) CDF Plan is engineeringly and economically feasible, and with environmental and social design measure considerations, environmentally and socially acceptable. It best meets the overall planning objectives. As with all of the most feasible alternatives, environmental impacts include harbor channel maintenance, protection of Lake Erie water and sediment quality, removal of polluted sediments from the harbor channel and containment in a CDF, some associated loss of protected harbor and aquatic (water column) habitat, trade-off or slight enhancement of perimeter stone dike aquatic habitat, and potential future waterfront land use.

#### THE RECOMMENDED PLAN

2.47 Site 10B (15-Year) CDF Plan. The location, dimensions, and typical cross-section of the Site 10B (15-Year) CDF Plan are depicted on Figures 10 and 11. The containment dike would be layered stone rubblemound construction, 5,050 feet long, with a crest elevation of +14 feet LWD, top width of 9 feet, interior and exterior sideslope of 1 vertical on 2 horizontal, and average bottom elevation of about -22 feet LWD. The plan site would have an area of about 68 acres with a usable volume of about 3,840,000 cubic yards. It would provide approximately 15 years of capacity for consolidated dredged material at a rate of 300,000 (234,000 consolidated) cubic yards per year. Six sewerline outflows would need to be extended/relocated through the project site on stonefoundation material. Sewer extension plans and cross-sections (two options) are depicted on Figures 12 and 13. A concrete control weir with sliding "weir" boards would be installed within the new dike wall for discharge (if necessary) of water from the facility after sediments and their adsorbed pollutants have settled out from discharged material. The plan location of the CDF overflow weir is at the northern corner of the CDF, while pumpout of dredge material into the CDF would likely be initiated along the northeastern dike vicinity and possibly migrate along the dike toward the CDF discharge weir. This arrangement would provide a shorter distance from the dredging area to the pumpout site (into the CDF) and reduce overflow discharge turbidity by maximizing settling distance between the pumpout site and the CDF overflow weir. The dredging contractor would be required to provide any transfer/pumpout facilities for transfer of dredged material from vessel and pumpout into the CDF.

L A K E E R R I E



LAKE APPROACH  
PROJECT DEPTH  
29.0 FEET

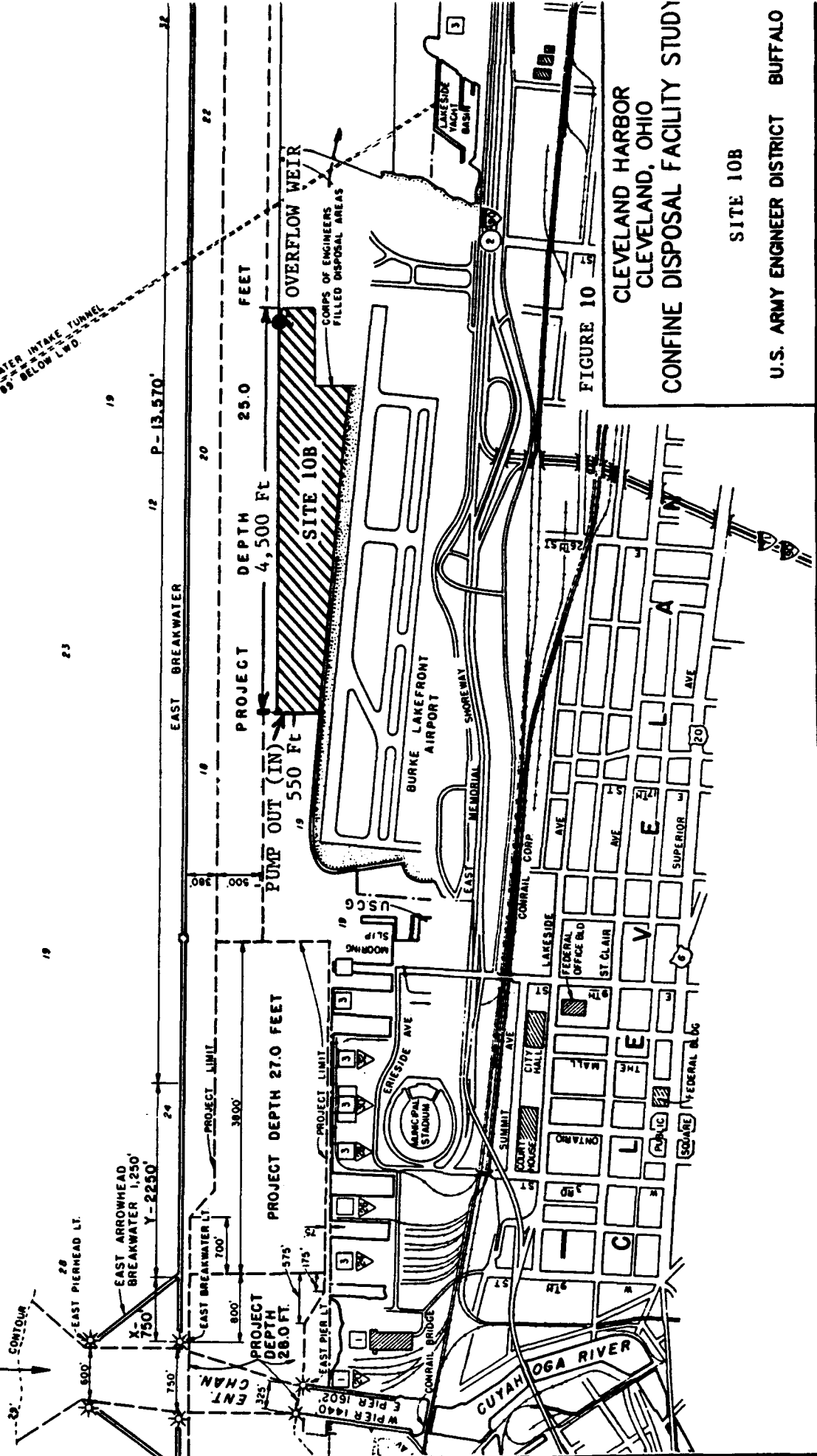


FIGURE 10

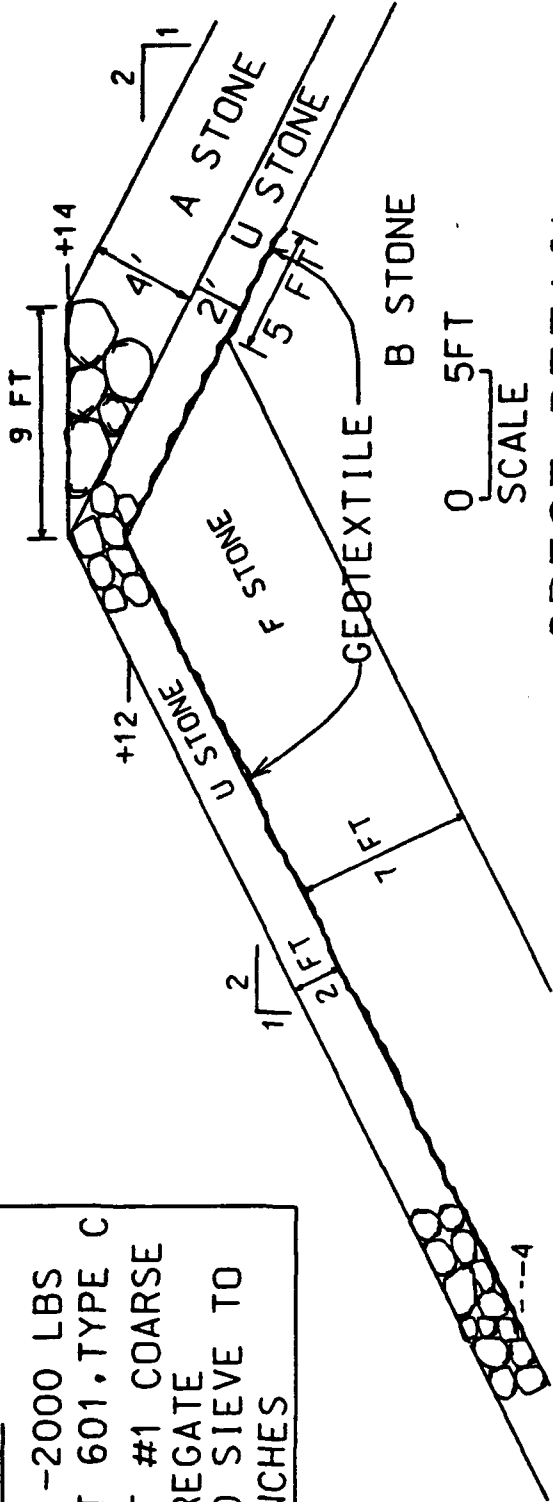
CLEVELAND HARBOR  
CLEVELAND, OHIO  
CONFINE DISPOSAL FACILITY STUDY

SITE 10B

U.S. ARMY ENGINEER DISTRICT BUFFALO

STONE SIZES

- A STONE: 900 -2000 LBS
- U STONE: ODOT 601, TYPE C
- B STONE: ODOT #1 COARSE AGGREGATE
- F STONE: #200 SIEVE TO 4 INCHES



0 5 FT  
SCALE

CREST DETAIL

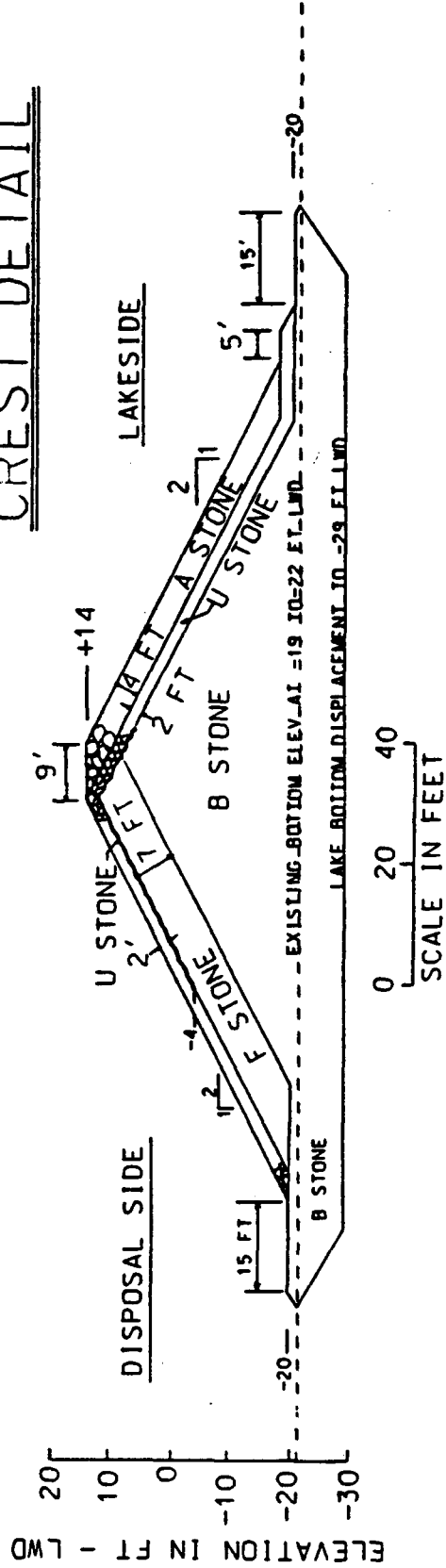


FIGURE // TYPICAL CROSS-SECTION

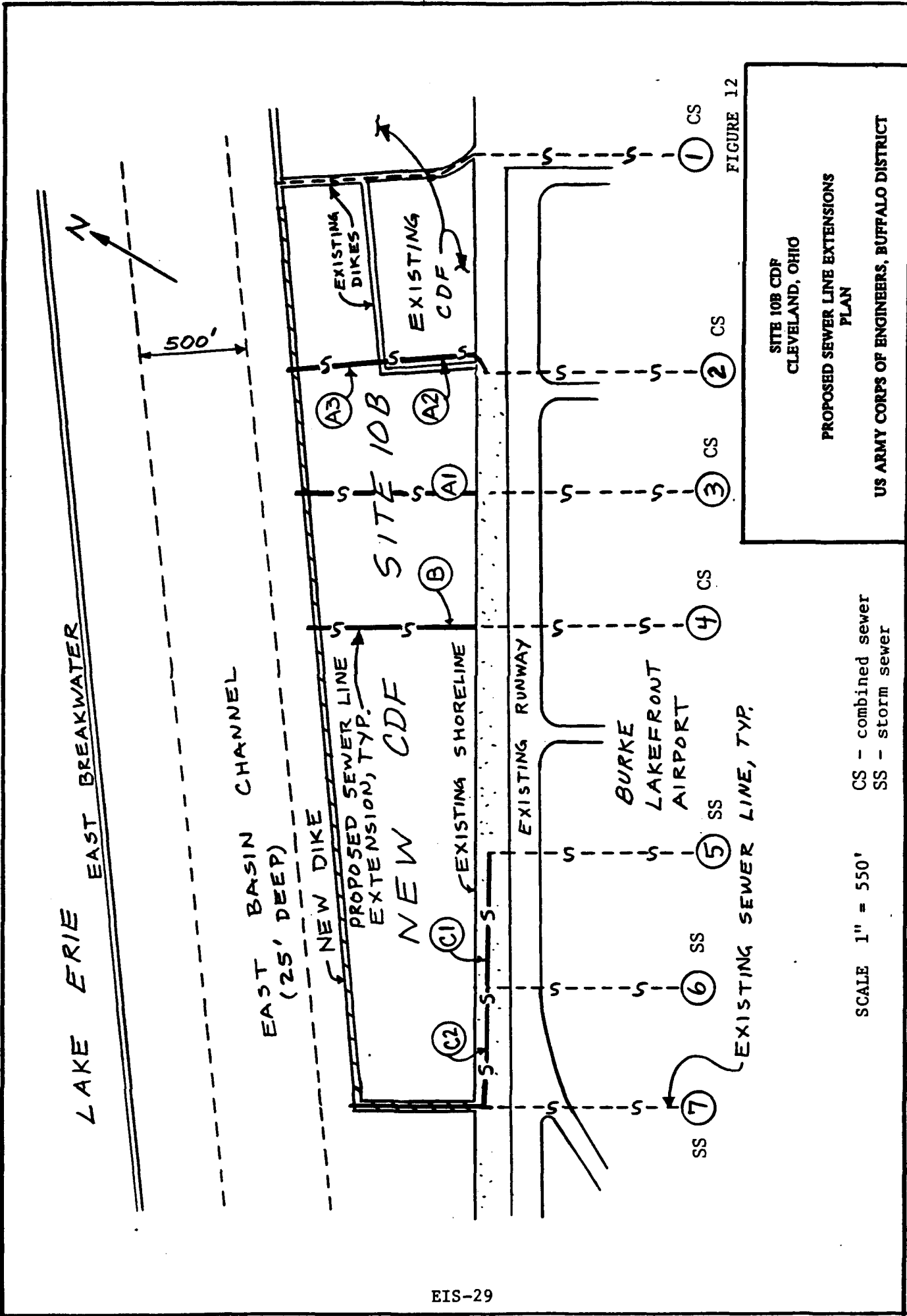
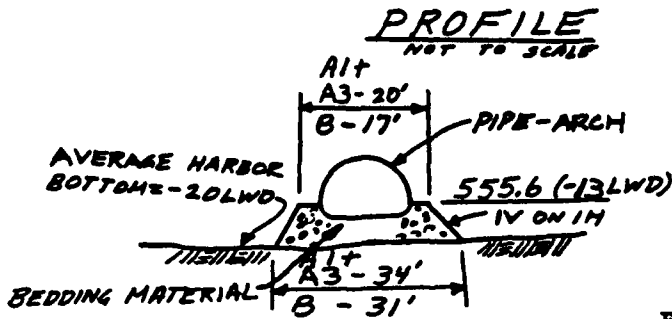
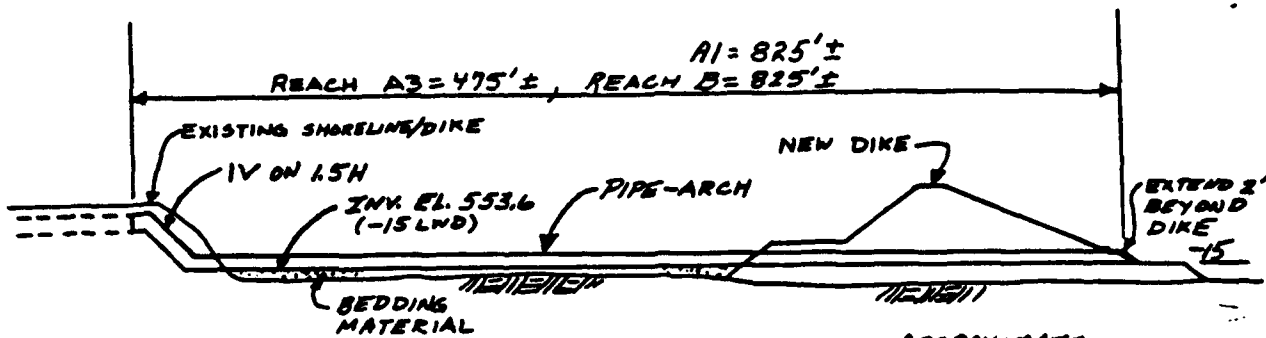


FIGURE 12

SITE 10B CDF  
 CLEVELAND, OHIO  
 PROPOSED SEWER LINE EXTENSIONS  
 PLAN  
 US ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT

CS - combined sewer  
 SS - storm sewer

SCALE 1" = 550'

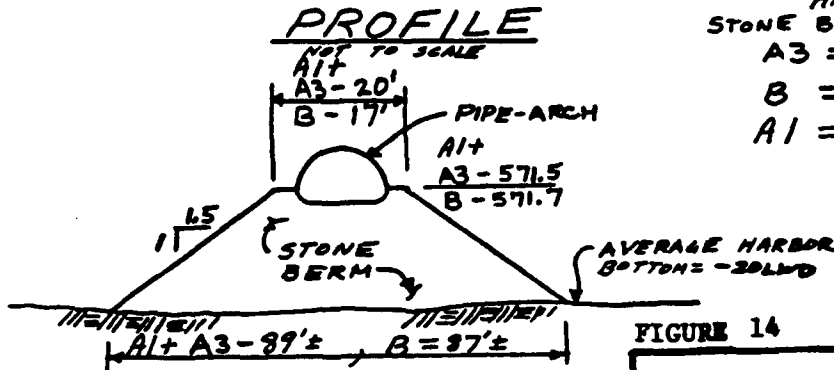
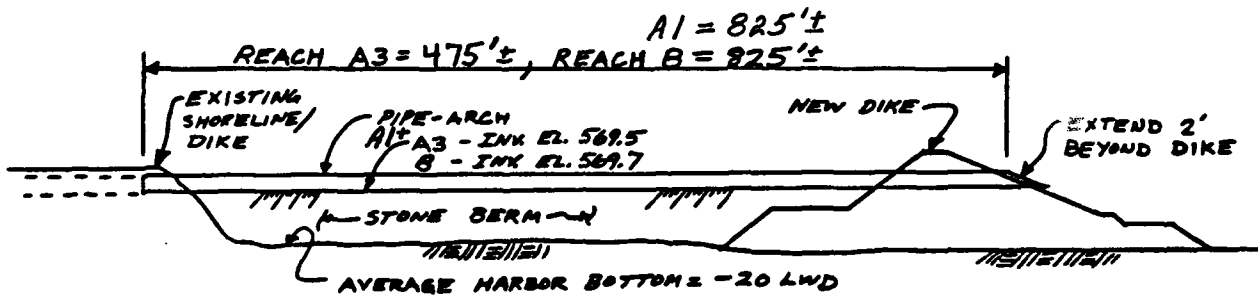


APPROXIMATE  
BEDDING MATERIAL  
QUANTITIES -  
A3 = 2600 CY  
B = 4500 CY  
A1 = 5300 CY

**SECTION**  
NOT TO SCALE

FIGURE 13 (OPTION A)

SITE 108 CDP  
CLEVELAND, OHIO  
PROPOSED SEWER LINE EXTENSIONS  
PROFILE AND SECTION  
REACHES A3 & B  
ALTERNATIVES A3-2 & B-2  
US ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT



APPROXIMATE  
STONE BERM FILL QUANTITIES -  
A3 = 17,600 CY  
B = 32,100 CY  
A1 = 37,800 CY

**SECTION**  
NOT TO SCALE

FIGURE 14 (OPTION B)

SITE 108 CDP  
CLEVELAND, OHIO  
PROPOSED SEWER LINE EXTENSIONS  
PROFILE AND SECTION  
REACHES A3 & B  
ALTERNATIVES A3-1 & B-1  
US ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT

2.48 Construction of the CDF would be accomplished by a private contractor under contract with the Corps of Engineers. Stone construction material would be obtained from a permitted/licensed source. Generally, due to construction contract language requirements and potential savings to the government, project contractors are allowed to select alternate project borrow areas; provided material standards and Federal, State, and local permit/license requirements are met. A list of some suitable sources of stone would be provided to the contractor by the Corps of Engineers. Some potential sources are listed as Figure 6 on page 27 in ENVIRONMENTAL APPENDIX EIS-B -PUBLIC NOTICE AND SECTION 404 EVALUATION REPORT of these reports. Most are located in Ohio. Stone would likely be transported from the quarry along major routes by truck or train to the project vicinity, or to ship or barge and then to the project vicinity.

2.49 A several acre staging area would likely be developed at a docking facility in the harbor, and stone would likely be placed from a water based construction plant facility (derrick, barges, etc.). It is possible that a staging area may be developed at a remote area of the Burke Lakefront Airport with land based construction (i.e., truck, bulldozer, backhoe, crane, barge, etc.); however, this is less likely. The sewerline extensions, on the other hand, would likely be constructed mostly with land based equipment and some water based equipment.

2.50 Project contractors would be required to comply with the Corps of Engineers Civil Works Construction Specification entitled "Environmental Protection" (CW-01430, dated July 1978) pertaining to practical measures to be applied during construction/operations to protect significant water and associated land environmental resources (i.e., noise, dust, erosion, turbidity, etc.), and FAA Regulation Part 77 Notice of Proposed Construction of Alteration. This is included in project plans and specifications and would invoke use of practical measures to address such concerns, particularly if a problem may be or becomes evident. However, different contractors may use different equipment, which may require different protection measures, which makes directed use of specific measures difficult in most cases. A number of measures may be considered relative to the referenced situation however. For examples: (1) initial stone placement and placement of stone containing fines may be scheduled during calmer lake conditions, (2) stone material may be lowered before release to better direct placement and to reduce impact and associated disturbances. Generally, protected resources and measure effectiveness must reasonably justify measure implementation. Additionally, Federal, State, and local personnel periodically inspect construction operations for evidence of and/or measures to address such concerns.

2.51 The CDF dike wall is designed to meet Federal design standards which take into account the foundation conditions, wave climate and local currents, water quality considerations, and the stability of the structure itself. A Design Analysis is being prepared for this project which will document the field investigations, materials testing, design criteria and standards, and calculations of the various components of the design of the containment structure. The slope stability of the structure is designed to a factor of safety of 1.3 and construction of the structure is monitored closely by experienced Corps of Engineers construction representatives to insure that the structure is built as designed. The stone sizes are developed based upon wave and current data specific to Cleveland Harbor and past experience with

several similar structures that are functioning as designed within the harbor (there are three other CDFs within the harbor). The Corps has considerable experience in rubblemound type construction and this type of structure, with proper maintenance, has proven to be very durable in the marine environment. In terms of water quality, a seven foot thick layer of stone filter material and geomembrance are designed to contain the polluted sediments, and their effectiveness has been tested in the laboratory and in application at other similarly-designed CDF sites (see paragraphs that follow). Although there have been no known failures of CDFs in the Great Lakes that have leached polluted sediments back into the open water environment, if one were to occur the results would not be catastrophic. A localized dike failure would allow a relatively small portion of the polluted sediments contained therein to reenter the open water environment where they would create temporary turbidity problems until they have sufficient time to settle out of the water column. Because the primary pollutants are absorbed to the sediments there would be only a short-term impact on water quality. In the unlikely event of "failure" of a section of the dike, repairs could be made relatively quickly by restoring the original cross section with additional stone materials and the polluted sediments could be collected by dredging in the vicinity of the breach and returning these sediments to the CDF.

The Corps of Engineers and/or its contractors would be responsible for the facility and its operations during construction and filling of the CDF, including and leaching problems or dike failure due to settling or stability problems. The final owner/steward of the filled CDF and/or its contractors would be responsible for inspection (in conjunction with the Corps of Engineers) and maintenance of the CDF. With proper dike wall construction and maintenance, the potential for dike wall failure is expected to be minuscule.

#### CONTINUED HARBOR OPERATION AND MAINTENANCE

2.52 The Buffalo District intends to continue to maintain harbor Federal breakwater structures via replacement of stone and/or concrete material along these facilities, as necessary, in order to return the structures to design specifications and to maintain their integrity. Repair material is that material dislodged and recovered at the site, or clean stone or concrete material, of similar characteristics to that dislodged, obtained from local/regional sources. Material is generally transported to the work sites by truck and/or barge and placed by tug and derrick crane. About 500 (1,200 to 1,800 cubic yards) tons of stone and/or concrete material is replaced along breakwater structures annually.

2.53 Recent sediment sampling and analyses indicates that sediments to be dredged from Federal channels are generally polluted. Based on environmental guidelines, such sediments cannot be discharged at an unrestricted open-lake site, but must be disposed of by alternative measures.

2.54 The Buffalo District also intends to continue to dredge Cleveland Harbor Federal navigation channels and discharge the dredged polluted material at a CDF. The Buffalo District administers contracts to dredge approximately 300,000 cubic yards of sediment from Federal navigation channels annually. Sediments would be removed from the channel bottom by mechanical or hydraulic dredge and placed into hoppers aboard a ship or scow for transport to the discharge site. The method of excavation would be determined by the

Contractor performing the work. In recent years, clamshell dredges have been used to complete the work, although hopper dredges have been used in the past and could also be used.

2.55 The CDF may also be utilized for the discharge of dredged polluted sediments from non-Federal interests channels by permit. Quantities of dredged material to be placed in the CDF by non-Federal interests would be variable and generally would originate from sites in close proximity to the existing Federal navigation channels. Over the long-term, material to be placed in the CDF by non-Federal interests would be expected to total about 15,000 cubic yards per year.

2.56 With regard to the discharge of dredged polluted material into the CDF, such work would likely be accomplished either by use of a scow and clamshell bucket whereby the dredged material in the scow would be removed by the clamshell bucket, and then deposited directly into the CDF, or by use of a scow and pump, whereby dredged material slurry would be pumped from the scow directly into the CDF via a pipeline. The dredging contractor would be required to provide any transfer/pumpout facilities for transfer of dredged material from vessel and pumpout into the CDF.

2.57 As mentioned previously, relative to the Corps of Engineers Civil Works Construction Specification entitled "Environmental Protection" (CW-01430, dated July 1988), this is included in project plans and specifications and would invoke use of practical measures to address such concerns, particularly if a problem may be or becomes evident. Different contractors, however, may use different equipment, which may require different protection measures. This makes directed use of specific measures difficult in most cases. A number of measures may be considered relative to the referenced situation however.

2.58 Some water column turbidity (resuspension of sediments) will be unavoidable during dredging operations regardless of the method (equipment) utilized. Of note, testing in the vicinity of dredging operations at other harbors generally indicate only temporary minor adverse impacts to water quality in the immediate vicinity of the dredging operations due to the adsorption factor.

2.59 While hydraulic or mechanical hopper dredging may minimize initial surface water column turbidity, eventual filled hopper overflow will generate some turbidity from the surface down. Considered measures to minimize water column turbidity in this situation (as necessary) may include: reasonable rate of operation, overflow considerations (i.e., amount/settling/filtration), and possibly downstream (i.e., aft) silt curtains. Of note, specific testing in the vicinity of hopper overflow dredging (i.e., Buffalo Harbor, 1984 and Rochester Harbor, 1986; Aqua Tech) indicate only temporary minor adverse impacts to water quality in the immediate vicinity of the dredging operation.

2.60 Mechanical dredging primarily causes turbidity when the bucket and dredged material is dragged up through the sediment and water column. Considered measures to minimize water column turbidity in this situation may include: reasonable rate of operation, monitoring to make sure the equipment is working properly (i.e., fully closed bucket), minimizing bucket to barge spillage (i.e., proximity, possibly spill troughs), if barge overflow (amount/settling/filtration considerations), and possibly downstream (aft) silt curtains.



2.61 Associated considered measures for transporting and pumpout of dredged materials into the CDF may include: reasonable fill and transport rate to avoid spillage, monitoring vessel containment items and measures, splash boards, monitoring discharge equipment containment items and measures, and spill troughs.

#### THE CONFINED DISPOSAL FACILITY (CDF) AND DIKE FILTRATION PROCESS

2.62 Once the dredged material is placed inside the CDF, a number of processes occur. Adsorption of pollutants to sediments and the settling of sediments and associated pollutants out from the water column is generally recognized as the primary pollutant removal/containment process within a CDF. Pollutants associated with dredged materials are strongly attached (adsorbed) to the organic and clay fractions. As the particulates settle out, the pollutants adsorbed to the particulates are also removed from the water column and contained in the sediments.

2.63 With a limestone core diked CDF, some effluent will move through the dike. The effluent is filtered/treated in several ways as it moves through the various types of stone gradations of the structure. The effluent first passes through a filter fabric and layer of filter stone. As shown on Figure 11, the CDF dike composition includes a 7 foot thick layer of 4 inch minus material (Type F stone) and filter fabric. Much of this stone material consists of coarse to fine sands which filters and traps the fine polluted sediments from the effluent. Some loss of "fines" during the underwater placement of "F" stone (#200 sieve to 4-inches) would be unavoidable. This loss is expected to be minimized by the fact that placement will be in relatively protected water (inside the CDF). Excessive loss of fines will be further controlled by requiring immediate placement of filter fabric and cover stone over the "F" stone along with restricting placement of "F" stone to calmer water periods in the lake. Eventually, the sediments will fill the pores and the ponding, settling, and decanting process would predominate. Reference paragraphs 2.68 through 2.72.

2.64 Column settling, column leachate, and column filtration testing (i.e., most recently - Aqua Tech Environmental Consultants, Inc. 1990 and 1991) has been conducted on sediments from Cleveland Harbor. Laboratory studies done for the Buffalo District by a consultant using 7 feet of 4 inch minus filter material show that, for solids concentrations greater than 1,000 milligrams per liter, complete clogging of the material occurred within 30 to 60 minutes, such that no water passed through the material. For concentrations of suspended solids less than 1,000 milligrams per liter, clogging time was longer. Discharge concentration conditions indicate that the CDF material would plug within a relatively short period of time after disposal operations. The tests also showed that before the test material clogged, as suspended solids filtered out, contaminant levels significantly decreased.

2.65 The effluent then filters through the remainder of the dike wall. During this passage, three processes are occurring - settling, adsorption, and bioabsorption/biodegradation. The very small amount of suspended sediment that may pass through the filter fabric and Type F stone would spend an average of several hours or more transiting the dike wall. During this time, additional settling occurs. Permeable dikes can remove dissolved constituents in pass-through water by adsorption and precipitation on surfaces ranging from crushed limestone, voids filled with silt, and surfaces coated with bacterial

slime. Adsorption is the interphase transfer of soluble contaminants from the water to a solid surface where they are held by physical forces. Hydrophobic organics are particularly susceptible to removal by adsorption because they have a strong tendency to adsorb to almost any solid surface. Adsorption however, is limited by the hydrophobicity of the chemicals, the adsorption capacity of the dike materials, rate at which water is transmitted through the dike, and the fact that adsorption is a reversible process. The alkaline pH of limestone would promote metal precipitation.

2.66 Permeable dikes may also remove and treat dissolved organic constituents in much the same way as attached growth biological reactors remove and treat organic constituents in wastewater treatment plants. The mechanism of removal and treatment in attached growth biological reactors is adsorption and assimilation by microbial films attached to a support medium. Because the ponded water in a CDF contains phytoplankton, zooplankton, bacteria, protozoa, and other microscopic organisms; some of these microorganisms are present inside the dike as biological films attached to the dike materials. This film can adsorb and degrade organic constituents present in the pass-through water. Since filling operations are intermittent, there is a potential for significant biodegradation of adsorbed contaminants during the time between filling operations.

2.67 Due to the number of variables, it is difficult to ascertain the exact quantity of effluent that would go through the dike. Effluent (water) would filter through the dike until the interior stone layer becomes clogged. Reference paragraph 2.64. The dike filtration and other flow-through processes should sufficiently filter and process effluent that may flow through the dike to levels that reasonably achieve effluent water quality standards for receiving waters. Monitoring at other Buffalo District's permeable dike CDF's (i.e., Buffalo, New York; Huron and Cleveland, Ohio) has shown no significant impairment of water or sediment quality in the lake waters outside the dikes due to movement of pollutants through the dikes. (i.e. Aqua Tech, 1991, 1990, 1986; GLL, 1981). In fact, shortly after the discharge operation had ceased, the water quality inside the facility mirrored that of the reference site in the lake. These results reflect research by the Corps of Engineers Waterways Experiment Station, which indicate that the pollutants adhere tightly to the fine grain sediments.

2.68 When the CDF is filled to about average lake level, after dredged material is deposited in the CDF and allowed to settle and the dike filter material is plugged, some excess effluent may be drained through the weir discharge. CDF weir discharges are generally only utilized during the later use of the CDF, when fill material reaches above lake level. Even during the middle life of the CDF, ponded water may not be drained but left to evaporate. Use of the weir discharge may also be utilized to avoid undesirable conditions (vegetation, waterfowl attraction, botulism conditions, etc.) in the CDF.

2.69 The CDF overflow weir would be constructed with removable boards or slide weir to provide for an adjustable weir top elevation. Prior to discharge of dredged polluted material into the CDF, the weir top elevation would be established high enough to contain the discharged dredged material and/or to provide for sufficient retention time for particulate settlement. When the ponded water particulate concentration reaches acceptable particulate concentration for overflow weir effluent discharge, water would be allowed to flow over the top of the weir and/or the overflow weir top elevation would be

lowered by board removal or by lowering the slideweir to gradually decant the ponded water. The plan location of the CDF overflow discharge weir is at the northern corner of the CDF while pumpout discharges into the CDF would likely be initiated along the northeastern dike vicinity and possibly migrate along the dike toward the CDF overflow discharge weir. This arrangement would provide a shorter distance from the dredging area to the pumpout discharge site (into the CDF) and reduce discharge turbidity by maximizing settling distance between the pumpout discharge site and the CDF overflow discharge weir. It is assumed that about 4 feet of effluent contained in the CDF (approximately 500,000 to 750,000 cubic yards) may be discharged (after settling) via the weir from the CDF during disposal periods when the fill material in the CDF reaches above lake level.

2.70 The Buffalo District will monitor the discharge operation during early years of dredged material disposal, when the CDF will have sufficient settling capacity. Based on water quality monitoring information obtained in the CDF at that time, an operational plan to meet future effluent standards for Lake Erie can be developed in subsequent years.

2.71 An initial plan of operation would target the suspended solids concentration in any effluent discharges from the overflow weir to below 100 milligrams per liter. Testing, coordination, and precedence indicate that suspended solids of 100 mg/l or less should achieve water quality standards for receiving waters. This is a developed standard which the Buffalo District considers to be a reasonable achievable level that has been acceptable to other agency interests at other CDFs. Generally, it takes from one to several *or* more days for polluted sediments discharged into the CDF to settle out from the water column to a 100 mg/l particulate concentration at the discharge site, depending on a number of variables including: discharge method, slurry characteristics, and receiving water conditions (i.e., wave caused turbidity, etc.). Prior to discharge through the CDF overflow weir, water sampling is conducted to determine ponded water particulate concentration. During the last years of the discharge operations, weir effluent concentrations above 100 but below 200 milligrams per liter may persist. A flocculent may be added at times during dredged material discharge to accelerate settling, in order to maintain an outflow concentration close to 100 milligrams per liter. Filter devices (i.e., filter fabric) have also been utilized to further restrict particulate and associated pollutant level outflow from the weir.

2.72 Any effluent discharged through the CDF overflow weir would be required to meet State water quality standards or waivers thereof for all chemical constituents before or after the application of an appropriate mixing zone. The size of any small mixing zone (if needed), would be determined in coordination with the Ohio EPA after their review of the application(s) for a 401 Certification for use of the CDF weir, via the Public Notice and Section 404(b)(1) Evaluation.

2.73 Testing, coordination, and precedence indicate that the CDF processes including: adsorption and settling, dike filtration and flow-through, plugging and further settling, and overflow weir discharges (limiting suspended solids to 100mg/l or less) should achieve effluent water quality standards for receiving water.

2.74 Best management practices will be utilized to minimize potential conflict of birds and other wildlife with aircraft operations at the existing airport during the life of the CDF. Additionally, in order to avoid or

minimize potential of botulism occurrence, the CDF site would be monitored as indicated in the Botulism Control Management Plan provided in Appendix EIS-D.

2.75 When completely filled and consolidated, the CDF would likely be utilized to expand or relocate Burke Lakefront Airport facilities. Depending on a number of variables and potential scenarios, it is possible that the CDF will take somewhat more or possibly less time to fill than the planning 15 year period. Projected long-term land use of the site could be affected accordingly.

#### COMPARATIVE IMPACTS OF ALTERNATIVES

2.76 The following table briefly describes in a comparative fashion anticipated environmental impacts (by parameter) of the most feasible CDF plans for Cleveland Harbor, Ohio. Impacts for the Burke East Site (10-year, 13-year, and 20-year) CDF Plans would be proportionately similar to those for the Burke East Site (15-year) CDF Plan. Impacts for the Site 10A (9-Year) CDF Plan would be proportionately similar to those for the Site 10B (15-Year) CDF Plan. For a more detailed description of impacts of the alternative plans, the reader is referred to SECTION 4 - ENVIRONMENTAL EFFECTS of this EIS.

2.77 Some plan general trade-off factors include:

- Harbor channel maintenance, including removal of dredged polluted material not suitable for unrestricted open-lake disposal from the channel and containment in a CDF.

- Loss of some deep water habitat (including dike stone habitat) by CDF construction and filling with dredged material. Replacement of deep water habitat (including dike stone habitat) with long-term submerged bermed dike stone for use as habitat by aquatic life along the lakeward facing portion of the stone CDF dike. Eventual gain in terrestrial land along the lake shoreline;

- Breakwater protected (water) harbor area eventually converted to upland waterfront land use area.

2.78 Specific U.S. Fish and Wildlife Service Coordination Act comments and recommendations are listed and addressed in SECTION 6 - PUBLIC INVOLVEMENT, paragraph 6.19.

Table 5 - Comparative Impacts of Detailed Plans

Evaluation Parameter	No Action (Without Project Conditions)	Site 108 (15-Year) Confined Disposal Facility	Burke East Site (15-Year) Confined Disposal Facility
<b>ECONOMICS B/C</b>			
Federal Costs	N/A	28,900,000	29,300,000
Non-Federal Costs		3,980,000	0
Total Cost		32,880,000	29,300,000
Benefits (AA)		7,896,500	
Costs (AA)		4,411,800	MFC
B/C (AA)		1.78	
Net Benefits (AA)		3,484,700	
<b>NATURAL ENVIRONMENT (RESOURCES)</b>			
Air Quality	ST: Not Significant LT: Not Significant	ST: Moderate Adverse LT: Minor Adverse <ul style="list-style-type: none"> <li>Some localized temporary air quality degradation due to fuel combustion, particulate emissions and fuel odor from equipment operation during dredging and CDF construction</li> <li>Some temporary localized odor may occur from dredged material during annual dredging and deposition into the CDF.</li> </ul>	ST: Moderate Adverse LT: Minor Adverse <ul style="list-style-type: none"> <li>Similar short-term adverse impacts on air quality as for Site 108 (15-year) CDF.</li> </ul>
Water Quality	ST: Not Significant LT: Not Significant	ST: Moderate Adverse LT: Minor Adverse <ul style="list-style-type: none"> <li>Localized temporary increased water turbidity &amp; resuspension of sediment during dredging and construction of the stone CDF dike.</li> <li>Some filtration leaching of dredged material effluent through the stone dike.</li> <li>Effluent leaching would probably decrease eventually as silt, sediment, and bacterial slime contributed toward plugging up voids among stones within the CDF dike.</li> <li>Some minor possible fuel, oil or grease spillage into the water by normal operation of equipment during dredging and construction of the project, and during dredged material disposal.</li> <li>Installation of the CDF stone dike would contribute toward some localized alteration of current patterns in the general vicinity of the project site.</li> <li>Some possible localized impact on water quality if zebra mussels colonize submerged dike stone (i.e., increased water clarity).</li> </ul>	ST: Moderate Adverse LT: Minor Adverse <ul style="list-style-type: none"> <li>Similar probable effects on water quality as described for the Site 108 (15-Year) CDF alternative plan.</li> </ul>
<b>Key to Symbols</b>			
(AA) : Average Annual			
ST : Short Term			
LT : Long Term			
MFC : Not Final			
: Calculated			

Table 5 - Comparative Impacts of Detailed Plans (Cont'd)

Evaluation Parameter	No Action (Without Project Conditions)	Site 108 (15-Year) Confined Disposal Facility	Burke East Site (15-Year) Confined Disposal Facility
Sediment Quality	ST: Not Significant LT: Not Significant	ST: Moderate Adverse LT: Moderate Beneficial . Temporary short-term localized disruption and resuspension of bottom silts, sediments and detritus into the water column by construction activity at the time the dike is being built, as well as during annual dredging and discharge of dredged material into the completed CDF. . Temporary improvement in substrate quality in navigation channels by dredging and removal of polluted sediments and subsequent deposition of such material into: the CDF. . Annually dredged navigation channels would tend to trap polluted sediments from upstream areas, thereby reducing potential for transport of such material further lakeward.	ST: Moderate Adverse LT: Moderate Beneficial . Similar sediment impacts as described for the Site 108 (15-Year) alternative plan.
Benthos/Plankton	ST: Not Significant LT: Minor Adverse . Navigation channels would eventually fill-in with sediment; deep benthic habitat would be lost. Also, there will be a loss of water column for phytoplankton and zooplankton. Benthic organisms would soon recolonize substrate near the top of filled-in channels.	ST: Moderately Adverse LT: (1) Major Adverse (2) Minor Beneficial . Long-term displacement of planktonic organisms from the water column that would be filled by dike stone. . Disruption of benthic and planktonic organisms and associated habitat (substrate/water column) in the channels & CDF during annual dredging and discharge of dredged material. . Eventual loss of all aquatic habitat for benthic and planktonic organisms within: the 68-acre CDF site. . Dike stone placed on the lake bottom would cover about 25 acres of benthic organism habitat and crush a number of existing benthic invertebrates. . Stone placed below the waterline would provide about 9 acres of stable, long-term substrate for benthic invertebrate colonization long the lakeward facing slope of the dike. Submerged stone along the inside slope of the dike would also provide substrate for such organism colonization, but on a short-term basis, until the CDF became filled-in with dredged material above the waterline.	ST: Moderate Adverse LT: (1) Major Adverse (2) Minor Beneficial . Similar impacts as described for the CDF Site 108 (15-Year) alternative plan, except that the lake bottom substrate upon which dike stone would be placed would cover about 19.5 acres of benthic organism habitat and associated invertebrates. . Submerged stone placed along the lakeward facing slope of the rubblemound dike would provide about 6.5 acres of new substrate habitat surface area for benthic organism recolonization.

Table 5 - Comparative Impacts of Detailed Plans (Cont'd)

Evaluation Parameter	No Action (Without Project Conditions)	Site 108 (15-Year) Confined Disposal Facility	Burke East Site (15-Year) Confined Disposal Facility
<b>Fisheries</b>	<p>ST: Not Significant</p> <p>LT: Moderate Beneficial</p> <p>No annual disruption to fish habitat and associated fish since CDF construction would not occur. Possibly some improvement in quality of fish habitat in the long-run if sources of pollution were eventually rectified.</p>	<p>ST: Moderate Adverse</p> <p>LT: (1) Major Adverse (2) Minor Beneficial</p> <p>All deep water aquatic habitat within the 68-acre lake area of the CDF site would be filled-in with dredged material and therefore, eliminated from further utilization by fish as spawning and/or feeding habitat. The submerged out- side portion of the CDF dike exposed to the lake proper, would provide about 9 acres of irregular long-term stone substrate as habitat for fish.</p> <p>Water turbidity during dredging and CDF construction may temporarily aggravate fish gill systems.</p> <p>Agitation of the water column during dike stone placement and during annual dredging and discharge of dredged material would temporarily cause many fish to avoid the immediate zone of project activity, until work ceased at the site.</p> <p>If feasible, consideration will be given to limited live capture and removal of some of the fish from the CDF, with subsequent release of such fish into lake water outside the CDF. Fish not captured, would unavoidably be destroyed by dredged material deposition and eventual elimination of aquatic habitat at the site</p>	<p>ST: Moderate Adverse</p> <p>LT: (1) Major Adverse (2) Minor Beneficial</p> <p>All fish habitat within the 60-acre lake area of the CDF would eventually be destroyed by filling with dredged material. The submerged outside portion of the CDF dike exposed to the lake proper, would provide about 6.5 acres of irregular, long-term stone substrate as habitat for fish.</p> <p>Similar turbidity, water column, and benthic fishery impacts as indicated for Site 108 (15-Year).</p>
<b>Vegetation</b>	<p>ST: Not Significant</p> <p>LT: Not Significant</p>	<p>ST: Minor Adverse</p> <p>LT: Moderate Beneficial</p> <p>Loss of some aquatic submergent plants - predominantly filamentous algae.</p> <p>Some minor loss or disruption on scattered growth of herbaceous and woody vegetation along the terrestrial shoreline bank in the project zone.</p> <p>Natural establishment of aquatic vegetation would likely temporarily occur over the CDF site, as water becomes shallower, and dredged material accumulations temporarily create damp mudflats.</p> <p>Submerged stone on outside dike slopes of the CDF would provide long-term hard substrate for filamentous algae attachment.</p> <p>Eventual conversion of the deep water site to about 68 acres of terrestrial land, that, if left undeveloped, would become invaded with native grasses, forbs, shrubs, and trees.</p>	<p>ST: Minor Adverse</p> <p>LT: Moderate Beneficial</p> <p>Loss of some aquatic submergent plants - predominantly filamentous algae.</p> <p>Submerged stone of outside dike slopes of the CDF would provide long-term substrate for some filamentous algae attachment.</p> <p>Eventual conversion of the deep water site to about 60 acres of terrestrial land that would become established with vegetation as described for CDF Site 108 (15-year).</p>

Table 5 - Comparative Impacts of Detailed Plans (Cont'd)

Evaluation Parameter	(Without Project Conditions)	No Action	Site 108 (15-Year) Confined Disposal Facility	Burke East Site (15-Year) Confined Disposal Facility
Wetlands	: ST: Not Significant		: ST: Not Significant	: ST: Not Significant
	: LT: Not Significant		: LT: Not Significant	: LT: Not Significant
			: Construction of Site 108 (15-Year)	: Construction of the Burke East (15-Year)
			: would have no significant adverse impact	: on small, scattered pockets of wetlands
			: on small remaining scattered pockets of	: in nearby existing CDF Site 12. There
			: wetlands in nearby existing CDF Site 12.	: are no other nearby wetlands in the general
			: There are no other nearby wetlands in the	: project locale.
			: general project locale.	
			: ST: Moderate Adverse	: ST: Moderate Adverse
			: LT: (1) Moderate Adverse	: LT: (1) Moderate Adverse
Wildlife	: LT: Not Significant		: (2) Moderate Beneficial	: (2) Moderate Beneficial
			: Similar short & long term impacts on	: aquatic bird habitat during stone dike
			: wildlife as described for the Burke East	: construction, as well as during any future dike
			: (15-Year) CDF, except that:	: maintenance periods, and when dredged material
			: About 68 acres of open water area would:	: is being actively discharged into the CDF.
			: eventually be converted from habitat used	: . Eventual long-term loss of open water
			: by aquatic birds, to terrestrial habitat	: . Aquatic bird resting & feeding habitat
			: for upland wildlife;	: (60 acres), with resultant conversion of the
			: . Dike stone above the waterline would	: site to terrestrial wildlife habitat that
			: provide about 5,050 linear feet of stable	: would attract upland birds and small mammals.
Threatened and Endangered Species			: long-term resting/loafing habitat for	: . Dike stone above the waterline would
			: gulls, terns and some other bird species.	: provide about 5,650 linear feet of long term
			: . The calmer pooled area as well as the	: resting/loafing habitat around the CDF perimet
			: poorly drained dredged material (exposed	: for seagulls, terns, and possibly some other
			: above the waterline) in the CDF, would	: bird species.
			: likely attract aquatic birds such as sea-	
			: gulls, waterfowl, and shorebirds, until the:	
			: site becomes better drained and more	
			: vegetated. Eventually, terrestrial veget-	
			: ation establishment would provide habitat	
		: similar to that provided by the existing		
		: nearby CDF Site for use by upland bird		
		: species. Attraction to the site by birds		
		: may be a potential temporary nuisance or		
		: hazard to aircraft utilizing the Burke		
		: Lakefront airport.		
		: ST: Not Significant	: ST: Not Significant	
		: LT: Not Significant	: LT: Not Significant	
		: . It is possible that on occasion, tran-	: . No significant adverse impact on	
		: sient individuals of piping plover and	: threatened or endangered species, as	
		: Indiana bat - both Federally listed endan-	: described for the Site 108 (15-Year)	
		: gered species - may briefly visit the area,	: alternative plan.	
		: since the vicinity of Cleveland Harbor is		
		: within the overall habitat range of these		
		: two species. Due to the project type and		
		: location, no significant adverse impacts on:		
		: this plover or bat is anticipated by con-		
		: struction of the Site 108 (15-Yr.) CDF.		



Table 5 - Comparative Impacts of Detailed Plans (Cont'd)

Evaluation Parameter	(Without Project Conditions)	Site 10B (15-Year) Confined Disposal Facility	Burke East Site (15-Year) Confined Disposal Facility
<u>HUMAN ENVIRONMENT</u> <u>MAN-MADE RESOURCES</u>			
Community and Regional Growth	<p>No Action</p> <p>Moderate Adverse</p> <p>Major Adverse</p> <p>If the harbor channels could not be maintained for lack of a dredged material discharge area and allowed to silt in, enterprises and individuals dependent on the channels to allow navigation and shipping would suffer economically and may eventually be displaced.</p>	<p>Moderate Beneficial</p> <p>Major Beneficial</p> <p>Development of this alternative would allow for continued harbor channel maintenance dredging and confined discharge of polluted dredged material for about 15 years. About a 68-acre Outer Harbor area adjacent to Burke Lakefront Airport available for development. Probable long-term land use to expand or relocate airport facilities possibly making room for other Lakefront developments. Port Authority and City of Cleveland favor this site and would commit to local costs, including relocation of sewer lines.</p>	<p>Minor Beneficial</p> <p>Moderate Beneficial</p> <p>Development of this alternative would allow for continued harbor channel maintenance dredging and confined discharge of polluted dredged material for about 15 years. About a 60-acre Outer Harbor area adjacent to the old CDF Site 12 available for development. Probable long-term land use to expand or relocate airport facilities possibly making room for other Lakefront developments. Port Authority and City of Cleveland do not favor this site. Water quality and land use concerns.</p>
Displacement of People	<p>Minor Adverse</p> <p>Moderate Adverse</p> <p>If the harbor channels could not be maintained for lack of a dredged material discharge area and allowed to silt in, enterprises and individuals dependent on the channels to allow navigation and shipping would suffer economically and may eventually be displaced.</p>	<p>Not Significant</p> <p>Not Significant</p> <p>No displacement of people. The Port Authority has obtained rights of Lake Erie bottom land from the State.</p>	<p>Not Significant</p> <p>Not Significant</p> <p>No displacement of people. The Port Authority must obtain rights of Lake Erie bottom land from the State.</p>
Displacement of Farms	<p>Not Significant</p> <p>Not Significant</p> <p>No displacement of farms.</p>	<p>Not Significant</p> <p>Not Significant</p> <p>No displacement of farms.</p>	<p>Not Significant</p> <p>Not Significant</p> <p>No displacement of farms.</p>
Business/Industry Employment/Income	<p>Moderate Adverse</p> <p>Major Adverse</p> <p>If the harbor channels could not be maintained for lack of a dredged material discharge area and allowed to silt in, enterprises and individuals dependent upon the channels to allow navigation and shipping would suffer economically and may eventually be displaced.</p>	<p>Moderate Beneficial</p> <p>Major Beneficial</p> <p>Construction of facility. Development of this alternative would allow for continued harbor channel maintenance dredging and CDF discharge of polluted dredged material for about 15 years. Dependent harbor business, industry, employment, and income would be facilitated.</p>	<p>Moderate Beneficial</p> <p>Major Beneficial</p> <p>Construction of facility. Development of this alternative would allow for continued harbor channel maintenance dredging and CDF discharge of polluted dredged material for about 15 years. Dependent harbor business, industry, employment, and income would be facilitated.</p>

Table 5 - Comparative Impacts of Detailed Plans (Cont'd)

Evaluation Parameter	No Action (Without Project Conditions)	Site 108 (15-Year) Confined Disposal Facility	Burke East Site (15-Year) Confined Disposal Facility
Public Facilities and Services	: ST: Minor Adverse	: ST: Moderate Adverse	: ST: Minor Adverse
	: LT: Moderate Adverse	: LT: Moderate Beneficial	: LT: Moderate Beneficial
	: If the harbor channels could not be maintained for lack of a dredged material discharge, associated enterprises were displaced, land use dilapidation and/or redevelopment would likely occur. Industrial and commercial processes, transportation interfaces, and public facilities, services and utilities would need to be altered accordingly.	: Six sewer outflows would need to be extended through the CDF site. Development of this alternative would provide for continued harbor channel maintenance and CDF discharge of polluted dredged material for about 15 years. Dependent enterprises and associated facilities and services would likely be maintained. No significant disruption to public facilities or services would be expected due to project development. Created embayment sewer outflow water quality concerns.	: Development of this alternative would provide for continued harbor channel maintenance dredging and CDF discharge of polluted dredged material for about 15 years. Dependent enterprises and associated facilities and services would likely be maintained. No significant disruption to public facilities or services would be expected due to project development. Created embayment sewer outflow water quality concerns.
Recreational Resources	: ST: Minor Adverse	: ST: Minor Adverse	: ST: Minor Adverse
	: LT: Minor Adverse	: LT: Minor Beneficial	: LT: Minor Beneficial
	: If the harbor channels could not be maintained for lack of a dredged material discharge area and allowed to silt in, enterprises (including recreational) dependent upon the channels for navigation would suffer economically and could be displaced. Recreational navigation for deeper draft vessels, particularly sail boats could be reduced. Alternate recreational developments could occur.	: Development of this alternative would provide for continued harbor channel maintenance dredging and CDF discharge of polluted dredged material for about 15 years. About a 68-acre Outer Harbor (boating) area adjacent to Burke Lakefront Airport lost. Pedestrian/fisherman access is a long term lakefront development consideration (peripheral) possibly facilitated/accommodated by CDF related future airport facility relocation or expansion. Should be consistent with ODNR lakefront park plans.	: Development of this alternative would provide for continued harbor channel maintenance dredging and CDF discharge of polluted dredged material for about 15 years. About a 60-acre Outer Harbor (boating) area adjacent to the old Site 12 CDF lost. Additional stone dike (fishery habitat). Pedestrian/fisherman access is a long-term lakefront development consideration (peripheral) possibly facilitated/accommodated by CDF related airport facility relocation or expansion. Existing marina view and access concerns. Should be consistent with ODNR lakefront park plans.
Property Values and Tax Revenues	: ST: Minor Adverse	: ST: Minor Adverse	: ST: Minor Adverse
	: LT: Moderate Adverse	: LT: Minor Beneficial	: LT: Minor Beneficial
	: If the harbor channels could not be maintained for lack of a dredged material discharge area, and enterprises were displaced, associated land use dilapidation and/or redevelopment would likely occur. Higher property values and associated tax revenues associated with industrial and commercial channel access lakefront developments would likely be lost to less intensive lakefront and recreational-type developments.	: Construction of facility. Local project cost share. Development of this alternative would provide for continued harbor channel maintenance and CDF discharge of dredged polluted material for about 15 years. This would serve to maintain existing harbor channel dependent enterprises, property values, and associated tax revenues. About 68 acres of waterfront property would eventually be created adjacent to Burke Lakefront Airport. Site 12, and likely utilized to expand or relocate airport facilities possibly making room for other lakefront developments.	: Construction of facility. Local project cost share. Development of this alternative would provide for continued harbor channel maintenance and CDF discharge of polluted dredged material for about 15 years. This would serve to maintain existing harbor channel dependent enterprises, property values, and associated tax revenues. About 60 acres of waterfront property would eventually be created adjacent to the old CDF Site 12, and likely utilized to expand or relocate airport facilities, possibly making room for other lakefront developments.

Table 5 - Comparative Impacts of Detailed Plans (Cont'd)

Evaluation Parameter	(Without Project Conditions)	Site 108 (15-Year) Confined Disposal Facility	Burke East Site (15-Year) Confined Disposal Facility
Noise and Aesthetics	No Action		
	ST: Not Significant	ST: Minor Adverse	ST: Moderate Adverse
	LT: Minor Adverse	LT: Not Significant	LT: Moderate Adverse
	. If the harbor channels could not be maintained for lack of a dredged material discharge area, and enterprises were displaced, associated land use dilapidation and/or redevelopment would likely occur. Associated changes in noise and aesthetics.	. Project construction noises and aesthetics. Similar to existing harbor noises and aesthetics. Probable long-term land use to expand or relocate airport facilities. Pedestrian and fisherman access is a consideration in long term lakefront development (peripheral) possibly facilitated/accommodated by CDF related future airport facility relocation or expansion.	. Project construction noises and aesthetics. Similar to existing harbor noises and aesthetics. Probable long-term land use to expand or relocate airport facilities. Construction of this facility would alter distant views to and from the lake in the vicinity of the East Basin. Created embayment sewer outflow water quality concerns. Pedestrian and fisherman access is a consideration in long-term lakefront development (peripheral) possibly facilitated/accommodated by CDF related future airport facility relocation or expansion.
Community Cohesion	Moderate Adverse	Minor Adverse	Moderate Adverse
	Major Adverse	Moderate Beneficial	Minor Beneficial
	. If the harbor channels could not be maintained for lack of a dredged material discharge area, channel navigation dependent enterprises (which could suffer economically and may eventually be displaced) would likely be gravely concerned.	. Development of this alternative would allow for continued harbor channel maintenance dredging and CDF discharge of polluted dredged material for about 15 years. Dependent enterprises would be facilitated. About a 68-acre Outer Harbor (protected and littoral) area adjacent to Burke Lakefront Airport would be lost. Port Authority and City of Cleveland favor this site and would commit to local costs, including relocation of sewer lines.	. Development of this alternative would allow for continued harbor channel maintenance dredging and CDF discharge of polluted dredged material for about 15 years. Dependent enterprises would be facilitated. About a 60-acre Outer Harbor (protected and littoral) area adjacent to old CDF Site 12 would be lost. Port Authority and city of Cleveland do not favor this site. Water quality and land use concerns.
CULTURAL RESOURCES	Not Significant	Not Significant	Not Significant
	Minor Adverse	Not Significant	Not Significant
	. If the harbor channels could not be maintained and enterprises were displaced, associated land use dilapidation and/or redevelopment would likely occur. Unless cultural resources studies were conducted, it is probable that cultural resources would be disturbed or lost due to land use changes.	. The results of cultural resources review and coordination with the SHPO indicate that the considered project would have no effect on properties listed or eligible for listing on the National Register of Historic Places.	. The results of cultural resources review and coordination with the SHPO indicate that the considered project would have no effect upon properties listed or eligible for listing on the National Register of Historic Places.

## SECTION 3 - ENVIRONMENTAL SETTING AND AFFECTED ENVIRONMENT

### INTRODUCTION

3.01 The purpose of this section is to present an overview of the environmental setting in the general vicinity of the potential project, in order to provide a basis by which to assess impacts and evaluate the various alternative plans (Figures 1, 2, 3, and 4).

### GENERAL ENVIRONMENTAL CONDITIONS

3.02 Cleveland Harbor, Ohio is located at the mouth of the Cuyahoga River on the south shore of Lake Erie. By water, the port is approximately 176 statute miles west of Buffalo Harbor, New York and 96 miles east of Toledo Harbor, Ohio. Federal navigation channels in Cleveland include those in the Outer Harbor, the Old River Channel, and the Cuyahoga River Channel. Most sediments dredged from these channels are classified as polluted and not suitable for unrestricted open-lake discharge. Confined disposal facilities (CDF) have been developed and utilized within the harbor area for disposal of dredged material over the last few decades. The CDF currently being utilized (CDF 14) is approaching fill capacity. Continued dredged material disposal procedures need to be identified and considered.

3.03 Cleveland is an important Great Lakes port city. The population in the Cleveland and Cuyahoga County vicinity is about 1,445,400. Because of its location and transportation facilities, Cleveland has become an important local, State, Regional, National, and World center of industry and commerce. Commodities which move through the Harbor include: limestone, iron ore, cement, sand, gravel, salt, oil, grain, and general cargo. Land use in the Cleveland Harbor areas is generally a mix of industrial, commercial, transportation, recreational, and some residential.

3.04 Water quality in Cleveland Harbor appears to be characteristic of an urban-industrial-commercial harbor area. A study done in the early 1970's (Gerlauskas, 1974) mentioned some local areas of water quality degradation in the vicinity of Cleveland Harbor. However, some improvements have been noted in the past decade. Available information from USEPA STORET data (1984) obtained from a water sampling site closest to the potential project locale - at a location in Lake Erie along the Cuyahoga River shoreline - indicated no exceedance of State water quality parameters for cadmium, chromium, copper, lead, and zinc.

3.05 The general vicinity of Cleveland Harbor provides habitat for a variety of forage and game fish. Some of the fish species utilizing the harbor include: channel catfish, brown bullhead, black bullhead, stonecat, trout perch, brook silverside, white bass, white crappie, black crappie, rock bass, largemouth bass, warmouth, green sunfish, bluegill, pumpkinseed, walleye, yellow perch, logperch, gizzard shad, white sucker, orange spotted sunfish, tadpole madtom, freshwater drum, carp, and northern pike. The Fish and Wildlife Coordination Act report (USFWS, 1993) briefly summarizes results of the fall 1988 - spring 1989 biological field study conducted by the USFWS for the Buffalo District (Appendix EIS-C).

## SIGNIFICANT RESOURCES

3.06 The following environmental resources/parameters were evaluated but, in this case, were not found to be: either significant to the project areas and therefore would not be significantly affected by implementation of any of the detailed plans; or of some significance to the project areas, but would not be significantly affected by any of the detailed plans. The parameters include: wetlands, threatened and endangered species, displacement of people, displacement of farms, recreational resources, property value and tax revenue, and cultural resources.

3.07 The following are environmental resources/parameters which were evaluated and, in this case, were found to be of some significance to the project areas, and could be affected (adversely or beneficially) with some significance by implementation of any of the detailed plans. The parameters include: air quality, water quality, sediment quality, benthos/plankton, fisheries, vegetation, wildlife, community and regional growth, business and industry and employment and income, public facilities and services, noise and aesthetics, and community cohesion.

### NATURAL ENVIRONMENT (RESOURCES)

3.08 Air Quality: The potential project area lies within the Ohio Air Quality Control Region (AQCR) referred to as Cleveland #174. Boundaries for each region were set by consideration of air pollution levels, population density, geography, and common meteorological conditions. As indicated in the Ohio Air Quality Report for 1989 (Ohio Environmental Protection Agency), the following criteria pollutants were monitored: total suspended particulates (TSP), Sulfur Dioxide (SO<sub>2</sub>), particulate matter smaller than or equal to 10 micrometers (PM<sub>10</sub>), Nitrogen Dioxide (NO<sub>2</sub>), Carbon Monoxide (CO), Ozone (O<sub>3</sub>), and lead (Pb).

3.09 According to the aforementioned report, intermittent ambient air quality monitoring of TSP and Pb was conducted in 1989 at 18 Government and 2 industrial operated sites in Cuyahoga County. PM<sub>10</sub> was intermittently monitored at 18 Government-operated sites. Continuous ambient air quality monitoring was conducted for SO<sub>2</sub>, oxides of nitrogen, CO, and O<sub>3</sub> at Government-operated sites. The TSP highest annual geometric mean concentration for Cuyahoga County was 114 micrograms per cubic meter (ug/m<sup>3</sup>), which is above the primary standard of 75 ug/m<sup>3</sup>. The highest geometric mean concentration for PM<sub>10</sub> in Cuyahoga County was 52 ug/m<sup>3</sup>, which is slightly above the Federal and State EPA primary annual standard of 50 ug/m<sup>3</sup> annual arithmetic mean, but below the primary 24-hour standard of 150 ug/m<sup>3</sup>. The SO<sub>2</sub> highest arithmetic mean concentration for Cuyahoga County was 48 ug/m<sup>3</sup>, which is below the Federal and State EPA primary standard of 80 ug/m<sup>3</sup>. The NO<sub>2</sub> highest annual arithmetic mean concentration in the County was determined to be 64 ug/m<sup>3</sup>, which is below the primary standard of 100 ug/m<sup>3</sup>. The highest quarterly mean concentration reading for Pb recorded was 0.17 ug/m<sup>3</sup> - which is below the primary standard of 1.5 ug/m<sup>3</sup>. With regard to CO, the Ohio EPA report indicates that the second highest 8-hour concentration of CO recorded in the County was 8.2 parts per million (ppm), which is below the primary

ambient air quality standard of 9 ppm for this time period. The highest one-hour concentration of  $O_3$  recorded was  $241 \text{ ug/m}^3$ , which is just below the standard of  $244 \text{ ug/m}^3$ .

3.10 Water Quality: Relative to water quality, Ohio EPA has developed standards that outline criteria that apply to all waters in the State, as well as specific use designations for Ohio's Lake Erie coastal zone. Some background information on ambient water quality in the general vicinity of Cleveland Harbor was obtained from a report by A. B. Gerlauskas entitled, "Water Quality Baseline Assessment for Cleveland Area - Lake Erie Volume 1 - Synthesis (1974)", as well as from a Remedial Action Plan (RAP) Fact Sheet by the Center for Great Lakes and from data recently retrieved via U.S. Environmental Protection Agency (USEPA) storet.

3.11 As indicated in Chapter 3745-1 of the Ohio EPA Water Quality Standards Administrative Code, the following general water quality criteria apply to all surface waters of the State including mixing zones - "Such waters shall be: a) Free from suspended solids or other substances that enter waters as a result of human activity, and that will settle to form putrescent or otherwise objectionable sludge deposits, or that will adversely affect aquatic life; b) Free from floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly or cause degradation; c) Free from materials entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life, and/or are rapidly lethal in the mixing zone; d) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae." In Ohio, Lake Erie water has been assigned the following use designations - warmwater habitat, State resource water, public water supply, agricultural water supply, and bathing waters.

3.12 Gerlauskas (1974), zones of water quality in the Cleveland lakeshore were identified. In general, water quality appeared to deteriorate from west to east along the Cleveland shoreline and improve with distance from shore. Local areas of water quality degradation occurred near the mouth of the Cuyahoga River, near the westerly and easterly wastewater treatment plants and, along the lake side of the East Breakwater opposite Burke Lakefront Airport where dredged material was deposited in past years.

3.13 A Remedial Action Plan (RAP) to improve water quality conditions in the Cuyahoga River is currently under consideration by the Ohio EPA. The following information relative to the River and RAP was obtained from a recent Great Lakes Area of Concern "FACT SHEET" and its attachment concerning remedial action plan development, that was prepared by the Center for the Great Lakes (1988). As indicated in the aforementioned reference, "some remedial actions are currently taking place independently of the RAP. The Cleveland southerly WWTP is under construction to expand capacity and improve nitrification and sludge handling facilities. Similar projects are either underway or are in the planning stages at the Southwest and Heights/Hilltop Interceptor facilities, Akron WWTP and 12 small WWTP's and package plants. Combined sewer overflow into the River will be reduced by the diversion of wastewater flow and construction of additional treatment systems, which will

reduce the volume of wastewater passing through the lines that overflow. The Cuyahoga Valley Interceptor has been completed and eliminated 2,700 septic tanks." Significant problems in the River appear to be "decreased dissolved oxygen levels, elimination of aquatic habitat, contaminated sediments containing organic/inorganic toxins, fecal coliforms, ammonia, and industrial chlorinated organics and PCB contaminated fish." Also, "primary point sources of contamination include dredging of the ship channel and shoreline development, industrial manufacturing, sewage treatment plants, oil storage facilities, and steel mills." With regard to potential nonpoint sources of contamination, urban and agricultural runoff, as well as groundwater and landfill leaching may also contribute to water quality degradation in the River. Some potential remediation recommendations for the River include "removal or burial of existing contaminated sediment, reduction or elimination of sources of new sediment contamination, completion of current and proposed wastewater treatment upgrading projects, improvement of industrial wastewater treatment and pretreatment systems, continued dredging of Cleveland Harbor and, allowance for additional measures as the RAP process continues to be developed."

3.14 Water quality information available from the USEPA STORET system indicates that the closest water sampling area to the potential project site is located in Lake Erie along the shoreline east of the Cuyahoga River. With regard to water quality parameters for which State standards have been developed, these standards were not exceeded. The most recent sampling period recorded on the STORET data sheet indicates sampling conducted in October 1984. The following parameters and ambient water quality readings were recorded (the State standard for the parameter is shown in brackets): cadmium 0.3 micrograms per liter (ug/l) [17 ug/l], chromium 30 ug/l [5000 ug/l], copper 10 ug/l [53 ug/l], lead 33 ug/l [440 ug/l], and zinc 20 ug/l [330 ug/l].

3.15 Approximately six sewer outfalls that overflow during high rainfall periods that discharge into the harbor would need to be relocated or extended. Potential impacts of these sewer outfalls may be minor degradation of water quality by temporary increased turbidity, discharge of organic matter (i.e., leaves, debris), discharge of and settling out of suspended solids, as well as possible temporary coliform bacterial increases from nonpoint sources of runoff.

3.16 Harbor Sediments: A description of sediments in the general vicinity of Cleveland Harbor, Ohio, as a result of sediment testing in 1986 and 1990 is provided in Section 1 of this Environmental Impact Statement (Page EIS-6, paragraphs 1.10 and 1.11) along with associated figures and tables.

3.17 Benthos/Plankton: Sediment grab samples were taken in 1988 at the Burke East CDF site in Cleveland Harbor by the U.S. Fish and Wildlife Service (USFWS). The Burke East site is located approximately one mile east of the proposed 10B CDF site. As addressed in their 1989 biological report, most samples of the substrate collected in 1988 were composed of mud, although some samples contained gravel, large organic particles, dead snails, and other particulates. The aforementioned report also noted that some samples contained what appeared to be gray clay. Most samples smelled of petroleum and created a slight sheen on the water. In general, the USFWS analysis of the samples revealed that benthic (aquatic earthworms), with some chironomids (midges) and mollusks (fingernail clams). The total number of oligochaetes

ranged from about 5,000 to 8,000 per square meter of sediment. It should be noted that the USFWS finding of dominance of oligochaetes in their sampling seems to reflect findings by Pliodzinkas (1979), who indicated in his report that the majority of benthic macroinvertebrates in the Lake Erie nearshore zone near Cleveland consisted of aquatic oligochaetes. Other invertebrates found in the Burke East sediment samples included crustaceans (aquatic arthropods), scuds, snails, and leeches to some degree. In their recent Fish and Wildlife Coordination Act report letter dated March 31, 1993 (Appendix EIS-G), the USFWS indicated "we believe that many of these organisms would also be found at Site 10B." The most numerous invertebrates found in the 1988 benthic sampling were bivalves (clams) of the family Sphariidae - approximately 614 per square meter in the Burke East site. With regard to the Site 10B CDF vicinity, Technical Report #G0176-11 dated August 1986, prepared for the U.S. Army Corps of Engineers, Buffalo District by AquaTech Environmental Consultants, Incorporated, provides some background benthic invertebrate information on sampling accomplished in the coastal zone of the Lake Erie during July 1986 on the north side of the Burke Lakefront Airport. Figure 15 in this Environmental Impact Statement contains an approximate benthic sampling location map where this sampling was conducted. Table 6 outlines macroinvertebrate abundance and species composition found during the July 1986 sampling in this Cleveland Harbor area. In general, around 7 to 9 species of benthic invertebrates were collected at each of six sampling stations in the East Basin. Species found included tubificid oligochaetes, fingernail clams, and a limited number of chironomids.

3.18 With regard to phytoplankton, a report prepared by Kline (1980) indicated that the phytoplankton composition in the vicinity of Cleveland Harbor during the sampling period in 1978 consisted of the following dominant algal groups: Baccillariophyta (diatoms), Chlorophyta (green algae), Chrysophyta (Chrysophytes), and Cyanophyta (blue green algae). The report indicated that "total phytoplankton densities were highest in late spring (spring diatom pulse) and late summer (summer blue-green developments). Lowest densities followed the cessation of the spring pulse. Phytoplankton densities paralleled decreasing lake temperatures during the fall collections." Also, "that total density at nearshore stations were overall slightly higher than those recorded at far nearshore stations," and "diatoms were present in samples from all areas throughout the study."

3.19 The U.S. Fish and Wildlife Coordination Act Report (USFWCAR) dated August 4, 1989 indicated that, the primary value of the area behind the East Breakwater is the 22 to 26-foot water column, which produces phytoplankton and zooplankton earlier than in the open lake due to the higher water temperature in the harbor area. This primary and secondary productivity becomes a food source for an assortment of aquatic invertebrates such as ostracods, cladocerans, copepods, amphipods, and chironomid larvae. These organisms in turn, provide a food source for larger aquatic insects and certain fish species.

3.20 Fisheries: The general vicinity of Cleveland Harbor provides habitat for a variety of fish. During 1972-1974, White et al. (1975) conducted a fishery survey in the harbor locale. Species of fish collected during that survey included channel catfish, brown bullhead, black bullhead, stonecat, trout perch, Brook silverside, white bass, white crappie, black crappie, rock bass, largemouth bass, warmouth, green sunfish, bluegill, pumpkinseed, walleye, yellow perch, logperch, and freshwater drum.



FIGURE 15

APPROXIMATE LOCATION OF BENTHIC SAMPLING STATIONS JULY 1986

Reference: Aquatec Environmental Consultants Inc. 1986

LAKE ERIE

BREAK WATER

EAST BASIN

BL-1

BL-2

BL-3

BL-4

BL-5

BL-6

BURKE

LAKEFRONT

AIRPORT

X

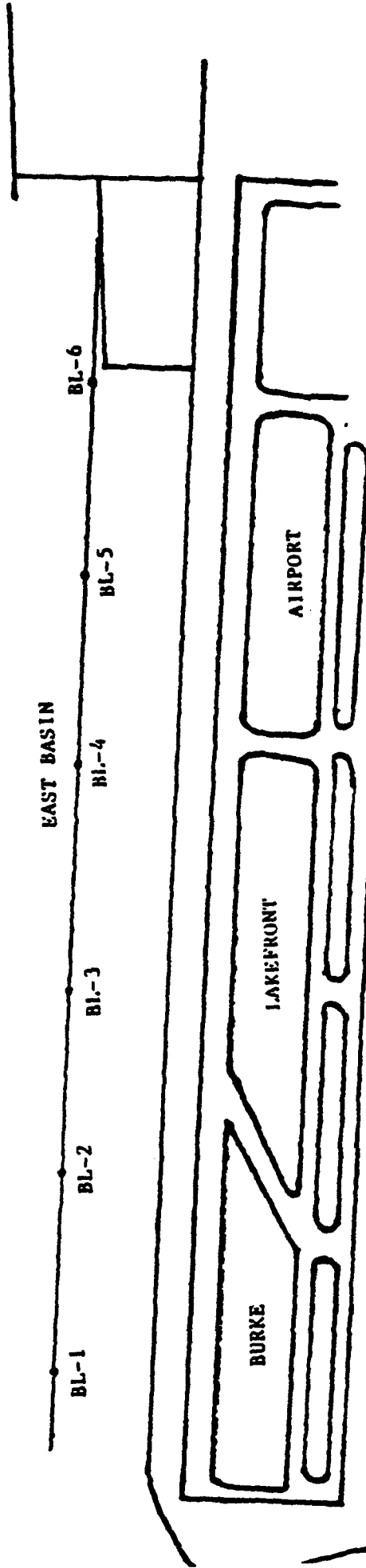


Table 6 - Benthic Macroinvertebrate Abundance and Species Composition  
from the Cleveland Harbor Area, Cleveland, Ohio - July 1986

Taxon	Site No. BL-1	Site No. BL-2	Site No. BL-3	Site No. BL-4	Site No. BL-5	Site No. BL-6
Arthropods						
Insecta						
Chironomidae						
Chironominae						
Chironomini						
Chironomus tentans						
Chironomus sp.				2(86)	2(86)	
Tanytarsini						
Constempellian sp.						
Tanypodinae						
Procladius sp.		1(43)	1(43)	1(43)	2(86)	2(86)
Crustacea						
Malacostraca						
Peracarida						
Amphipoda						
Gammarida						
Gammarus fasciatus						
Mollusca						
Pelecypoda						
Heterodonta						
Sphaeriidae		86(3698)	38(1634)	18(774)	64(2752)	24(1032)
Annelida						
Clitellata						
Oligochaeta						
Naididae						
Dero sp.		1(43)		2(86)		
Nais sp.				4(172)		
Paranis litorius						
Preistina longiseta						
longiseta						
Pristina osborni						
Specaria josinae						
Stylaria lacustris					1(43)	
Chaetogaster sp.						
Tubificidae						
Aulodrilus limnobius		10(430)	2(86)		1(43)	
Aulodrilus pigueti						1(43)
Aulodrilus pleuriseta		3(129)	1(43)	3(129)		10(430)
Limnodrilus cervix		61(2623)	25(1075)	59(2537)	26(1118)	39(1677)
Limnodrilus cervix-claparedianus intergreade						
Limnodrilus hoffmeisteri		42(1806)	21(903)	35(1505)	49(2107)	39(1677)
Limnodrilus maumeensis						
Pelosclex multisetosus		3(129)	1(43)	5(215)	1(43)	1(43)
longidentus						
Pelosclex m. multisetosus					1(43)	
Potamotheix moldeviensis						
Potamotheix vej dovskiyi			1(43)			
imat. w/ hair setae		1(43)		4(172)	1(43)	4(172)
imat. w/o hair setae		58(2494)	45(1935)	64(2752)	59(2537)	37(172)
Total No. of Organisms		266(11438)	135(5805)	197(8471)	207(8901)	157(6751)
Total No. of Taxa		8	8	9	9	7

Numbers enclosed in parenthesis indicate number of organisms per meter squared as extrapolated from the actual number of organisms collected, number of samples, and area of samples.

\* REFERENCE: AquaTech Environmental Consultants, Inc. 1986. The Analysis of Sediments from Cleveland Harbor - Technical Report #G0176-11. 181 S. Main Street, P.O. Box 436, Marion, Ohio 43302-0436.

3.21 More recently, the Corps of Engineers, Buffalo District contracted with the USFWS to conduct a biological survey at the Burke East CDF project site located within the inner Cleveland Harbor area. The survey, accomplished during the fall of 1988 and spring of 1989 seasons, included a limited fishery survey. The fall field work was conducted during October 17-18 and November 9-10, whereas the spring season field work was done during the periods of April 18-19 and May 15-16. Although the harbor contains little shallow-water habitat for fish spawning, there are a number of fish species that utilize this area. As indicated in the Biological Report on the East Basin CDF (USFWS, 1989) for the above-mentioned survey, the fall season catch on October 18 and on November 10 was dominated by gizzard shad. In addition to gizzard shad, other species such as white sucker, white bass, largemouth bass, rock bass, yellow perch, brown bullhead, and white perch were collected during both the fall and spring sampling seasons. Also, a northern pike, orange-spotted sunfish and tadpole matdorm were found in the fall 1988 sampling and, seven freshwater drum, two carp, and a smallmouth bass were captured in the spring fishery survey. During the spring season, the catch on April 19 was dominated by white perch and white suckers, whereas on May 16, the catch was dominated by white perch. The USFWCAR for the Burke East CDF dated August 4, 1989 briefly summarizes fishery survey findings addressed in the aforementioned biological survey report and points out that "it appears certain species may be more abundant in the area at certain times of the year i.e., shad in the fall and white perch in the spring." The Burke East site is in deep water and does not provide any shallow-water area, thereby limiting use of the site as spawning habitat, primarily the existing riprap dike at the east end of existing CDF Site 12.

3.22 Vegetation: The Burke East CDF site in Cleveland Harbor located about 1 mile east of the proposed CDF Site 10B (15-Year) was checked for the presence or absence of aquatic vegetation during the fall 1988 - spring 1989 biological survey conducted by the USFWS. In a letter dated June 5, 1989, the USFWS indicated that during the field survey, no aquatic macrophytes were observed in the open water zone of the CDF site, and no such plants were found in the sediment samples or in the fishery sampling nets. The only aquatic plant observed was filamentous algae attached to the submerged stone riprap of adjacent existing CDF Site 12. With regard to the general vicinity of the proposed CDF Site 10B (15-Year), vegetation along the terrestrial shoreline included the establishment of woody plants, as well as scattered growths of herbaceous weeds containing a mixture of grasses and forbs. Similar aquatic plant conditions are likely at deep water Site 10B as was found by the USFWS at the Burke East CDF alternative site during their 1988-1989 biological survey (Personal Communication with the USFWS, September 30, 1991).

3.23 Wetlands: A check of the USFWS's wetlands inventory map indicates that there are some small wetland pockets in existing nearby CDF Site 12. This CDF site was completely filled in 1979. Since then, the site has become predominantly a terrestrial area, with some small scattered pockets of wetland plants within this facility. Otherwise, there are no other known identified wetlands in the general vicinity of the proposed project site.

3.24 Wildlife: Wildlife in the general vicinity of the potential project area of Cleveland Harbor consists primarily of aquatic birds. Some indication of bird species utilizing the harbor locale was provided by the USFWS, from observations made during their fall 1988 and spring 1989

biological survey of the Burke East alternative site. The most common species seen in the fall were herring gulls, ring-billed gulls, and some mallard ducks. In April 1989, a variety of waterfowl and other birds were seen, including the aforementioned species as well as Bonaparte's gull, common merganser, scaup, ring-necked duck, bufflehead duck, woodducks, common terns, Canada geese, red-winged blackbird, Great blue heron, and two terrestrial bird species - the common flicker and American robin.

3.25 Also, wildlife observations by a Corps of Engineers ecologist were made at nearby existing CDF sites - CDF Site 12 located on the west side of the proposed Burke East project site, and CDF Site 14 located about 2 miles east of the proposed project area. Furbearer utilization of both existing CDF sites was noted from tracks left by raccoon, cottontail rabbit, pheasant, and muskrat. It is also possible that mink and weasel, in addition to snakes, mice, voles, and moles, may use these CDF habitats to some degree. Observations by local ornithologists have also noted a variety of aquatic and terrestrial bird species at CDF Site 14 such a pied-billed grebe, bitterns, other species of dabbling and diving ducks (i.e., teal, pintail, shoveler, black ducks, hooded merganser), swans, and shorebirds.

3.26 Threatened or Endangered Species: As stated in the Fish and Wildlife Coordination Act report for CDF Site 10B, dated March 31, 1993: "The proposed project lies within the range of the Indiana bat and piping plover, Federally endangered species. Due to type of habitat in the project area, the project, as proposed, will have no impact on these species."

#### HUMAN ENVIRONMENT (MAN-MADE RESOURCES)

3.27 Community and Regional Growth: The City of Cleveland, Ohio is located on the south shore of Lake Erie, about 176 miles southwest of Buffalo, New York, and about 96 miles East of Toledo, Ohio. Cleveland is an important Great Lakes port city. Because of its location and transportation facilities, it has become an important local, State, Regional, National, and World center of industry and commerce. This is expected to continue into the future. Reference Figures 1, 2, 3, and 4.

3.28 Population - In 1986, the population for the City of Cleveland was 535,830. The population for Cuyahoga County was 1,445,400. The population for the Primary Metropolitan Statistical Area (PMSA) which includes Cuyahoga, Geauga, Lake, and Medina Counties was 1,850,300. Population projections indicate that the city and regional populations are expected to moderately decrease then increase through the year 2035.

3.29 Cleveland Harbor and Associated Water and Land Use and Developments - Cleveland Harbor breakwater facilities, navigation channels, Site 14 CDF, and associated upland areas are depicted on Figures 2, 3, and 4.

3.30 Navigation features provide protection and facilitate shipments of commercial commodities such as limestone, iron ore, cement, sand, gravel, salt, oil, grain, and general cargo into, out of, and around Cleveland Harbor. Navigation features also provide protection and facilitate docking and movement of recreational vessels in and around Cleveland Harbor.

3.31 The Cleveland Harbor area consists of a breakwater-protected Lakefront Outer Harbor in Lake Erie and improved navigation channels in the Cuyahoga

River and Old River. The Lakefront Outer Harbor encompasses about 1,300 acres and extends for about 5 miles along the shoreline. There are two harbor entrances. The west or main entrance is located offshore of the mouth of the Cuyahoga River and has a lake approach depth of 29 feet below LWD and an entrance channel depth of 28 feet. The East Approach and Entrance Channels are located at the end of the East Breakwater and have a depth of 28 feet. The East Basin channel depth is 25 feet.

3.32 The navigation channel in the Cuyahoga River extends upstream about 5.8 miles. It has an authorized depth of 28 feet to a point upstream of the Old River and an authorized depth of 23 feet from that point to the head of navigation. The Old River navigation channel is about 1 mile long and has an authorized depth of 27 feet, but is presently maintained to a depth of 23 feet.

3.33 The currently utilized Site 14 CDF is located adjacent to the eastern end of the Lakefront Harbor adjacent to Gordon Park. The dike is stone rubblemound construction encompassing an area of about 88 acres. The estimated total capacity of the CDF, when constructed, was 6,130,000 cubic yards. Under the current dredging and discharge procedures, the remaining life of the existing CDF is only several years.

3.34 Most of the land area immediately adjacent to the Lakefront Outer Harbor, Cuyahoga River and Old River had been developed with industrial and commercial developments. In recent decades however, industrial developments have declined and mixed development including industrial, commercial, residential, and recreational developments have emerged.

3.35 Currently, most of the industrial and commercial harbor activity and development is concentrated in the Lakefront Outer Harbor - West Basin area at the mouth of the Cuyahoga River, and along the Cuyahoga River and Old River. Developments along the remaining Lakefront Outer Harbor include government land (i.e., U.S. Coast Guard Station, U.S. Army Corps of Engineers Reservation), transportation and utility developments (i.e., Interstate Route 90, rail lines, Burke Lakefront Airport, Cleveland pump station, Cleveland wastewater treatment plant, municipal light plant), and recreational developments (i.e., Edgewater Park and Marina, Municipal Stadium, North Coast Harbor, Lakeside Yacht Club, Forest City Yacht Club, East 55th Street Marina, Gordon Park and Marina). Much of the existing Lakefront Harbor land area is fill material, primarily areas previously utilized for disposal of dredged material. The Burke Lakefront Airport is built on confined disposal facility areas. The existing Site 14 CDF is expected eventually to be utilized to expand Gordon Park. Developments along the Old River and Cuyahoga River are a mix of industrial, commercial, residential, and recreational.

3.36 The City of Cleveland is undergoing considerable revitalization and redevelopment efforts as outlined in the "Cleveland Civic Vision 2000 Downtown Plan" prepared by the Cleveland City Planning Commission. In light of these developments, the community and region is in transition, working, where possible, to sustain and revitalize existing viable developments while pursuing all avenues of new and/or alternative developments. The Waterfront is seen as an important resource in these efforts and a well-planned

integrated multi-use and redevelopment of this resource is an important issue. Waterfront projects include: improvements to port facilities, possibly improvements/relocation of Burke Lakefront Airport facilities, North Coast Harbor, and multi-land use redevelopment of the Cuyahoga River (Flats) areas.

Also reference SECTION 1 - NEED FOR AND OBJECTIVES OF THE ACTION paragraphs 1.14 and 1.15 pertaining to the International Joint Commission Cuyahoga River Area of Concern and Remedial Action Plan which pertain to these parameters.

3.37 Business and Industry and Employment and Income: In 1982, there were some 32,696 business establishments (covered by Unemployment Insurance) in the Cleveland Primary Metropolitan Statistical Area (PMSA) which includes Cuyahoga, Geauga, Lake, and Medina Counties. Of these, 13 percent pertained to manufacturing, 12 percent pertained to wholesale trade, 41 percent pertained to retail trade, and 33 percent pertained to service industries. Major manufacturing industries in the Cleveland area include: primary metals, fabricated metal products, machinery, transportation equipment industries, and building products.

3.38 In 1986, of the Cleveland (PMSA) labor force of 934,291, 864,114 were employed and 70,177 were unemployed for an unemployment rate of 7.5 percent. Leading employment sectors in the Cleveland (PMSA) in 1985 (covered by Unemployment Insurance) included: manufacturing (28%), followed by service industries (27%), other (20%), retail trade (18%), and finance, insurance, and real estate (7%).

3.39 In 1985, personal income (per capita) in the Cleveland (PMSA) was about \$11,655.

3.40 Generally, in the Cleveland (PMSA), total employment is expected to moderately increase then decline through the year 2035. Some continued decline in the manufacturing employment sector is expected. Anticipated employment growth sectors include: construction; finance insurance, and real estate; and service industries. Continued moderate growth of income is anticipated.

3.41 As indicated previously, Cleveland Harbor remains important to the area business and industry and employment and income. About 400 employees are directly associated with port operations and facilities, while hundreds of thousands are indirectly affected.

3.42 Public Facilities and Services: Within the Cleveland Metropolitan area, the project vicinity is adequately serviced by major facility and service developments including: water, sewer, gas, electric, telephone, police, fire, emergency (rescue) medical, transportation, and sanitation developments. All of the various utility agencies and companies that serve the City of Cleveland have facilities in or provide service to the harbor area. As mentioned previously, waterfront redevelopment is occurring and facilities and services are being adjusted, accordingly.

3.43 Water Resources - The Cleveland Water Authority has public water supply intakes in Lake Erie to the east and west of the harbor. The Cleveland public water intake system is divided into east and west subsystems by the Cuyahoga River. The area east of the river is served by the Nottingham and Baldwin Filtration Plants. The area west of the river is served by the Division and Crown Filtration Plants.

3.44 Three sewage treatment plants serve the harbor area. The Westerly Wastewater Treatment Plant is located near the western extremity of the harbor

at the terminus of the Old River. It discharges into Lake Erie. The Southerly Wastewater Treatment Plant is located along the Cuyahoga River about 6.5 miles upstream from Lake Erie. It discharges into the Cuyahoga River. The Easterly Wastewater Treatment Plant is located 8 miles northeast of the mouth of the Cuyahoga River. It discharges into Lake Erie. Numerous storm sewers collect water and discharge into the lake and river.

3.45 Transportation - As indicated previously Cleveland Harbor is an important local, State, Regional, National, and World port. The area is also served by major rail and road ways. Major east/west highways include Interstate 90, 71, and 80. Major north/south highways include Interstate 71, 77, and 271.

3.46 The primary air transportation terminals at Cleveland are the Cleveland-Hopkins International Airport located southwest of the City, and the Burke Lakefront Airport. The Burke Lakefront Airport is used primarily for short, regional flights, while the larger Cleveland-Hopkins terminal is used by the major airlines for long-distance air travel.

3.47 Recreation: The Cleveland Harbor vicinity includes recreational boating, fishing, park, trail, and tourist areas. Figures 2, 3, and 4 depict the Cleveland Harbor area including many water-oriented recreational facilities located along the Harbor area.

3.48 Recreational boating is the most visible form of recreation in the Cleveland Harbor area. Major marinas are located along the Lakefront Harbor - East Basin, immediately west of the West Breakwater, and at the upper end of the Old River. These facilities accommodate thousands of recreational vessels. Considerable recreational boating activity (including cruising, waterskiing, and fishing) occurs both within and outside the harbor area. Harbor cruises are available to the general public on the tour ship Goodtime II.

3.49 Fishing is popular along the Harbor shoreline, and around Lakefront Harbor and vicinity breakwaters, other structures, and shoal areas from boats. A variety of fish species inhabit the Harbor area.

3.50 The closest public beach swimming facility is at Edgewater Park, located about 0.3 mile west of the base of the west breakwater. Numerous other beaches are located along Lake Erie in Cuyahoga County, although most are privately owned and open only to members of lakeshore property associations.

3.51 Court games, field games, and picnicking are available at several municipal parks and playgrounds and private beach clubs in the Cleveland Lakeshore area. The Cleveland Metroparks System, comprising more than 18,000 acres of park land, contains eleven metroparks which interface the general Cleveland area. The system contains interpretive centers, hiking trails, riding trails, bicycle trails, swimming and fishing areas, picnic areas, shelter houses, play fields, and golf courses.

3.52 Cleveland Municipal Stadium, home of the Cleveland Indians baseball team and the Cleveland Browns football team, is located near the East Basin shoreline within 1 mile of the river mouth. The Burke Lakefront Airport

is the site of professional auto racing which is a significant spectator sport for the Cleveland area and has gained National media coverage.

3.53 Recreational statistics indicate that, even with the past decrease in area population, demand for sufficient water-oriented recreational activities and facilities continues to grow. This may be attributed to several factors including: community developmental changes, improved water quality, and increased leisure time and income. Recent regional, county, and city studies also identify demands to improve and develop water-related recreational facilities including: beaches, parks, and marinas. The State, County, and City continue to develop plans and facilities in addressing these needs.

3.54 Ohio Department of Natural Resources has developed plans for the Cleveland Lakefront State Park which will provide both water and non-water related recreational facilities and will be developed over the next several decades. The "Cleveland Civic Vision 2000 Downtown Plan" calls for expansion and improvement of public access, marinas, open space, parks, and trails.

3.55 Property Values and Tax Revenue: Generally, property values (undeveloped) in the Cleveland (PMSA) which includes Cuyahoga, Geauga, Lake, and Medina counties may range from several thousand to tens of thousands of dollars per acre depending on location and terrain. The average value of farmland (land and buildings) for the Cleveland (PMSA) is roughly estimated at about \$3,300 per acre. Generally, Cleveland waterfront property (undeveloped) may range in value from several thousand to tens of thousands of dollars per acre depending upon location. An increased value is associated with lake frontage. These property values are expected to increase as water quality improves and waterfront revitalization and redevelopment programs progress.

3.56 Local tax revenues generally include revenue sharing (Federal, State, local), sales taxes, and local property and service district taxes. In Cleveland, of the general revenue raised in this manner, about 28 percent is through intergovernmental, 41 percent through taxes (of which 29.2 percent is area property taxes) and 31 percent other.

3.57 In recent decades, utilization of the Cleveland waterfront has declined, primarily with decline of industrial and shipping use. Non-utilized, under-utilized, and tax exempt properties have increased and associated tax revenues have decreased. Generally, the trend in Cleveland waterfront redevelopment is for mixed utilization. Redevelopment will generate associated increased revenues, even though a good deal of the waterfront property will likely remain public and property tax exempt.

3.58 Noise and Aesthetics: Noise and aesthetics of the harbor area is that associated with the various harbor area developments including: navigation facilities, industrial and commercial developments, transportation facilities (highways, roads, rail, airport), recreational facilities (primarily parks, marinas, the stadium), and some nearby residential developments. The primary sources of noise generation include: industrial development areas, and noise generated by vehicular movement within the area including: ships, boats, autos, trucks, trains, and planes. Areas of higher aesthetic values include shoreline areas with a view to or from the lake, parks, marinas, and some residential and/or commercial (i.e., restaurant) areas. Areas of aesthetic discern include dilapidated former water, shoreline, and upland developments.



3.59 As mentioned previously, the Cleveland waterfront is changing from primarily industrial and commercial to mixed industrial, commercial, residential, public, and recreational. Associated improvements in aesthetic characteristics are increasingly evident.

3.60 Community Cohesion: Community cohesion, as in most cases, is a result of a number of social and economic factors. Most Cleveland vicinity residents are long-time residents of varied ethnic backgrounds. Generally, community pride (cohesion) is strong. Relative to the harbor area, in the last decade, a general shift from primarily industrial and commercial activity to more mixed activity and developments has affected previous community cohesion factors and interests (Community structure and development, employment and income, environment, etc.). Community efforts have sought to sustain remaining business and industrial development, where possible, while looking forward to new alternative developmental potentials. A wide array of alternative developmental potentials are being considered, including: natural, recreational, residential, commercial and industrial development. The most likely development appears to be one of well-planned mixed usage.

3.61 Relative to continued Harbor operation and maintenance, most interests agree that the Harbor should be maintained to facilitate industry and commerce and associated community economic well-being, and that dredged material should be appropriately discharged.

#### CULTURAL RESOURCES

3.62 Cultural Resources: The City of Cleveland is abundant in cultural resources and facilities including: theaters; arts and crafts centers; museums; colleges and the University; civic centers; historic buildings, districts, and areas.

3.63 More than 40 properties in the city of Cleveland are listed on the National Register of Historic Places. Many of the City's National Register sites are located in or immediately east of the central business district. A number of bridges, structures, and districts in the lower Cuyahoga River vicinity have been identified as cultural resources of significance. The Cleveland West Pierhead Light should be considered eligible for inclusion in the National Register of Historic Places. The Cleveland West Pierhead Light and a small metal beacon on the east arrowhead breakwater mark the main entrance to Cleveland Harbor. Erected in 1909-1910, the lighthouse played an important role in the development of Cleveland Harbor.

3.64 A cultural resources survey of the Cleveland Harbor area was performed in April 1976 and was included in the Final Environmental Impact Statement prepared in 1978 in conjunction with the Cleveland Harbor Feasibility Study of 1972-1976. Subsequently, several site specific surveys were conducted relative to various considered projects. Previous coordination was conducted with the State Historic Preservation Office (SHPO) for both Site 10 and the Burke East Site potential CDF sites in August of 1986 and November of 1989, respectively. The SHPO indicated in their letter responses that, based on the information provided, it is the opinion of the SHPO that no properties listed or eligible for the National Register of Historic Places will be affected by the proposed undertaking (Appendix F).

## SECTION 4 - ENVIRONMENTAL EFFECTS

### INTRODUCTION

4.01 This section briefly compares anticipated environmental effects of the most feasible confined disposal facility (CDF) alternative plan proposals relative to the various environmental assessment evaluation parameters. It describes in more detail the anticipated impacts identified in SUMMARY Table A and Table 5 - Comparative Impacts of Detailed Plans in SECTION 2 - ALTERNATIVE CONSIDERATIONS.

### ENVIRONMENTAL EFFECTS - NATURAL ENVIRONMENT (RESOURCES)

#### Air Quality:

4.02 No Action (Without Project Conditions) - Air quality in the general vicinity of the Cleveland Harbor area would probably continue to be about the same as previously described in Section 3 of this EIS. As implied by this alternative, no Federal action would be taken to construct a project; therefore, there would be no project-related dust or exhaust emissions from construction equipment that could temporarily contribute to localized short-term degradation of air quality.

4.03 Site 10B (15-Year) CDF - Heavy equipment activity in the general vicinity of the project sites would cause some localized, temporary, short-term air quality degradation during construction of the stone dike for the CDF as well as during dredging and disposal operations. During construction and maintenance periods, particulate emissions as well as smoke and combustion odors associated with expenditure of oil and fuel needed to operate construction equipment would be anticipated.

4.04 Burke East Site (15-Year) CDF - Impacts on air quality are anticipated to be similar to those described for the Site 10B (15-Year) CDF.

#### Water Quality:

4.05 No Action (Without Project Conditions) - Since with this alternative no Federal action would be undertaken to construct a CDF, ambient water quality would not be temporarily disrupted by construction. Water quality would probably continue to remain unchanged in the Cleveland Harbor area in the near future. If a new CDF is not constructed, dredging of polluted sediments from the authorized Cuyahoga River and Cleveland Harbor navigation channels would be severely limited or would eventually have to cease, when the existing CDF nearby becomes filled to capacity with dredged material. Accumulation of polluted river sediments into the navigation channels would continue to occur. Subsequently, transport of such sediments would eventually intrude further outward into the harbor area. If a remedial action plan for the Cuyahoga River was eventually implemented by non-Federal interests, improvement in the River's water quality and subsequent water flow from the River into the harbor area, would likely contribute toward improved water quality conditions in the harbor for aesthetics, recreation uses and fish and wildlife resources.

4.06 Site 10B (15-Year) CDF - Operation of heavy equipment to place stone to construct the CDF dike would cause localized short-term, increased water turbidity due to disruption of lake-bottom substrate. The stone material is relatively inert and would not significantly adversely affect water quality. There may be some minor spillage of fuel, oil or grease into the water from heavy equipment when: (1) the CDF is being built, (2) during annual discharge of dredged material into the facility, (3) during any future stone dike maintenance periods.

4.07 Six storm sewerlines and outflows that discharge during high rainfall periods would be combined into three pipes, extended on stone bedding material and the outflows relocated, as indicated by the proposed plan. The stone bedding material and storm sewerline pipe-arch are relatively inert material and placement would not significantly adversely affect water quality. Impacts would be similar to that described for placement of dike stone material. Relocated outflow impacts would be similar to those described under existing conditions, however at the new locations. Potential impacts of these stormwater sewer outfalls may be minor degradation of water quality by temporary increased turbidity, discharge of organic matter (i.e., leaves, debris), discharge of and settling out of suspended solids, as well as possible temporary coliform bacterial increase from nonpoint sources of runoff.

4.08 Dredging of authorized navigation channels in the river and harbor would impact water quality in these immediate areas by temporarily resuspending disrupted contaminated sediments into the water column. Removal of polluted sediment accumulations from these channels would create a settling basin that would continue trapping such material, thereby reducing potential for movement of such sediments further lakeward.

4.09 When polluted dredged material is discharged into the CDF annually, turbidity outside the CDF due to spillage is expected to be minor, since discharge of such sediments would be accomplished via clamshell or a slurry pipe leading directly from a dredge vessel into the CDF.

4.10 Two major processes occur when dredged material is placed in the CDF to separate sediments and associated adsorbed pollutants (most pollutants are adsorbed to sediment particulates) from the water. (1) Sediments and pollutants are filtered out while some effluent passes through the dike wall and (2) sediments and pollutants settle out from the ponded water column after which the relatively clean water is left to evaporate or is decanted from the CDF through the CDF overflow discharge control weir. These processes continue to some degree during and after fill of the CDF.

4.11 Short-term impacts during disposal of dredged material into the CDF would include temporary increased turbidity in the facility, temporary increase in dissolved and particulate contaminant levels within the CDF, and temporary increase in the CDF pool level. Some filtration of effluent may occur through the stone dike until eventually silt, sediment, detritus, and bacterial slime within the CDF contribute toward decreasing such movement through the dike as voids among the stones are plugged and/or decreases in size by such material. When the CDF is filled to about average lake level, after dredged material is deposited in the CDF and allowed to settle, some excess effluent may be drained from the CDF through the overflow weir discharge. Four to six feet of water may be pooled in the CDF for settling

after a disposal operation. When the desired suspended solids concentration (<100 milligrams per liter) is reached in overlying water, the water may be slowly discharged over the weir by successive weir board removal. This discharge may, at specific times, require a mixing zone to meet any known State water quality standards. Discharge of effluent over the weir may cause temporary increased water turbidity and metal concentration (adhering to sediment particulates) within the mixing zone outside the stone dike.

4.12 Solids concentrations for water discharged over the weir would (tentatively) be limited to below 100 mg/l. This is a developed standard which the Buffalo District considers to be a reasonably achievable standard that has been acceptable to other agency interests. Generally, it takes from one to several or more days for polluted sediments discharged into the CDF to settle out from the water column to a 100 mg/l particulate concentration at the overflow weir discharge site, depending on a number of variables including: discharge method, slurry characteristics, and receiving water conditions (i.e., wave turbidity, etc.). Prior to discharge through the CDF overflow weir, water sampling is conducted to determine ponded water particulate concentration. A flocculent may be added at times during dredged material discharge to accelerate settling, in order to maintain an outflow particulate concentration at or below 100 mg/l. Filter devices (i.e., filter fabric) have also been utilized to further restrict particulate and associated pollutant level outflow from the overflow weir.

4.13 Any effluent discharged through the CDF weir would be required to meet State water quality standards or waivers thereof for all chemical constituents before or after the application of an appropriate mixing zone. The size of any small mixing zone (if needed), would be determined in coordination with the Ohio EPA after their review of the application for a 401 Certification for use of the CDF weir, via the Public Notice and Section 404(b)(1) Evaluation. Monitoring (testing) will continue periodically in the future to determine future on-going needs/adjustments and prior to use of the overflow weir.

4.14 Column settling, column leachate, and column filtration testing (i.e., most recently - Aqua Tech Environmental Consultants, Inc. 1990 and 1991) has been conducted on sediments from Cleveland Harbor. Testing, coordination, and precedence indicate that the CDF processes including: adsorption and settling, dike filtration and flow-through, plugging and further settling, and weir discharges (limiting suspended solids to 100 mg/l or less) should achieve effluent water quality standards for receiving water.

4.15 Construction and operations adverse impacts from CDF construction dredging, and disposal may be minimized by application of practical environmental protection measures as referenced in paragraphs 2.50, 2.57 through 2.61, and 2.62 through 2.74

4.16 Long term impact on the project site would involve a progressive decrease in amount of aquatic habitat within the CDF as fill material displaces the pool water volume during each discharge operation. The stone dike of the CDF would locally alter current patterns to some degree in the general vicinity of the coastal zone where the project was implemented. Also, submerged dike stone would provide a hard substrate habitat for potential zebra mussel attachment and establishment.

4.17 These items are discussed in some further detail in SECTION 2 - ALTERNATIVE CONSIDERATIONS under THE RECOMMENDED PLAN, CONTINUED HARBOR OPERATION AND MAINTENANCE and THE CONFINED DISPOSAL FACILITY AND DIKE FILTRATION PROCESS and more specifically in APPENDIX EIS-EA-B PUBLIC NOTICE AND SECTION 404(b)(1) EVALUATION REPORT of this EIS.

4.18 Burke East Site (15-Year) CDF - CDF construction, dredging, and disposal impacts would be expected to be similar to those described for the Site 10B (15-Year) CDF. The water area between the proposed Burke East CDF dike and shoreline would be provided some increased protection from wind-generated wave action in the harbor. Short-term lake level changes would continue to provide some contribution toward mixing the harbor waters - even though under existing conditions there is little water circulation in the project locale. Some leaching of effluent would be anticipated through the stone dike of the proposed CDF. The amount of effluent passing through the dike would probably be significantly reduced once dredged material and bacterial slime covers submerged stones along the inner dike slope, and sediment and detritus contribute toward plugging up the stone interstices. Discharge of effluent over the weir, as well as reference to the mixing zone, description of potential impacts of dredged material disposal into the CDF, and impacts of removing polluted sediment from the navigation channel would be similar to that described for the Site 10B (15-Year) CDF above.

4.19 Since the Burke East alternative plan was reduced in size to 60 acres, the open water gap between the proposed CDF and the East 55th Street Marina breakwater has been expanded to about 600 feet, thereby providing a greater opening for water exchange and circulation between the marina bay areas to the southwest of the 55th Street Marina and the general harbor area. As previously indicated, under existing conditions for southwest flow, there is an expansion in the flow, creating a back eddy located at the existing CDF #12 and extending to the entrance of the East 55th Street Marina; similarly, for a northeast existing flow a smaller eddy is created due to flow compression. Construction of the Burke East Site (15-Year) CDF would probably shift the location of these eddies to the northeast and off the northeast 55th Street Marina breakwater instead of being at the Marina entrance. The new eddies would be smaller in extent when compared to the original eddies. The eddy current off the marina entrance would either be eliminated or reduced in magnitude.

4.20 Although there are three storm sewer outfalls emptying into sheltered bay areas, it is anticipated that with a southwest flow through the harbor there would probably be no circulation problems associated with these outfalls. For low sewer outfall flows - which occur over a very small percentage of the time - there could possibly be a minor circulation problem caused by a northeast flow through the harbor. With the long-shore current and prominent wind direction being from the southeast or west, the northeast condition would probably occur over a small percentage of time.

#### Harbor Sediments:

4.21 No Action (Without Project Conditions) - With this alternative, no action would be taken to construct a project. Once the existing disposal facility at CDF Site 14 is filled to capacity, dredging in the Cuyahoga River and Cleveland Harbor navigation channels would be severely limited or would eventually have to cease, since there would be no containment facility within which to deposit dredged polluted sediments. Sediment would continue to accumulate in the Cuyahoga River navigation channels and migrate from the River into the Harbor Basin areas.

4.22 Site 10B (15-Year) CDF - Construction of this CDF would allow for continued long-term maintenance dredging in the Cuyahoga River and Cleveland Harbor navigation channels, confinement of dredged polluted sediment, and removal of such polluted material from the riverine system. Removal of contaminated sediments would temporarily improve sediment quality in dredged areas. Dredged navigation channels in the River and harbor would help facilitate remediation of these areas in that, these dredged locations would create temporary settling basin that would trap polluted sediment carried downstream by River flows, thereby preventing or reducing potential for transport of such material into Lake Erie. Quality of sediment in dredged areas would probably improve to some degree, because new sediments trapped in the dredged channels would likely be replaced by less polluted shoal material. With regard to stormsewer outfalls, if such outfalls are relocated, it is anticipated that the effluent discharge for such facilities would not have a significant adverse impact on sediment quality in the mixing zone, due to the likelihood of greater dispersion of such discharge into deep water of the lake in the vicinity of the new discharge site. However, removal of polluted sediments from the River and discharge in to Site 10B (15-year) located along the shoreline of Lake Erie at Cleveland, Ohio, would further contribute to continued long-term filling encroachment into the open-water environment of Lake Erie.

4.23 Burke East Site (15-Year) CDF - Impacts regarding Harbor sediments are anticipated to be similar to those described for the Site 10B (15-Year) CDF.

Benthos/Plankton:

4.24 No Action (Without Project Conditions) - Since there would be no Federal action to construct a CDF with this alternative, no significant change in existing benthic organism and plankton conditions in Cleveland Harbor in the near future would be anticipated. In the long-run, with severely limited dredging, sediments would fill the deep navigation channels. This in turn would provide substrate in shallower water upon which benthic invertebrates could colonize. Filling of navigation channels would reduce the amount of water column availability for use as habitat by plankton (i.e., passively floating or weakly swimming minute plant and animal organisms).

4.25 Site 10B (15-Year) CDF - Placement of stone to construct the dike for the CDF would cover about 25 acres of existing lake-bottom benthic substrate, that would crush, smother, disrupt, and/or displace benthic invertebrates. Dredging and turbidity would periodically temporarily disrupt benthos/plankton in the dredging activity area. Annual discharge of dredged material into the CDF would progressively decrease the amount of water column available for use by plankton each year within the 68-acre discharge site. Eventually, the entire water column in the CDF would be displaced by dredged material and change the habitat from aquatic to terrestrial, thereby rendering the site as no longer available for utilization by plankton, or as habitat for benthic organisms. Although substrate for benthic organisms and water column for phytoplankton and zooplankton would be temporarily available within the CDF, until dredged material filled the facility above the water line, there would be disruption to such organisms within the CDF during annual discharge of dredged material. Also, each year of dredged material filling would decrease the volume of the water column available for plankton. Submerged stone along the lakeside facing dike slope would provide about 9 acres of new irregular hard bottom substrate surface area for benthic invertebrate colonization.

4.26 Burke East Site (15-Year) CDF - Impacts on benthos and plankton are anticipated to be similar to those described for the Site 10B (15-Year) CDF alternative plan, except that about 19.5 acres of benthic substrate and associated invertebrates would be affected and the CDF site would be somewhat less in size - total area about 60 acres. Submerged dike stone surfaces along the lakeward facing dike slope would provide about 6.5 acres of irregular hard bottom substrate for benthic invertebrate colonization. With regard to loss of existing stone, about 1.4 acres of stone along the east end of the existing old CDF #12 dike would be eliminated from use as benthic organism habitat when the Burke East CDF site was completely filled.

#### Fisheries:

4.27 No Action (Without Project Conditions) - No CDF construction related adverse impacts to fish habitat and fish species would occur. Environmental conditions in the vicinity of Cleveland Harbor for fisheries would probably not be significantly altered in the near future. Without dredging, the navigation channels would start filling in with sediment deposits, thereby annually making such waterways shallower with regard to fish habitat until eventually, some steady-state in the river/lake bed was attained. Some shoaling habitat might also develop for fish utilization as sediments deposit in the harbor area. Over time, as sources of pollution were rectified, cleaner sediment may be deposited over remaining polluted harbor sediments that could help improve fish habitat to some degree.

4.28 Site 10B (15-Year) CDF - Construction of this CDF would result in the eventual loss of about 68 acres of deep water fish habitat along the Lake Erie coastal zone, by covering the substrate and filling the water column with dredged polluted material inside the containment facility. Twenty-five acres of lake bed surface area would be covered by stone along the dike alignment. Although dike stone would fill in some additional water column area, the submerged irregular quarry stone and interstices among stones along the dike slope facing the lake, would provide new, long-term stable habitat that would likely attract warmwater fish species - among which could be pan fish and bass. It is estimated that submerged stone along the lakeward facing dike slope would return about a 9-acre area of fish habitat to the harbor locale. Disruption of the coastal lake site during construction of the CDF and of the harbor area during dredging would cause fish to temporarily avoid the area of disturbance. Some fish would likely be trapped within the CDF once the dike was completed. If feasible, a limited effort would be made to live trap such fish in the CDF; then, release any fish caught into lake waters outside the facility. Fish not caught would eventually be destroyed, when the aquatic habitat in the CDF is eliminated by dredged material deposition, and the site converts to terrestrial land. If sediment accumulations become less polluted in the Cuyahoga River and Cleveland Harbor in the future some decrease in the level of contamination by local bottom feeding fish species may be experienced. However, it is also possible that the level of contamination in the local fish population may not show a decrease in the level of contamination on the near future, since bottom sediments in other aquatic habitats outside the dredged navigation channels that are utilized by local fish species could be as, or more polluted.

4.29 Burke-East Site (15-Year) CDF - The impacts on fish habitat and associated fish species are anticipated to be similar to those described for Site 10B (15-Year) CDF. However, the area of adverse impact on deep water habitat would be somewhat less by about 13.5 acres. Also, the approximate area of new stone along the lakeward facing dike slope available as fish habitat would be about 1.5 acres less. Approximately 1,300 linear feet (1.4 acres  $\pm$ ) of existing submerged stone along the east end of the existing formerly constructed (and filled) CDF #12 would eventually be lost as fish habitat, when the Burke-East site was filled by dredged material.

Vegetation:

4.30 No Action (Without Project Conditions) - Since no Federal action would occur with this alternative, no disturbance of existing sparsely established vegetation (i.e., algae) would be anticipated. Such factors as deep water, turbidity, polluted substrate, commercial and recreational vessel traffic, will likely continue to be among the factors contributing to limiting habitat quality in the Harbor area for establishment and growth of submergent aquatic plants.

4.31 Site 10B (15-Year) CDF - No significant adverse impact is anticipated on aquatic vegetation, since project sites are in deep, turbid water and no aquatic vegetation was found during previous field observations by the U.S. Fish and Wildlife Service. Some existing scattered shrubs, forbs, and grasses may be disrupted or destroyed along the terrestrial coastal bank by construction of the CDF and by filling of the CDF site. However, as the CDF is gradually filled with dredged material, the aquatic area inside the site would convert from open-water to saturated mudflat, to better drained land on fill above the waterline of the lake. As water becomes shallower in the CDF, some species of submerged aquatic plants may establish. As the CDF fills with dredged material and mudflat areas become exposed above the waterline, cattails, rushes, and sedges would invade the area. As the dredged material dried out further, cottonwood, elm, box elder, willow trees, and an understory mixture of terrestrial shrubs, forbs, and grasses would establish. Eventually, the entire CDF would convert to about 68 acres of terrestrial herbaceous and woody vegetation if the site was not developed.

4.32 Burke East Site (15-Year) CDF - Impacts on vegetation are anticipated to be similar to those described for the Site 10B (15-Year) CDF, except that no terrestrial vegetation would be adversely impacted. Although filamentous algae attached to submerged stone at the north end of existing CDF Site 12 would eventually be covered with dredged material, submerged stone surfaces of the new stone dike slopes outside the Burke East (15-Year) CDF would likely provide long-term substrate on which filamentous algae may attach. With this alternative plan, approximately 8 acres less lake area would eventually be converted to terrestrial land. Natural vegetation would rapidly colonize such land if the CDF was left undeveloped. Similar plant succession as described for Site 10B above would probably occur.

Wetlands:

4.33 No Action (Without Project Conditions) - Scattered small wetland pockets in the existing completed CDF Site 12 adjacent to Burke Airport would eventually convert to terrestrial land. There are no other wetlands in the East Basin locale of Cleveland Harbor. The Harbor would be expected to remain as deep water in the foreseeable future, unless it was significantly altered by development.



4.34 Site 10B (15-Year) CDF - Construction of this proposed CDF would have no significant adverse impact on wetlands in nearby existing CDF #12. There are no other wetlands in the general project locale.

4.35 Burke East Site (15-Year) CDF - Construction of this CDF would have no significant adverse impact on small remaining scattered pockets of wetlands in adjacent existing CDF Site #12. There are no other wetlands in the general project locale.

Wildlife:

4.36 No Action (Without Project Conditions) - Since no Federal action would occur with this alternative, there would be no project-related impacts on wildlife or wildlife habitat. No significant changes relative to wildlife and wildlife habitat would be expected in the near future, unless the aquatic environment was significantly adversely altered by natural or man-made influences. The open water surface of the harbor area would continue to be available for use by aquatic birds (i.e., waterfowl, gulls, and terns), as resting and feeding habitat. The nearby existing lakeward facing portion of the stone dike above the waterline at CDF Site 12 - located immediately west of the proposed Burke East site - would continue to provide resting/loafing habitat for some species of aquatic birds. The submerged portion of the Site 12 CDF dike would continue to provide some degree of feeding habitat for diving birds (i.e., invertebrates found on stone surfaces or on algae attached to the stone; small prey fish among algae and stone crevices).

4.37 Site 10B (15-Year) CDF - There would be temporary disruption of open water habitat in the harbor for aquatic wildlife (i.e., gulls, terns, waterfowl) during construction of the CDF dike. Some disruption to wildlife would also occur whenever dredging and discharge of dredged material or stone dike maintenance occurs. The dike would provide about 5,050 linear feet of loafing habitat - and possibly even nesting habitat - for some aquatic birds. The calmer water zone within the CDF provided by the stone dike protection would be utilized by aquatic birds until all water in the CDF was displaced by fill material. However, water depth and aquatic area available for such uses would progressively diminish each time dredged sediment was discharged into the facility. Filling the CDF with dredged material will eventually result in the loss of 68 acres of open-water habitat for aquatic wildlife. Resultant colonization of the CDF by a variety of upland plants will provide food, nesting and brood cover that would attract terrestrial wildlife such as songbirds, raptors, and fur-bearing mammals - until development occurs on the CDF. The zone of calmer water, temporary mudflats created by dredged material and growth of various successional stages of vegetation, would likely attract birds to the CDF site. Once the CDF is completely filled to capacity, becomes better drained, and vegetation establishes over the site, the CDF would be less attractive to seagulls, terns, waterfowl, and shorebirds, but probably attractive to terrestrial wildlife (upland birds and mammals). Best management practices will be considered and utilized as needed to help minimize potential conflict of birds and other wildlife with aircraft operations at the existing airport during the life of the CDF. Additionally, in order to avoid or minimize potential of botulism occurrence, the CDF site would be monitored as indicated in the Botulism Control Management Plan provided in Appendix EIS-D.

Since the CDF would be installed for the purpose of containing polluted dredged material, unavoidably some pollutants may be ingested by wildlife at the site through the food chain.

4.38 Burke East Site (15-Year) CDF - Impacts on wildlife are anticipated to be similar to those described for the Site 10B (15-Year) CDF alternative plan, except that the Burke East CDF would be about 8 acres smaller in size. The stone dike would provide about 600 more linear feet of above-water loafing habitat for aquatic bird use.

#### Threatened and Endangered Species:

4.39 No Action (Without Project Conditions) - Since no Federal action to construct a project would occur with this alternative, there would be no adverse impacts on Federally listed threatened or endangered species. It is possible that on occasion, transient individuals (i.e., piping plover, Indiana bat) may briefly visit the area, since the vicinity of Cleveland Harbor is within the overall habitat range of these species.

4.40 Site 10B (15-Year) CDF - Although Site 10B lies within the range of the piping plover and Indiana bat, no adverse impact on these species is anticipated (USFWS Draft Coordination Act Report for Site 10B, February 11, 1992).

4.41 Burke East Site (15-Year) CDF - Although the Burke East alternative CDF plan lies within the range of the piping plover and Indiana bat, no adverse impact on these species is anticipated (USFWS Final Coordination Act Report for the Burke East CDF, March 25, 1991).

#### ENVIRONMENTAL EFFECTS - HUMAN ENVIRONMENT (MAN-MADE RESOURCES)

##### Community and Regional Growth:

4.42 No Action (Without Project Conditions) - If Federal navigation facilities were not maintained in the Harbor vicinity, both commercial and recreational navigation and associated enterprises would be adversely affected, hindering community economic and social well-being and continued community and regional growth.

4.43 The No Action (Without Project Conditions) alternative assumes that no CDF or alternate measures could be developed to accommodate the disposal of dredged polluted material. If no facility or measure were available to facilitate the disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would silt/shoal in, thereby significantly limiting deep-draft commercial and recreational navigation in the harbor. It is expected that within 2 years, accumulated sediments would reduce port utilization. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically. A number of primary and secondary enterprises would close. In turn, associated deep-draft harbor community and regional benefits would be diminished. Associated long-term land use changes and community and regional development changes would occur.

4.44 Site 10B (15 Year) CDF - Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises contributing to community economic and social well-being and continued community and regional growth.

4.45 Development of this alternative would provide for continued harbor channel maintenance dredging and disposal of dredged polluted material into a CDF and associated benefits for about 15 years. About 68 acres of outer harbor area just northwest and adjacent to Burke Lakefront Airport would be converted to diked CDF and eventually filled and likely utilized to expand or relocate facilities at Burke Lakefront Airport. Depending on a number of variables and potential scenarios, it is possible that the CDF will take somewhat more or possibly less time to fill than the planning 15 year period. Projected long-term land use of the site could be affected accordingly. (Future land use of former CDF's must consider assurance of polluted sediment containment and health and safety issues.) This alternative is consistent with city land use plans. This alternative is presently supported by the City of Cleveland with the understanding that costs associated with relocation/extension of six storm sewerlines and outfalls would be a cost to the local cooperator. Overall community interest impacts would include: associated costs, containment of dredged polluted material, continued harbor maintenance, associated loss of protected aquatic/harbor area, trade-off of stone dike aquatic habitat area, and eventual additional waterfront land use area.

4.46 Burke East Site (15 Year) CDF - Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises contributing to community economic and social well-being and continued community and regional growth.

4.47 Development of this alternative would provide for continued harbor channel maintenance dredging and disposal of dredged polluted material into a CDF for about 15 years. About 60 acres of outer harbor area just east and adjacent to the previously filled Site 12 CDF would be converted to diked CDF and eventually filled and likely utilized to expand or relocate facilities at Burke Lakefront Airport. (Future land use of former CDF's must consider assurance of polluted sediment containment and health and safety issues.) It was expected that this alternative could provide additional protection for expansion or development of harbor marinas. Concern pertaining to access, water quality, and land use made this alternative less desirable to the community. This alternative is not consistent with city land use plans and it is not presently supported by the City of Cleveland. Overall community interest impacts would include: associated costs, containment of dredged polluted material, continued harbor maintenance, associated loss of protected aquatic/harbor area, water quality concerns, additional harbor stone dike aquatic area, conflicting but eventual additional waterfront land use area.

Displacement of People:

4.48 No Action (Without Project Conditions) - If harbor Federal navigation facilities were not maintained, interests dependent on these facilities would be adversely impacted and could eventually be displaced.

4.49 Site 10B (15 Year) CDF - No displacement of people. The City must obtain rights of the Lake Erie bottom land from the State.

4.50 Burke East Site (15-Year) CDF - No displacement of people. The City would need to obtain rights of Lake Erie bottom land from the State.

Displacement of Farms:

4.51 No Action (Without Project Conditions) - No displacement of farms.

4.52 Site 10B (15 Year) CDF - No displacement of farms.

4.53 Burke East Site (15 Year) CDF - No displacement of farms.

Business and Industry and Employment and Income:

4.54 No Action (Without Project Conditions) - If harbor Federal navigation facilities were not maintained, both commercial and recreational navigation and associated enterprises would be adversely affected. Associated employment and income could be reduced.

4.55 The No Action (Without Project Condition) alternative indicates that no CDF or alternate measures could be developed to accommodate the disposal of dredged polluted material. If no facility or measure were available to facilitate the disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would silt/shoal in, thereby significantly limiting deep-draft commercial and recreational navigation in the harbor. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically. A number of primary and secondary enterprises would likely close. Business, industry, employment, and income would be adversely affected, accordingly.

4.56 Site 10B (15 Year) CDF - Harbor operation and maintenance provides business, employment, and income to material supply, marine construction, and dredging interests. Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises (limestone, iron ore, cement, sand, gravel, salt, oil, grain, and general cargo and marinas). CDF sites are also utilized by local interests for the disposal of dredged polluted materials, by permit.

4.57 Project construction would provide business, industry, employment, and income to construction, supply, and service industries over the several year CDF construction seasons.

4.58 Development of this alternative would provide for continued harbor channel maintenance dredging and disposal of dredged polluted material into a CDF for about 15 years. Business and industry dependent on commercial shipping, and local marinas which rely on the channels for navigation, would be expected to continue operations similar to existing conditions or possibly expanded levels. Eventually the CDF would be filled and likely utilized to expand or relocate facilities at Burke Lakefront Airport.

4.59 Burke East Site (15 Year) CDF - Harbor operation and maintenance provides business, employment, and income to material supply, marine construction, and dredging interests. Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises (limestone, iron ore, cement, sand, gravel, salt, oil, grain, and general cargo and marinas). CDF sites are also utilized by local interests for the disposal of dredged polluted materials by permit.

4.60 Project construction would provide business, industry, employment, and income to construction, supply, and service businesses over the several-year CDF construction seasons.

4.61 Development of this alternative would provide for continued harbor channel maintenance dredging and disposal of dredged polluted material into a CDF for about 15 years. Business and industry dependent on commercial shipping, and local marinas which rely on the channels for navigation, would be expected to continue operations similar to existing conditions or possibly expanded levels. Eventually the CDF would be filled and likely utilized to expand or relocate facilities at Burke Lakefront Airport.

4.62 Harbor access, land use, and sewer outflow water quality concerns were expressed as significant concerns relative to this plan.

Public Facilities and Services:

4.63 No Action (Without Project Conditions) - If harbor Federal navigation facilities were not maintained, both commercial and recreational navigation and associated enterprises would be adversely affected or even displaced. Developments would be altered. Public facilities and services would have to be altered accordingly.

4.64 The No Action (Without Project Condition) alternative indicates that no CDF or alternate measures could be developed to accommodate the disposal of polluted dredged material. If no facility or measure were available to facilitate disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would silt/shoal in, thereby significantly limiting deep-draft commercial and recreational navigation in the harbor. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically. A number of primary and secondary enterprises would likely close. Associated land use dilapidation or redevelopment would likely occur in the long term. Industrial and commercial processes, transportation interfaces, and public facilities, services and utilities would be altered accordingly.

4.65 Site 10B (15 Year) CDF - Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Existing associated public facilities and services would be maintained. Future developments may also be facilitated. Public facilities and services would have to be expanded accordingly. CDF sites are also utilized by local interests for the disposal of dredged polluted materials, by permit.

4.66 Adequate public facilities and services should be available to accommodate project construction, operation, and long-term development.

4.67 Six sewerlines and outfalls would need to be extended/relocated through the project site on foundation material/structures. Outflows may be extended or may be combined then extended. Outfalls will likely be located along the northwest dike area. Reference Figures 10 through 15. The local cooperators are aware that this is a local cost.

4.68 Development of this alternative would provide for continued harbor channel maintenance dredging and confined disposal of dredged polluted material into a CDF for about 15 years. Continued operation and maintenance of navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Existing associated public facilities and services would be maintained. Future developments may also be facilitated. Public facilities and services would have to be expanded accordingly.

4.69 About 68 acres of outer harbor area would be converted to CDF and eventually filled and likely utilized to expand or relocate facilities at Burke Lakefront Airport. During the long-term filling process, seeding, and vegetation techniques could be utilized on newly created discharge areas to minimize avian attraction concerns in the vicinity of the airport. Depending on a number of variables and potential scenarios, it is possible that the CDF will take somewhat more or possibly less time to fill than the planning 15 year period. Projected long-term land use of the site could be affected accordingly.

4.70 Burke East Site (15-Year) CDF - Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Existing associated public facilities and services would be maintained. Future developments may also be facilitated. Public facilities and services would have to be expanded accordingly. CDF sites are also utilized by local interests for the disposal of dredged polluted material, by permit.

4.71 Adequate public facilities and services should be available to accommodate project construction, operation, and long-term development.

4.72 Harbor access, land use, and storm sewer outflow water quality concerns were expressed as significant concerns relative to this plan.

4.73 Development of this alternative would provide for continued harbor channel maintenance dredging and disposal of dredged polluted materials into a CDF for about 15 years. Continued operation and maintenance of navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Existing associated public facilities and services would be maintained. Future developments may also be facilitated. Public facilities and services would have to be expanded accordingly.

4.74 About 60 acres of outer harbor area would be converted to CDF and eventually filled and likely utilized to expand or relocate facilities at Burke Lakefront Airport.

## Recreational Resources:

4.75 No Action (Without Project Conditions) - If harbor Federal navigation facilities were not maintained, recreational navigation and associated enterprises would be adversely affected. For example, breakwater-protected harbor areas could be lost, and harbor channel depths could eventually silt in to problem elevations (i.e., particularly for deep-draft sailboats).

4.76 The No Action (Without Project Conditions) alternative indicates that no CDF or alternate measures could be developed to accommodate the disposal of dredged polluted material. If no facility or measure were available to facilitate the disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would silt/shoal in, thereby significantly limiting deep-draft commercial and recreational navigation in the harbor. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically. A number of primary and secondary enterprises would likely close. In addition to some channel restrictions, subsequent economic conditions would likely adversely affect existing recreation. However, long-term redevelopment would likely be more recreationally oriented.

4.77 Site 10B (15-Year) CDF - Continued operations and maintenance of harbor Federal navigation facilities would facilitate recreational navigation and associated enterprises. Breakwater-protected harbor areas would be maintained, and navigation channels would be maintained at fairly consistent and safe depths. Development of this alternative would provide for continued harbor channel maintenance dredging and discharge of dredged polluted materials into a CDF for about 15 years. CDF sites are also utilized by local recreational (marina) interests for the disposal of dredged polluted material, by permit.

4.78 Implementation of this alternative would result in the loss of about 68 acres of water area protected by the Cleveland off-shore breakwater. This protected area is used by boaters as an area of refuge from the high energy wave-prone areas of Lake Erie and is also used for such activities as water skiing. However, the "harbor-of-refuge" area remaining after project implementation should remain sufficient to provide protection to small vessels during severe storm conditions. Boating and waterskiing activities which could not occur in the 68 acre project area with implementation of the project, could occur in adjacent harbor areas and outside the harbor breakwaters (except probably waterskiing during moderate to severe lake conditions and some boating during severe lake conditions). Approximately 5,050 lineal feet of stone dike shoreline area (fishery and fishing area) would be lost inside the CDF area, but would be replaced by about 5,050 lineal feet of new stone dike perimeter area.

4.79 The City of Cleveland is developing waterfront recreational developments in the waterfront area including marina facilities in the near project vicinity. Eventual filling and use of the CDF area to expand and/or relocate Burke Lakefront Airport facilities may eventually make other areas available for completion of planned water related recreational developments.

4.80 Burke-East Site (15-Year) CDF - Continued operations and maintenance of harbor Federal navigation facilities would facilitate recreational navigation and associated enterprises. Breakwater-protected harbor areas would be maintained, and navigation channels would be maintained at fairly consistent and safe depths. Development of this alternative would provide for continued harbor channel maintenance dredging and discharge of dredged polluted material into a CDF for about 15 years. CDF sites are also utilized by local recreational (marina) interests for the discharge of dredged polluted material, by permit.

4.81 Implementation of this alternative would result in the loss of about 60 acres of water area protected by the Cleveland off-shore breakwater. This protected area is used by boaters as an area of refuge from the high energy wave-prone areas of Lake Erie and is also used for such activities as water skiing. However, the "harbor-of-refuge" area remaining after project implementation should remain sufficient to provide protection to small vessels during severe storm conditions. Boating and waterskiing activities which could not occur in the 60 acre project area with implementation of the project, could occur in adjacent harbor areas and outside the harbor breakwaters (except probably waterskiing during moderate to severe lake conditions and some boating during severe lake conditions). Approximately 1,300 lineal feet of stone dike shoreline area (fishery and fishing area) would be lost inside the CDF area, but would be replaced by about 4,650 lineal feet of new stone dike perimeter area.

4.82 Development of this alternative would restrict the view to the harbor from existing marina developments along the east basin and would lengthen access routes to and from some of the marinas. Although this alternative would provide a better protected embayment area for potential additional marina developments, storm sewer outflow and other water quality concerns, as well as existing land use plan conflicts were expressed.

4.83 The City of Cleveland is developing waterfront recreational developments in the waterfront area including marina facilities in the near project vicinity. Eventual filling and use of the CDF area to expand and/or relocate Burke Lakefront Airport facilities may eventually make other areas available for completion of planned water related recreational developments.

Property Values and Tax Revenues:

4.84 No Action (Without Project Conditions) - If harbor Federal navigation facilities were not maintained, both commercial and recreational navigation and associated enterprises would be adversely affected. Land use would likely change to lesser value developments. Associated property value and tax revenue would likely decrease.

4.85 The No Action (Without Project Conditions) alternative indicates that no CDF or alternate measures could be developed to accommodate disposal of dredged polluted material. If no facility or measure were available to facilitate the disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would silt/shoal in, thereby significantly limiting deep draft commercial and recreational navigation in the harbor. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically and may eventually be displaced. Land use would eventually change accordingly; likely



from industrial and commercial to mixed lakefront and recreational development. Higher property values and associated tax revenues associated with industrial and commercial channel access at lakefront developments would be lost to lesser lakefront and recreational type developments.

4.86 Site 10B (15-Year) CDF - Continued operation and maintenance of harbor Federal navigation facilities facilitates both commercial and recreational navigation and associated enterprises. Land use would likely be maintained or redeveloped to higher value developments. Associated property value and tax revenues would likely be similar or increased.

4.87 Federal harbor features are maintained via Federal funds. Some business, employment, and income would be temporarily generated in the area due to project construction. Costs associated with lands, easements, right-of-ways, and relocations would be borne by the local sponsor.

4.88 Development of this alternative would provide for continued harbor channel maintenance dredging and disposal of dredged polluted materials into a CDF for about 15 years. This would help to maintain associated enterprises and property values and tax revenues associated with business dependent upon channels for navigation. Approximately 68 acres of waterfront property would eventually be created northwest and adjacent to Burke Lakefront Airport and would likely be utilized to expand or relocate airport facilities. Some property west of Burke Lakefront Airport may be utilized for other waterfront development. Accordingly, property values and associated tax revenues in the project vicinity would be expected to be similar or increased with project development.

4.89 Burke East Site (15-Year) CDF - Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Land use would likely be maintained or redeveloped to higher value developments. Associated property value and tax revenues would likely be similar or increase.

4.90 Federal harbor features are maintained via Federal funds. Some business, employment, and income would be temporarily generated in the area due to project construction. Costs associated with lands, easements, right-of-ways, and relocations would be borne by the local sponsor.

4.91 Development of this alternative would provide for continued harbor channel maintenance dredging and disposal of dredged polluted materials into a CDF for about 15 years. This would help to maintain associated enterprises and property values and tax revenues associated with business dependent upon channels for navigation. Approximately 60 acres of waterfront property would eventually be created east and adjacent to Burke Lakefront Airport and would likely be utilized to expand or relocate airport facilities. Some property west of Burke Lakefront Airport may be utilized for other waterfront development. Accordingly, property values and associated tax revenues in the project vicinity would be expected to be similar or increased with project development.

Noise and Aesthetics:

4.92 No Action (Without Project Conditions) - Noise associated with operation of heavy equipment for Federal breakwater repair and dredging would likely cease.

4.93 If harbor Federal navigation facilities were not maintained, both commercial and recreational navigation and associated enterprises would be adversely impacted and could eventually be displaced. Area land use and development would likely change. Existing development dilapidation then redevelopment would likely occur in the long-term. Associated noise and aesthetics would occur.

4.94 The No Action (Without Project Conditions) alternative indicates that no CDF or alternate measures could be developed to accommodate the disposal of dredged polluted material. If no facility or measure were available to facilitate the disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would silt/shoal in, thereby significantly limiting deep-draft commercial and recreational navigation in the harbor. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically and may eventually be displaced. Noise could decrease in some cases. Noise associated with alternate means of transportation could result in other cases. Existing development dilapidation then redevelopment would likely occur in the long-term. Associated noise and aesthetic changes would occur.

4.95 Site 10B (15-Year) CDF - Noise associated with the operation of heavy equipment for Federal breakwater repair and dredging activities would continue. Some turbidity and resuspension of sediments and odor would be noticeable in the dredging areas. These are short-term, minor adverse impacts relative to activity setting and level of disruption.

4.96 Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Development of this alternative would provide for breakwater maintenance, and continued harbor channel maintenance dredging and disposal of dredged polluted material into a CDF for about fifteen years. Developments which rely on breakwaters and channels for navigation and shipping would be expected to continue operations similar to existing conditions or possibly expanded levels. Associated noise and aesthetics would be expected.

4.97 Noise would be generated in the CDF project area due to the operation of heavy equipment during construction and discharge operations. This should not be a significant adverse impact in light of the project area setting and sufficient distance from noise-sensitive areas. Some turbidity and earthy odor may be noticeable in the area of the CDF site during discharge operations. The odor however, should not be significant and the site is sufficiently removed from odor sensitive areas.

4.98 Construction of the CDF would alter distant views to and from the lake in the vicinity of the CDF. About 68 acres of outer harbor area would be utilized to accommodate development of this facility which would be lost to recreational boating use.

4.99 It is expected that once the CDF is filled, the land area would be utilized to expand or relocate Burke Lakefront Airport facilities. The current thought is to eventually use the CDF land to construct a replacement runway for existing runway 6R-24L, subject to environmental approval. According to the "Cleveland Civic Vision 2000 Downtown Plan," public access along the shoreline west of Burke Lakefront Airport is being considered, as well as other areas along the waterfront (peripheral) possibly facilitated/accommodated by CDF related future airport facility relocation or expansion.

4.100 Burke East (15-Year) CDF - Noise associated with the operation of heavy equipment for Federal breakwater repair and dredging activities would continue. Some turbidity and resuspension of sediments and odor would be noticeable in the dredging areas. These are short-term, minor adverse impact relative to activity setting and level of disruption.

4.101 Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Development of this alternative would provide for breakwater maintenance, and continued harbor channel maintenance dredging and discharge of dredged polluted material into a CDF for about fifteen years. Developments which rely on breakwaters and channels for navigation and shipping would be expected to continue operations similar to existing conditions or possibly expanded levels. Associated noise and aesthetics would be expected.

4.102 Noise would be generated in the CDF project area due to the operation of heavy equipment during construction and discharge operations. This should not be a significant adverse impact in light of the project area setting and sufficient distance from noise sensitive areas. Some turbidity and earthy odor may be noticeable in the area of the CDF site during discharge operations. The odor however, should not be significant and the site is sufficiently removed from odor sensitive areas.

4.103 Construction of the CDF would alter distant views to and from the lake in the vicinity of the CDF. Development of this alternative would restrict the view to the harbor from existing marina developments along the East Basin and would lengthen access routes to and from some of the marinas. About 60 acres of outer harbor area would be utilized to accommodate development of this facility which would be lost to recreational boating use. Although this alternative would provide a better protected embayment area for potential additional marina developments, storm sewer outflow and other water quality concerns, and existing land use plan conflicts were expressed.

4.104 It is expected that once the CDF is filled, the land area would be utilized to expand or relocate facilities at the Burke Lakefront Airport. According to the "Cleveland Civic Vision 2000 Downtown Plan," public access along the shoreline west of Burke Lakefront Airport is being considered, as well as other areas along the waterfront.

Community Cohesion:

4.105 No Action (Without Project Conditions) - If harbor Federal navigation facilities were not maintained, both commercial and recreational navigation and associated enterprises would be adversely affected, and could eventually even be displaced. Associated employment and income could be reduced. Several community sustenance and cohesion factors would be disrupted.

4.106 The No Action (Without Project Conditions) alternative implies that no CDF or alternate measures could be developed to accommodate the disposal of dredged polluted material. If no facility or measure were available to facilitate the disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would silt/shoal in, thereby

significantly limiting deep-draft commercial and recreational navigation in the harbor. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically, and may eventually be displaced. Numerous industrial, commercial, and recreational harbor interests would be gravely concerned.

4.107 Site 10B (15-Year) CDF - Continued operation and maintenance of Cleveland Harbor navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Associated employment and income could be sustained. Several community sustenance and cohesion factors would be maintained.

4.108 Development of this alternative would provide for continued harbor channel maintenance dredging and discharge of dredged polluted material into a CDF for about 15 years. Development interests and individuals which rely on the channels for navigation and shipping would be expected to continue operations similar to existing conditions or possibly expanded levels. About 68 acres of protected outer harbor area (utilized for fishing and boating) northwest and adjacent to Burke Lakefront Airport would be utilized, eventually filled, and likely utilized to expand or relocate airport facilities possibly freeing other areas for alternate lakefront developments. According to the "Cleveland Civic Vision 2000 Downtown Plan," public access along the shoreline west of Burke Lakefront Airport is being considered, as well as other areas along the waterfront. This alternative is consistent with city land use plans. This alternative is presently supported by the City of Cleveland with the understanding that costs associated with relocation/extension of six sewerlines and outfalls would be a cost to the local cooperator. Overall, community interest impacts would include: associated costs, containment of dredged polluted material, continued harbor maintenance, associated loss of protected aquatic/harbor area, trade-off of stone dike aquatic habitat area, and eventual additional waterfront land use area.

4.109 Burke-East Site (15-Year) CDF - Continued operation and maintenance of harbor Federal navigation facilities would facilitate both commercial and recreational navigation and associated enterprises. Associated employment and income could be sustained. Several community sustenance and cohesion factors would be maintained.

4.110 Development of this alternative would provide for continued harbor channel maintenance dredging and discharge of dredged polluted material into a CDF for about 15 years. Development interests and individuals which rely on the channels for navigation and shipping would be expected to continue operations similar to existing conditions or possibly expanded levels. About 60 acres of protected Outer Harbor area (utilized for fishing and boating) east and adjacent to Burke Lakefront Airport would be utilized, eventually filled, and likely utilized to expand or relocate airport facilities possibly freeing other areas for alternative lakefront developments. According to the "Cleveland Civic Vision 2000 Downtown Plan," public access along the shoreline west of Burke Lakefront Airport is being considered, as well as other areas along the waterfront. It was expected that this alternative could provide additional protection for expansion or development of harbor marinas. Concerns pertaining to access, water quality, and land use made this alternative less desirable to the community. This alternative is not consistent with city land use plans and it is not presently supported by the City of Cleveland.

4.111 Overall community interest impacts would include: associated costs, containment of polluted dredged material, continued harbor maintenance, associated loss of protected aquatic/harbor area, water quality concerns, additional stone dike aquatic habitat area, conflicting but eventual additional waterfront land use area.

#### ENVIRONMENTAL EFFECTS - CULTURAL RESOURCES

##### Cultural Resources:

4.112 No Action (Without Project Conditions) - If breakwaters are not maintained, shoreline areas and structures would likely eventually become subject to severe lake wave action and erosion. Some areas and structures (including the breakwaters and light stations) are of potential archeological and/or historic interest. If harbor Federal navigation facilities were not maintained, both commercial and recreational navigation and associated enterprises would be adversely affected, and possibly displaced. Some are of potential historic interest.

4.113 The No Action (Without Project Conditions) alternative implies that no CDF or alternate measures could be developed to accommodate disposal of dredged polluted material. If no facility or measure were available to facilitate disposal of dredged polluted material, it is likely that maintenance dredging of harbor channels would have to be severely limited or terminated. Eventually, channels would shoal and/or silt-in, thereby significantly limiting deep-draft commercial and recreational navigation in the harbor. Consequently, individuals and enterprises dependent on this mode of transportation for their livelihood would suffer economically and may eventually be displaced. Land use would likely eventually change from industrial and commercial lakefront development to recreational or other lakefront development. Since the channels have been previously disturbed, it is not expected that any cultural resources would be affected by the gradual filling of channels. Unless appropriate mitigation measures are implemented, it is probable that cultural resources (archeological and historic) would be disturbed and lost due to land use changes.

4.114 Site 10B (15-Year) CDF - Harbor breakwaters and navigation aids have been functioning for many years, and may be of historic significance. Continued maintenance would serve to protect these structures into the future. Also breakwater structures serve to protect harbor and shoreline areas and structures from severe lake wave action and erosion. Some of these areas and structures are of potential archeological and/or historic interest. Channel areas have been maintained at or above authorized depths for many years. Therefore, it is not expected that continued dredging from these channels would significantly adversely affect any archeological or historic items.

4.115 The results of a cultural resources review, as well as coordination with the Ohio State Historic Preservation Office has concluded that the considered project (Site 10B (15-Year) CDF) would have no effect on properties listed or eligible for listing on the National Register of Historic Places. No significant adverse impacts to any significant cultural resources would be anticipated (see SECTION 6, Paragraph 6.12 also).

4.116 Burke East Site (15-Year) CDF - Harbor breakwaters and navigation aids have been functioning for many years, and may be of historic significance. Continued maintenance would serve to protect these structures

into the future. Also, breakwater structures serve to protect harbor and shoreline areas and structures from severe lake wave action and erosion. Some of these areas and structures are of potential archeological and/or historic interest. Channel areas have been maintained at or above authorized depths for many years. Therefore, it is not expected that continued dredging from these channels would significantly adversely affect any archeological or historic items.

4.117 The results of a cultural resources review, as well as coordination with the Ohio State Historic Preservation Office has concluded that the considered project (Burke East Site (15-Year) CDF) would have no effect on properties listed or eligible for listing on the National Register of Historic Places. No significant adverse impacts to any significant cultural resources would be anticipated (see SECTION 6, Paragraph 6.12 also).

#### BORROW (QUARRY) IMPACT ASSESSMENT STATEMENT

4.118 As mentioned previously (reference paragraph 2.48), stone construction material would be obtained from a permitted/licensed source. Generally, due to construction contract language requirements and potential savings to the government, project contractors are allowed to select alternate project borrow (quarry) areas; provided material standards and Federal, State, and local permit/license requirements are met. A list of some potential suitable sources was identified via paragraph 2.48. Most are located in Ohio. Stone would likely be transported from the quarry along major routes by truck or train to the project vicinity or to ship or barge and then to the project vicinity. Since these major routes are commonly utilized for transport of such material, except for some increased traffic, and wear and tear, and associated impacts, no significant adverse impacts in this regard would be anticipated. Environmental assessment of borrow (quarry) extraction of material is generally addressed or referenced via borrow (quarry) site operation permit/license. Generally, environmental impacts of borrow extraction would pertain to minor adverse impacts to noise and air quality due to operation of heavy equipment; and minor to moderate adverse impacts to aesthetics, wildlife, vegetation, soils/bedrock, water, previous land use, and possibly cultural resources due to material extraction; with long term minimization of impacts as directed by permit/license and restoration requirements. Generally, beneficial impacts of quarry operations would pertain to community, business/industry/employment/income, tax revenues; and potential eventual aesthetics, water, soil, vegetation, wildlife, and land use restoration impacts.

## SECTION 5 - LIST OF PREPARERS

5.01 The following people are primarily responsible for preparing this Environmental Impact Statement.

<u>Section and Name</u>	<u>Position</u>	<u>Experience</u>	<u>Expertise</u>
<u>Study Management/ Project Management Branch</u>			
Mr. David Gerland	Project Manager	Project Management Office, (5 years) USA-COE, Buffalo	Civil Engineering
<u>Plan Formulation &amp; Technical Management Section</u>			
Mr. James Karsten	Project Manager (Technical)	Plan Formulation & Technical Management Section (17 years) USA-COE, Buffalo	Civil Engineering & Planning
<u>Environmental Analysis Section</u>			
Mr. Tod Smith	Community Planner	Environmental Analysis Section (17 years), USA-COE, Buffalo	Community/Environmental Planning
Mr. Leonard Bryniarski	Ecologist	Environmental Analysis Section (22 years), USA- COE, Buffalo	Ecology & Wildlife
Mr. Tim Daly	Community Planner	Environmental Analysis Section (17 years), USA- COE, Buffalo	Cultural Resources
<u>Water Quality Section</u>			
Mr. Richard Leonard	Environmental Chemist	Water Quality Section (13 years), USA-COE, Buffalo	Sediment chemical and biological testing & environmental analysis
<u>Economics Section</u>			
Mr. Roger Haberly	Regional Economist	Economics Section (13 years), USA- COE, Buffalo	Economic Analysis

## SECTION 6 - PUBLIC INVOLVEMENT

### INTRODUCTION

6.01 This section briefly describes the study's public involvement program, required coordination, statement recipients, and public views and responses.

### PUBLIC INVOLVEMENT PROGRAM

6.02 Study activities are coordinated with government agencies, interest groups, and the general public. The general intent is to gain assistance in: identifying and scoping existing conditions, problems, needs, and concerns; developing feasible alternative solutions; and assessing, evaluating, and identifying preferred and selected plans. This study's public involvement process incorporates public meeting/workshops, written correspondence, telephone communication, and draft and final report review procedures.

6.03 A brief listing of some pertinent study meetings/workshops follows.

### MEETINGS/WORKSHOPS

<u>Location &amp; Date</u>	<u>Planning Interests</u>	<u>Major Discussion</u>
PHASE 1		
Cleveland February 1985	Federal, State, and local	Scope of Study. Possible CDF Sites.
Cleveland October 1985	Federal, State, and local	CDF Sites Evaluation
Cleveland April 1986	Federal, State, and local	CDF Sites Evaluation
Cleveland September 1986	Federal, State, and local	CDF Sites, Evaluation, Preliminary Findings.
PHASE 2		
Cleveland June 1988	Federal, State, and local	Revised Scope of Study and Considered CDF Sites.
Cleveland July 1988	Federal, State, and local	CDF Sites Evaluation
Cleveland May 1990	Public Meeting	Cleveland Projects Public Information Session
Cleveland August 1990	Federal, State, and local	Burke East Site. Land Use, and Storm Sewer Outfall and Embayment Water Quality Concerns.
Cleveland February 1991	Federal, State, and local	Burke East Site Eliminated from Further Consideration. Review Alternative Sites.



6.04 As indicated, an initial scoping meeting with key agencies was conducted in February 1985. Some issues identified included.

- Cleveland Harbor maintenance needs.
- Sediment and water quality issues.
- Consider full array of alternatives including those that would reduce dredging and discharge needs.
- Costs.
- Use of current CDF Site 14 for park expansion, as soon as possible.
- Proliferation of disposal sites that utilize Lake Erie littoral zone.
- Provide sufficient containment measures.
- Environmental impacts.
- Future land and water uses.
- Local sponsorship.

An array of alternatives for consideration was assembled and the evaluation process initiated. Substantial planning coordination correspondence ensued.

6.05 Development of a diked confined disposal facility (CDF) at Site 10 emerged as the lead alternative. However, this plan could not be implemented because the cost to extend storm sewer outflow pipes through the site would be a significant local sponsor cost which could not be financed by the local sponsors. Continued alternative development and evaluation became necessary.

6.06 Since no alternative was readily identified, accommodations for continued dredging and disposal into the early 1990's became a critical concern. The most apparent measure to provide for interim facilities until a new alternative can be implemented is to extend the use of currently utilized Site 14 CDF by raising the dike height slightly (Plan 14A). This is not a popular plan in the area since Site 14 is projected to be utilized for expansion of Gordon Park. Nonetheless, in light of limited alternatives, the Site 14A Plan was reluctantly endorsed as an interim measure by the local sponsors. Coordination pertaining to the Site 14A Plan was coordinated by separate report in order to expedite potential implementation, while continued alternative development and evaluation is pursued.

6.07 Development of a CDF at the Burke East Site emerged as a lead alternative during this second phase of alternative development and evaluation. A supplemental scoping letter was coordinated in early January 1990 pertaining to the Burke East site, with agencies and publics who were not previously substantially coordinated with for their assessment comments and input. Significant concerns pertaining to storm sewer outflows into the created embayment and associated water quality issues, and future land and water use conflicts made this alternative unacceptable. Additionally, water quality studies and potential mitigation proposals would require more time and funding.

6.08 Subsequently, the Site 10B (15-Year) CDF Plan has now emerged as the preferred plan. It is recommended by the city of Cleveland with the understanding that the cost (Reduced from the original Site 10 CDF Plan because of fewer extensions) for sewer outflow pipe extensions would be a local sponsor cost. Other planning criteria appear to be within acceptable limits.

## REQUIRED COORDINATION

6.09 A Notice of Intent to prepare a Draft Environmental Impact Statement (DEIS) was prepared by the Buffalo District and published in the Federal Register on July 24, 1986. An EIS is being prepared for this project for the following reasons: (1) an EIS is normally prepared for a project of this scope; (2) public and agency concerns; and (3) potential impacts relative to Cleveland Harbor and the surrounding community and environment.

6.10 Notice was made (1/29/93) and the DEIS was coordinated for a 45-day review period with Federal, State, local, and public interests. Notice will be made and the FEIS will be coordinated for a 30-day review period. If the proposed project is approved, a Record of Decision will be signed and coordinated. Subsequent preparation of final plans and specifications, and construction would follow.

6.11 Environmental Coordination and Compliance. As summarized in SUMMARY Table B, (reference the EIS Summary) compliance with Federal environmental statutes is as follows:

6.12 Preservation of Historical Archaeological Data Act of 1974, 16 USC et seq.; National Historic Preservation Act of 1966, as amended, 16 USC 470 et seq.; Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971. Project coordination was conducted with the U.S. Department of the Interior, and the Ohio Historic Preservation Office in this regard. Cultural resources investigations have been conducted in the project vicinity. No cultural resources that would be impacted by the project were identified. Coordination was conducted with appropriate cultural resource agencies. No concerns pertaining to impacts to significant cultural resources were received. The State Historic Preservation Officer indicated in a letter dated August 8, 1986 that it is the opinion of the SHPO that the project would have no effect upon cultural resources included in or eligible for inclusion in the National Register of Historic Places (reference Appendix EIS-F).

6.13 Clean Air Act, as amended, 42 USC 7401 et seq. Project coordination was conducted with the U.S. Environmental Protection Agency and the Ohio Environmental Protection Agency in this regard. Except for minor emissions associated with the operation of construction equipment and some potential temporary earthy odor associated with discharge of dredged material, no significant adverse impacts to air quality would be expected due to project implementation. This Environmental Impact Statement is being coordinated with the U.S. Environmental Protection Agency and the Ohio Environmental Protection Agency in this regard.

6.14 Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972) 33 USC 1251 et seq. Project coordination was conducted with the U.S. Environmental Protection Agency and the Ohio Environmental Protection Agency in this regard. Associated with the Clean Water Act is the banning of open-lake discharge of dredged polluted material not suitable for unrestricted open-lake disposal and the development and use of diked or upland CDFs or alternate measures. The project is

being coordinated in that regard. The U.S. Army Corps of Engineers, Buffalo District in coordination with the U.S Environmental Protection Agency and the Ohio Environmental Protection Agency has determined that most sediments dredged from Cleveland Harbor are polluted (except for those specifically identified in the Upper Cuyahoga River channel for potential beach nourishment) and may not be discharged at open-lake sites. The proposed project is a CDF extending northwest from the Burke Lakefront Airport shoreline.

6.15 A Public Notice and Section 404(b)(1) Evaluation Report is being coordinated with this Environmental Impact Statement as Appendix EIS-B. It is expected that the project would be constructed and utilized in compliance with the Clean Water Act and associated parameters. It is not expected that any significant adverse water quality impacts would be caused by project construction or future operation and maintenance procedures. A Section 401 Water Quality Certification is hereby requested from the Ohio Environmental Protection Agency.

6.16 National Environmental Policy Act, 42 USC 470a, et seq. Alternative plans are developed and evaluated in accordance with environmental considerations as set forth by this Act, as promulgated by the Department of the Army's: Principles and Guidelines; ER 200-2-2 Environmental Quality - Policies and Procedures for Implementing NEPA; and COE Section 122 Guidelines. Requirements of the Act are accomplished via the Corps' planning and coordination process.

6.17 Fish and Wildlife Coordination Act, 16 USC 661 et seq. Project coordination was conducted with the U.S. Department of the Interior - Fish and Wildlife Service as well as with the Ohio Department of Natural Resources in this regard. These agencies provided information and impact assessment pertaining to fish and wildlife resources and threatened or endangered species and/or habitat in the project vicinity. The Fish and Wildlife Service Coordination Act Report for the proposed Site 10B (15-year) CDF is included as Appendix EIS-C.

6.18 Some plan general trade-off factors include:

- ° Harbor channel maintenance, including removal of dredged polluted material not suitable for unrestricted open-lake disposal from the channel and containment in a CDF;

- ° Loss of some deep water habitat (including dike stone habitat) by CDF construction and filling with dredged material. Replacement of deep water habitat (including dike stone habitat) with long-term submerged benched dike stone for use as habitat by aquatic life along the lakeward facing portion of the stone CDF dike. Eventual gain in terrestrial land along the lake shoreline;

- ° Breakwater protected (water) harbor area eventually converted to upland waterfront land use area.

6.19 The following are specific discussions and recommendations provided by the U.S. Fish and Wildlife Service in their Coordination Act Report pertaining to plan considerations and the recommended Alternative Plan 10B as well as the Corps of Engineers, Buffalo District responses.

1a. USFWS Discussion and Recommendations

Over the years, we have requested that the Corps consider using upland disposal sites for dredged material. We have also recommended use of dredged material as fill for industrial, transportation or commercial projects in the Cleveland area. For the last few years, some of the material dredged from the uppermost portion of the navigation channel has been clean enough to use as beach nourishment or introduced into the littoral drift.

1b. Corps of Engineers Response

Upland confined disposal facilities and/or alternate use measures are discussed in EIS paragraphs 2.14 through 2.18.

2a. USFWS Discussion and Recommendation

In our opinion, the most economical and environmentally sound solution to maintenance dredging and disposal of dredged material is to keep the sediments out the Cuyahoga River navigation channel. To this end, we are willing to assist the Corps or any other Federal, state, or local agency in upland erosion control programs or projects.

In our opinion, the implementation of an upland and floodplain erosion control program are the type of long range planning which should be implemented. By implementation of such a program, the need for costly, habitat destroying inwater CDF's could be eliminated or greatly reduced in the future. By investing some time and money now, the government could eliminate or reduce the maintenance dredging cost in future years. Along with stricter pollution control standards, the sediments which would remain and need to be dredged could be classified as non-polluted or moderately polluted and open lake disposal would be appropriate. If action is not taken in the near future, the cost of controlling the erosion and confining the polluted sediments will only increase. Also, if the source of erosion is not controlled, at least partially, the immediate problem of removing sediments is perpetuated.

2b. Corps of Engineers Response

Pollution control and upstream erosion control measures are discussed in EIS paragraphs 2.06 and 2.07 through 2.12.

3a. USFWS Discussion and Recommendation

The construction of the proposed CDF in Cleveland Harbor would require mitigation for the loss of 68 acres of deep water aquatic habitat. Replacement of the loss of deepwater habitat with in-kind mitigation would not be practical. Therefore, we recommend out-of-kind mitigation measures to enhance spawning habitat in Cleveland Harbor be initiated. One spawning habitat technique would consist of designing into the proposed CDF dike a spawning shelf. This shelf constructed on the waterward side of the dike

should be 4+/- feet wide and be located about 4-8 feet below normal water level. Preferably, portions of the shelf would be constructed at 4-6 and 6-8 feet to allow various species spawning sites at various water levels. We envision the shelf being constructed of larger stone and then capped with a layer of gravel. The gravel may have to be replenished, if ice conditions or wave action moves the gravel. Another mitigation measure to consider would be to locate shallow water areas in or near Cleveland Harbor that could be developed into spawning areas with the addition of gravel substrate. In both cases, the mitigation spawning areas would need to be maintained for the life of the project.

### 3b. Corps of Engineers Response

Although creation of a "gravel shelf to enhance spawning habitat" would enhance fisheries habitat, the Buffalo District also recognizes that the submerged stone of the CDF dike would provide an estimated 9 acres of stable long-term fish habitat, some of which would likely be used by fish species as spawning, nursery, and/or feeding habitat. This habitat would probably be of higher value to the fishery than the dike surface area (approx. 7 acres) and very soft muck bottom (estimated to be about 7 feet deep in thickness) containing silt and clay material at the deepwater CDF site. Additionally, the project would facilitate dredging removal and CDF containment of sediments dredged from the harbor, that are considered to be "not suitable for unrestricted open-lake disposal," restricting movement of such material into the open water and sediments (environments) of the Harbor and Lake.

In light of the overall project mandate, costs, objectives/accomplishments, and assessment evaluation or trade-offs, the Corps of Engineers cannot warrant "mitigation" (as it is defined by or as it pertains to the Corps planning criteria) for the project.

Lesser environmental design, consideration, or compensation measures may be considered and may be feasible if: a) they are incidental to the base project, b) they may be implemented at no additional or minor cost, and c) such measures further avoid, minimize, or compensate for lesser adverse impacts or improve environmental conditions.

Unfortunately, a number of serious problems have surfaced pertaining to consideration and implementation of the proposed measures. Considering the previous statements, the predominant problem is that raising the berm to proposed elevation would require significant structural modifications and associated costs which are not acceptable. The dike cross-section has a berm on both sides for stability reasons. The bottom material is very soft, unconsolidated silt and clay which will be displaced to some extent by construction. The underlying material also has a low bearing capacity and the berms are required to provide the factor of safety necessary to prevent any failure. These berms are at -18 to -20 feet on the lakeward side and -20 feet on the

containment side (all referenced to LWD). A 4 foot wide shelf extending up to -6.0 feet on the lakeward side would require counterbalancing on the containment side which not only adds to the cross-sectional area of the dike and its cost, but also reduces the available space in the CDF for dredged material - requiring us to make the containment area larger - and again more costly. The Corps conservatively estimate the cost of the additional stone to construct the shelf and the counterweight to be about hundreds of thousands of dollars. This does not include the placement of gravel on top of the armor stone. The shelf is also likely to require annual replacement of grave sized stone on the submerged bench due to scouring by wave action which would be costly, and would require the local sponsor to assume that responsibility once the CDF site is filled. It is unlikely that they would agree to such a stipulation. Also, recent comments received by the Corps from the FAA (letter dated March 15, 1993) and the City of Cleveland (letter dated April 15, 1993), indicated strong opposition to the spawning shelf because of their concern that, if the CDF when filled was converted to an airport runway area, the fisheries enhancement measure may contribute toward further attracting birds to the area that feed on juvenile fish, thereby posing an increased safety hazard to pilots and aircraft utilizing the nearby runway.

Placement of gravel in shallow unprotected water areas in the general vicinity of the airport or harbor would probably not be acceptable for similar reasons. Additionally, Corps mitigation and compensation policy (rule of thumb) directs compensation - as necessary- in kind, in time, and in place. Measures would need to be in proximity to the site. In view of the factors addressed in the above paragraphs, it is the Buffalo District's conclusion that the proposed measures are not feasible for the proposed project.

6.20 Endangered Species Act, as amended, 16 USC 1531 et seq. Project coordination was conducted with the U.S. Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources in this regard. The USFWS in their Coordination Act Report indicated that except for possibly occasional transient species, no Federally listed endangered, threatened, or proposed for listing species under their jurisdiction are known to exist in the project impact area and that no impact due to project implementation would be expected in this regard. The Ohio Department of Natural Resources did not identify any State protected species or associated habitats that would be impacted by project implementation.

6.21 Estuary Protection Act, 16 USC et seq. Not applicable in this case.

6.22 Marine Protection Research and Sanctuaries Act of 1972, as amended, 16 USC 1401 et seq. Not applicable in this case.

6.23 Executive Order 11990, Protection of Wetlands, 24 May 1977. Project coordination was conducted with the USFWS and the Ohio Department of Natural Resources in this regard. Review of the Buffalo District's most recent copies of the USFWS National Wetland Inventory Maps and associated coordination indicates that no wetlands would be affected by project implementation.

6.24 Federal Water Project Recreation Act, as amended, 16 USC 460-1(12) et seq. Project coordination was/is being conducted with the U.S. Department of the Interior. It appears that the proposed project would be consistent with long-term land and associated water use plans including those for recreational developments.

6.25 Land and Water Conservation Fund Act, 16 USC 4601 et seq. Project coordination was/is being conducted with the U.S. Department of the Interior in this regard. The proposed project is expected to be consistent with their comprehensive outdoor recreation plan.

6.26 Wild and Scenic Rivers Act, 16 USC 1271 et seq. In accordance with the National Wild and Scenic Rivers Act, Public Law 90-542, the final lists of rivers identified as meeting the criteria for eligibility dated January 1981 were consulted. The lower Cuyahoga River was not listed.

6.27 Coastal Zone Management Act, as amended, 16 USC 1451 et seq. A consistency determination under the Coastal Zone Management Act was not prepared since the State of Ohio does not have an approved coastal zone management program. This EIS however, is being coordinated with the State of Ohio and associated agencies.

6.28 Watershed Protection and Flood Prevention Act, 16 USC 1001 et seq., and Executive Order 11988, Flood Plain Management, 24 May 1977. Project coordination was conducted with various agencies including the U.S. Department of Agriculture - Soil Conservation Service and the Federal Emergency Management Agency in this regard. The City of Cleveland is involved in the regular program of the National Flood Insurance Program. By this stage, flood insurance and flood plain management maps have been developed. Local ordinances pertaining to new or redevelopment in the flood plain and flood protection to the intermediate regional (100-year event) flood level have been enacted. In this way, flood insurance would help to compensate residents for flood damages to existing developments, while flood plain development ordinances would reduce the potential of flood damages of any future developments or redevelopments. It is not expected that the proposed harbor project would significantly affect the community flood plain areas. It should be noted however, that continued maintenance dredging may provide some degree of flood protection along the lower Cuyahoga River. It may be noted that the amount of sediments silting/shoaling into Cleveland Harbor navigation channels has substantially declined over the last few decades.

6.29 Farmland Protection Policy Act (PL 97-98) and Executive Memorandum - Analysis of Impacts on Prime and Unique Farmlands. Project coordination is conducted with the U.S. Department of Agriculture - Soil Conservation Service. No significant adverse impact to any important farmland or farm activity would be expected due to proposed project implementation. It may be noted that the amount of sediments silting/shoaling into Cleveland Harbor navigation channels has substantially declined over the last few decades.

6.30 Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, 4 January 1979. The proposed project would facilitate continued operation and maintenance of Federal navigation features at Cleveland Harbor (an international port located along Lake Erie) particularly dredging of polluted sediments from navigation channels and discharge into a CDF. See paragraph 1.14 and 1.15 pertaining to the International Joint Commission Area of Concern (AOC) on the Cuyahoga River and Remedial Action Plan (RAP), also.

6.31 Federal Aviation Regulations, Part 77 - Notice of Proposed Construction or Alteration. Project coordination was/is being conducted with the Federal Aviation Administration. Forms/Notices are to be coordinated in this regard.

6.32 Local Land Use Plans. It appears that the proposed project is consistent with considered local and regional land and associated water use plans. The proposed project is supported by the City of Cleveland.

#### STATEMENT RECIPIENTS

6.33 The following representatives, agencies, and interest groups have been and/or will be coordinated with pertaining to this study.

#### Congressional

U.S. Senator John Glenn  
U.S. Senator Howard M. Metzenbaum  
U.S. Representative Eric Fingerhut (19)  
U.S. Representative Martin R. Hoke (10)  
U.S. Representative Louis Stokes (11)

#### Federal

Federal Aviation Administration  
Federal Emergency Management Agency  
U.S. Department of Agriculture  
- Soil Conservation Service  
U.S. Department of Commerce  
U.S. Environmental Protection Agency  
U.S. Department of Health and Human Services  
U.S. Department of Housing and Urban Development  
U.S. Department of the Interior  
- Fish and Wildlife Service  
U.S. Department of Transportation  
- U.S. Coast Guard

#### State

Ohio State Clearinghouse  
Ohio Department of Health  
Ohio Department of Natural Resources  
Ohio Department of Transportation  
Ohio Environmental Protection Agency  
Ohio Historic Preservation Office

#### Local

City of Cleveland  
Northeast Ohio Area Coordinating Agency  
Northeast Ohio Regional Sewer District  
Cuyahoga County  
Cleveland-Cuyahoga County Port Authority



## Other Organizations

Cuyahoga River RAP Coordinating Committee  
Cleveland Waterfront Coalition  
Lake Carriers Association  
International Longshoremen's Association  
Great Lakes Commission  
Great Lakes United  
National Wildlife Federation  
North Coast Development Corp.  
Sierra Club  
Trout Unlimited

## Individuals

Individuals are not listed here, but a complete mailing list is on file at the U.S. Army Corps of Engineers, Buffalo District office.

## PUBLIC VIEWS AND RESPONSES

6.34 Reference the SUMMARY, SECTION 2 - ALTERNATIVE CONSIDERATIONS, SECTION 6 - PUBLIC INVOLVEMENT (this section), and EIS Appendice EIS-C, EIS-F, EIS-G, and EIS-H.

6.35 The views of the local sponsors and concerned resource agencies played a major role in the evaluation and selection of the proposed disposal site alternative. Reference paragraphs 6.02 through 6.08.

6.36 The following lists some key planning agencies and publics and some issues expressed during this study to date (Appendix EIS-G). Appendix EIS-H contains comments and responses on the Draft Letter Report and Draft EIS.

### City of Cleveland

° Maintain Harbor. Currently recommend Site 10B (15-Year) CDF Plan. Sewerline outflow extension costs. Accommodates future land/water use planning. Local sponsorship.

### Cleveland-Cuyahoga County Port Authority

° Same statement as for City of Cleveland.

### U.S. Environmental Protection Agency

° No open-lake discharge of polluted sediments. Consider full array of alternatives including those that would reduce dredging and disposal needs. Provide sufficient containment measures. Indicate long-term land use.

### U.S. Department of the Interior - Fish and Wildlife Service

° Consider full array of alternatives. Concerned about continued proliferation of disposal sites that utilize Lake Erie littoral zone. Consider environmental design measures and recommendations. Reference SECTION 6, paragraph 6.19.

#### Federal Aviation Administration

• Burke East Site (13-year), (15-year), or (20-year) CDF Plans or Site 10 or Site 10B CDF Plans would accommodate potential relocation/expansion of Burke Lakefront Airport facilities.

#### Ohio Environmental Protection Agency

• Consider full array of alternatives. Concerned about proliferation of disposal sites that take up Lake Erie littoral zone. Consider CDF increased height over area. Provide sufficient containment measures. Avoid potential for wildlife botulism problems.

#### Ohio Department of Natural Resources

• Consider full array of alternatives. Concerned about continued proliferation of disposal sites that utilize Lake Erie littoral zone.

Consider environmental design measures and recommendations. If CDF, would have preferred East 55th Street site for future marina/park development. Could not finance local sponsorship for that site. Burke East Site CDF created embayment water quality and access concerns.

#### Ohio Historic Preservation Office

• No significant adverse impacts to cultural resources would be expected with implementation of either the Burke East Site CDF or the Site 10B CDF Plan.

#### Northeast Ohio Coordinating Agency

• Burke East Site CDF created embayment storm sewer outflow and water quality concern. More stringent EPA standards.

#### Northeast Ohio Sewer District

• Burke East Site CDF created embayment storm sewer outflow and water quality concern. More stringent EPA standards.

#### City of Cleveland- Department of Public Utilities

• Burke East Site CDF created embayment storm sewer outflow and water quality concern. More stringent EPA standards.

#### Cleveland Waterfront Coalition

• They would like to utilize the currently utilized Site 14 CDF area for recreational park development, as soon as possible.

#### St. Clair Superior Coalition

• They would like to utilize the currently utilized Site 14 CDF for recreational park development, as soon as possible.

CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL APPENDICES

- EIS-A INDEX AND REFERENCES
- EIS-B PUBLIC NOTICE AND SECTION 404(b)(1) EVALUATION REPORT
- EIS-C U.S. FISH AND WILDLIFE SERVICE COORDINATION ACT REPORT
- EIS-D BOTULISM CONTROL MANAGEMENT PLAN
- EIS-E COASTAL ZONE MANAGEMENT - CONSISTENCY EVALUATION STATEMENT
- EIS-F CULTURAL RESOURCES CORRESPONDENCE
- EIS-G ENVIRONMENTAL CORRESPONDENCE
- EIS-H COMMENT/RESPONSE ON THE DRAFT LR AND DRAFT EIS

CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL IMPACT STATEMENT  
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INDEX AND REFERENCES

U.S. ARMY CORPS OF ENGINEERS  
BUFFALO DISTRICT  
1994

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**CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO**

**ENVIRONMENTAL IMPACT STATEMENT  
APPENDIX EIS-B  
SECTION 404(a) PUBLIC NOTICE AND  
SECTION 404(b)(1) EVALUATION**

**U.S. ARMY CORPS OF ENGINEERS  
BUFFALO DISTRICT  
1994**

PUBLIC NOTICE

CONFINED DISPOSAL FACILITY SITE 10B (15-Year)  
CLEVELAND HARBOR  
CUYAHOGA COUNTY, OHIO

This Public Notice has been prepared and distributed pursuant to Section 404(a) of the Clean Water Act (33 USC 1344). Its purpose is to specify what fill materials would be discharged into waters of the United States by implementation of the proposed project. This Notice provides an opportunity for any person who may be affected by such discharge to submit comments or request a public hearing.

The U.S. Army Corps of Engineers, Buffalo District, proposes to construct a new confined disposal facility (CDF) in Cleveland Harbor, Ohio. This proposed facility referred to as the Site 10B (15-Year) CDF is located in the East Basin of the Cleveland Lakefront Harbor in Ohio, approximately two miles east of the mouth of the Cuyahoga River. The dike would be attached to a former Corps of Engineers disposal facility on its northeast end, and would extend southwesterly for a distance of 4,500 feet along the lakeward side of the Burke Lakefront Airport. The recommended plan would involve extension of sewerlines and construction of a rubblemound stone dike that would be constructed in water depths of 20-25 feet below LWD. The CDF would encompass approximately 68 acres (Reference Figure 1 which follows this Evaluation Report). This facility would have a usable volume of about 3,800,000 cubic yards and a service life of about 15 years for placement of dredged polluted material from the Cuyahoga River Channel, the Old River Channel and the Cleveland Outer Harbor. Approximate dimensions of the dike would be as follows: length of 5,050 feet, a top width of 9 feet and a bottom width of about 200 feet, inner and outer side slopes of 2.0 feet horizontal to 1.0 foot vertical. Reference Figures 1 through 6.

About 300,000 cubic yards of dredged material would be placed annually into the Site 10B (15-Year) CDF by the Corps of Engineers contractors. The sampling and testing program conducted by Aqua Tech Environmental Consultants in 1986 and 1990 indicated that the material to be dredged was comprised almost entirely of silts and clays. Bulk inorganic analysis of the sediment samples classified all sediments, with the exception of those collected near the upstream limit of the Federal project, as being polluted and not suitable for unrestricted open-lake disposal. Reference Figures 7 through 9.

Public and private interests may apply for Department of the Army (DA) permits to dredge areas adjacent to the Federal channel and to discharge these materials at the proposed CDF. The attached Section 404(b)(1) Evaluation also

Low Water Datum (LWD)

applies to DA permits for the placement of polluted material dredged from the Cleveland area into the proposed CDF. Separate evaluations would be performed for permit requests involving the placement of material at other sites.

The latest published version of the National Register of Historic Places has been consulted. There are no registered properties or properties listed as being eligible for inclusion therein that would be affected by this project. By this Notice, the National Park Service is advised that currently unknown archaeological, scientific, prehistoric, or historical data may be lost or destroyed by work to be accomplished.

Based on the review of available environmental data, we have determined that the proposed work would not affect any species proposed or designated by the U.S. Department of the Interior as threatened or endangered, nor would it affect the critical habitat of such species. Therefore, unless additional information indicates otherwise, no formal consultation pursuant to Section 7 of the Endangered Species Act Amendments of 1978 will be undertaken with the U.S. Fish and Wildlife Service.

By this Notice, the Buffalo District is requesting issuance or a waiver of State Water Quality Certification under Section 401 of the Clean Water Act from the Ohio Environmental Protection Agency.

The proposed CDF has not been previously designated by the Administrator, USEPA.

Designation of the proposed CDF site for receipt of fill and dredged material associated with construction and operation of this Federal project shall be made through the application of Guidelines promulgated by the Administrator, USEPA in conjunction with the Secretary of the Army. If these Guidelines alone prohibit the designation of this proposed discharge site, any potential impairment to the maintenance of navigation, including any economic impact on navigation and anchorage that would result from the failure to use this disposal site, will also be considered. Preliminary assessment of proposed project impacts (as discussed in the Section 404(b)(1) Evaluation applying the guidelines for specification of disposal sites for dredged or fill material in 40 CFR 230) concludes that the proposed work would not cause unacceptable disruption to water quality uses of the affected aquatic ecosystem.

A Section 404(b)(1) Evaluation for the construction and operation of the proposed CDF and associated discharges of dredged material has been prepared; also the effects of constructing and operating a new CDF at Cleveland Harbor are addressed in the Environmental Impact Statement entitled, "Harbor Maintenance and Confined Disposal Facility [Site 10B (15-Year)], Cleveland Harbor, Cuyahoga County, Ohio" dated 1993.

Any interested parties and/or agencies desiring to express their views concerning the proposed work may do so by filing their comments, in writing, no later than 4:30 p.m., 30 days from the date of issuance of this Notice. A lack of a response will be interpreted as meaning that there is no objection to the proposed work.

Any person who has an interest which may be affected by the discharge of this fill and dredged material may request a public hearing. The request must be submitted in writing to the District Commander within 30 days of the date of this Notice and, must clearly set forth the interest which may be affected and the manner in which the interest may be affected by this activity.

Correspondence pertaining to this matter should be addressed to the District Commander; U.S. Army Engineer District, Buffalo; 1776 Niagara Street; Buffalo, New York 14207-3199; ATTN: Mr. James Karsten, Study Manager. If you have any questions or require additional information, please contact Mr. Karsten of my Project Management Branch at (716)879-4245.



JOHN W. MORRIS  
Colonel, U.S. Army  
Commanding

JAN 25 1993

SECTION 404(b)(1) EVALUATION  
CLEVELAND HARBOR, OHIO  
CONFINED DISPOSAL FACILITY - SITE 10B (15-YEAR) CDF

1. INTRODUCTION

1.1 Section 404 Discharges - Section 404 of the Clean Water Act (33 USC 1344) requires the evaluation of the water quality effects of the discharge of fill or dredged materials into waters of the United States. This evaluation for the proposed Cleveland Harbor confined disposal facility (CDF) project, has been prepared using U.S. Environmental Protection Agency Guidelines for Specifications of Disposal Sites for Fill or Dredged Material dated December 24, 1980, and is being coordinated with the public in conformance with guidance contained in U.S. Army Corps of Engineers, North Central Division letter dated September 4, 1979, "Public Coordination of Section 404(b)(1) Evaluations on Civil Works Projects." Generally, the first reference provides guidance on the content of Section 404(b)(1) Evaluations, while the second reference states that a Public Notice, with attached Preliminary Section 404(b)(1) Evaluation, should be issued at the earliest possible time before completion of the Final Environmental Impact Statement.

1.2 Section 404(b)(1) of the Clean Water Act (33 USC 1344) requires that discharge sites and fill or dredged material to be discharged into waters of the United States, be evaluated through the application of guidelines developed by the Administrator of the U.S. Environmental Protection Agency (USEPA) in conjunction with the Secretary of the Army. This Section 404(b)(1) Evaluation addresses the proposed U.S. Army Corps of Engineers confined disposal facility - referred to as the Site 10B (15-Year) CDF at Cleveland, Ohio. The evaluation includes all aspects of the facility which involve the discharge of fill and dredged material into waters of the United States.

2. PROJECT DESCRIPTION

2.1 Location

2.1.1 Cleveland Harbor is located on the south shore of Lake Erie, at the mouth of the Cuyahoga River, approximately 176 miles southwest of Buffalo, New York, and 96 miles east of Toledo, Ohio. The commercial harbor includes a breakwater-protected Lakefront Outer Harbor and improved navigation channels on the Cuyahoga River and Old River. The proposed Site 10B (15-Year) CDF site is located in the East Basin of the Cleveland Lakefront Harbor, approximately 2.0 miles east of the mouth of the Cuyahoga River (Reference Figure 1 at the end of this report).

2.2 General Description of the Plan/Action

2.2.1 The recommended Site 10B (15-Year) CDF plan would have a stone dike approximately 5,050 feet in length, that would enclose an area of about 68 acres. Several sewerlines would need to be extended through the site. The CDF would have a usable volume of about 3,800,000 cubic yards and a project service life of about 15 years, at an annual fill rate of about 300,000 cubic yards and consolidation rate of 0.78. The dike would have

an approximate top width of 9 feet and a bottom width of about 200 feet. A bench about 10 to 15 feet wide would be included approximately 18 feet below the Low Water Datum (LWD) elevation of +568.6 IGLD along the outside face of the rubblemound dike. Reference Figures 1 through 6.

### 2.3 Authority and Purpose

2.3.1 This project is being proposed for construction under the Harbor operations and maintenance authority.

2.3.2 The purpose of this Section 404(b)(1) Evaluation is to assess the water quality and associated impacts of constructing a CDF in the East Basin of Cleveland Harbor and the discharge of dredged polluted material into that facility. This evaluation utilizes current USEPA Guidelines 40 CFR part 230 and considers placement of fill and dredged material. This evaluation also applies to Department of the Army permit applications for the placement of dredged polluted material into the proposed Site 10B (15-Year) CDF.

### 2.4 General Description of Dike and Dredged Fill Material

#### 2.4.1 General Characteristics and Source of Dike Fill Material -

The proposed containment dike would be constructed of various sized stone up to armor-size material. Four types of stone would be utilized to build the dike. The type of stone making up the core of the dike - identified as "B" type stone would range in size from 1 to 6 inches. The "F" type stone would consist of stone units up to about 4 inches, that would be interspaced with smaller stone units down to sand-size (#200 sieve size) which would line the inside of the dike. Type "A<sub>2</sub>" and Type "U" stone would act as the armor stone on the lake side of the dike. The inner armor stone, Type "U", would range in weight from 150 to 850 pounds. The outer armor stone, Type "A", would range in weight from about 1 ton to 2-1/2 tons. Reference dike cross-section (Figure 2) of this evaluation report. The sewerline extensions would be corrugated galvanized steel pipe-arch with fiber bonded bituminous material coating extended on type "B" or 1 to 6 inch stone bedding. Reference proposed storm sewerline extension profile and section (Figures 4 and 5) of this evaluation report. Clean stone free from contaminants in other than trace amounts needed to construct the dike and bedding would be obtained from a commercial quarry. (Attached Figure 6 lists some potential sources of stone for the Cleveland CDF.)

2.4.2 A geotextile (filter fabric) would also be placed into the stone dike at the approximate location shown on attached Figure 2. The primary function of the filter fabric would be to prevent the finer fraction of the "F" stone from being displaced through the voids in the "U" stone by wave energy transmitted through the dike and by wave action within the facility. The filter fabric is not intended to trap suspended sediments, since that would be the function of the "F" stone.

2.4.3 Quantity of Dike and Dredged Fill Material - Approximately 90,000 tons of Type "A<sub>2</sub>" stone, 55,000 tons of Type "U" stone, 920,000 tons of Type "B" stone, and 130,000 tons of Type "F" stone would be needed to construct the proposed Site 10B (15-Year) CDF dike. Approximately 17,360 (Option A) to 122,500 (Option B) tons of Type "B" bedding stone would be required for the

feet and 825 feet (through water) storm sewerline extensions. It is anticipated that annually, for the service life of the CDF, the dredged material discharge rate into the site would be about 300,000 cubic yards per year. A 22 percent consolidation factor for the dredged material is assumed.

2.4.4 General Characteristics and Source of Dredged Fill Material - Dredged polluted sediment material to be placed into the Site 10B (15-Year) CDF would be obtained annually from the Cuyahoga River Channel, the Old River Channel, and the Cleveland Outer Harbor. The following provides an overview of sediment quality in the vicinity of these aforementioned areas, from which dredged material would be removed for deposition into the proposed CDF:

2.4.5 Sampling and testing of Cleveland Harbor Federal project sediments (inclusive of the Cleveland Outer Harbor, Cuyahoga River Channel, and Old River Channel) was performed in 1986 and 1990 (Aqua Tech Environmental Consultants, 1986 and 1990).

2.4.6 The 1990 sampling and testing program (Aqua Tech Environmental Consultants, 1990) included particle size and bulk chemical analysis, and was restricted to an area in the upstream reach of the Federal channel on the Cuyahoga River. This reach is represented by Sampling Sites 1 through 10, as illustrated in Figure 7. Particle size analysis of the sediment samples showed the sediments in the reach between Sampling sites 1 and 5 to be comprised primarily of sands (average percentage of sands is 85.6). Bulk chemical analysis of the sediment samples classified these sediments overall as "nonpolluted" under USEPA, Region V Guidelines for the Pollutational Classification of Great Lakes Harbor Sediments (USEPA, 1977) referenced at the time. Currently, these sands are discharged either in a nearshore site just offshore of Bratenahl Beach (located about 2.5 miles east of the proposed CDF site) or Perkins Beach (located about 5.5 miles west of the proposed CDF site). Sediments downstream from Sampling Site 5 (inclusive of Sampling Sites 5 through 10) are of increasingly inferior quality. These sediments are composed of primarily sands and silts (sand percentages range from 63.4 to 75.5) and, are classified overall as polluted and not suitable for unrestricted open-lake discharge. The sediments are presently placed in existing CDF Site 14 near Gordon Park (located approximately 2 miles east of the proposed CDF site).

2.4.7 The 1986 sampling and testing program (Aqua Tech Environmental Consultants, 1986) included particle size, bulk chemical (inorganic and organic) analysis and bioassays, and was inclusive of the entire Federal channel areas. Sampling sites for this program are shown in Figures 8 and 9. Sampling Sites 1 through 11 were used to represent the Cuyahoga River (Figure 8; sampling Site 11 at the mouth of the River is shown on Figure 9), and Sampling Sites 12 through 20 were used to represent the Cleveland Outer Harbor (Figure 9). Particle size analysis of the sediment samples indicated that the samples were comprised almost entirely of silts and clays. Bulk inorganic analysis of the sediment samples classified all sediments - with the exception of those collected near the upstream limit of the Federal project (represented by Sampling Site 1) - overall as being polluted and not suitable for unrestricted open-lake discharge. Organic analysis of the sediment samples detected the following parameters: 4,4-DDE (an Organochlorine Pesticide) at Sampling Sites 6 through 10; Aroclor 1254 (a PCB) at Sampling Sites 4 and 14 through 20; Bis(2-ethylhexyl)phthalate (a Phthalate Ester) at Sampling Sites 7,



9, 14, and 19; Toluene (a Purgeable Aromatic) at Sampling Sites 2 through 11; and various PAH's at various sampling sites, including Flouranthene, Naphthalene, Phenanthrene, Pyrene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b), and (k) Flouranthene and Chrysene. Ninety-six hour sediment bioassays were conducted on various test species (burrowing mayfly [Hexagonia limbata], a zooplankton [Daphnia magna Straus], and fathead minnow [Pimephales promelas] in order to evaluate the toxicological effects of the sediments. Using the appropriate pollutional classification scheme, mayfly, and fathead minnow mortalities, classified nearly all project sediments as polluted and not suitable for unrestricted open-lake discharge. Daphnia magna mortalities yielded classifications of polluted and not suitable for unrestricted open-lake discharge for Sampling Sites 2 through 7, 10, 14 through 18, and 20; and "non-polluted" for Sampling Sites 11 and 19. Due to the significant heavy metal and organic contamination of these sediments, as well as the inconsistent bioassay mortalities, all are placed in the existing CDF #14 near Gordon Park.

## 2.5 Description of the Discharge Site

2.5.1 Location - The proposed Site 10B (15-Year) CDF site for discharge of dike and dredged fill material is located in the East Basin of Cleveland Harbor, at Cleveland, Ohio and is approximately 2.0 miles east of the mouth of the Cuyahoga River. (Reference Figure 1.)

2.5.2 Size - The stone dike would have a total length of about 5,050 feet and would encompass an area of approximately 68 acres.

2.5.3 Type of Site - The site of the proposed project is presently unconfined in-lake shoreline. The proposed facility is a diked confined disposal facility (CDF). On its northeast end, the proposed dike would be attached to a former Corps of Engineers CDF. The southwest end of the dike would be attached to the lakeward side of the Burke Lakefront Airport shoreline.

2.5.4 Type of Habitat - The proposed CDF discharge site is within a deep, open water, offshore zone of Lake Erie, where water depths range from about 20 feet to 25 feet below LWD. Benthic substrate sampling conducted in 1988 by the U.S. Fish and Wildlife Service (USFWS) at the Burke East CDF site (located about a mile east) indicated that, bottom substrate at sampling stations ranged from mud to gravel and included many dead snails, leaves, tar globules, and what appeared to be bits of coal. Substrate conditions at the Site 10B (15-Year) CDF site would probably be quite similar to the Burke East site. With regard to vegetation, the USFWS found no aquatic macrophytes during their 1988 biological sampling at the Burke East (15-Year) CDF site. Similar paucities of submerged aquatic plants are anticipated at the deep-water, turbid area of the proposed Site 10B (15-Year) CDF in the Harbor. However, some filamentous algae clinging to hard substrate within the shallow waters zone along shore is likely. Also, the terrestrial shoreline contains some establishment of common woody and herbaceous plants.

2.5.5 Timing and Duration of Discharge - It is estimated that three construction seasons would be needed to complete extension of the sewerlines and installation of the stone dike for the Site 10B (15-Year) CDF project. Although the construction season would normally occur from about

April through mid-December, once the CDF is authorized to be built, work on the project would probably not commence until about June during the first construction season. During the subsequent two remaining construction seasons, work on the project would occur from about April through mid-December. Dredging and discharge of dredge material normally occurs for several months between May and September. Approximately 300,000 cubic yards of dredged material would be discharged to the CDF on an average annual basis.

## 2.6 Description of the Discharge Method, Actions Taken to Minimize Impacts, and CDF Processes

2.6.1 Construction of this project would be conducted by a private contractor under contract with the Corps of Engineers. It is anticipated that the contractor would utilize barges and a barge-mounted crane to construct the facility. Stone would be brought from the quarry to the barge-loading site by trucks or train and probably placed onto barges by conveyor or land-based crane. The stone would then be transported over water to the proposed project site. Smaller bedding/core/filter stone would be placed by dumping, chute, or clamshell, whereas the larger sized armor stone on the outside surfaces of the dike would be placed by the barge-mounted crane. Loss of fines during construction is expected to be minimized by the fact that placement will be in relatively protected water (inside the CDF). Excessive loss of fines will be further controlled by requiring immediate placement of filter fabric and cover stone over the "F" stone, along with restricting placement of "F" stone to calm water periods in the lake.

2.6.2 During the past ten years, maintenance dredging in Federal navigation channels of Cleveland Harbor and the Cuyahoga River was accomplished by contracted clamshell dredges, although in the mid-to-late 1970's, hopper dredges were used. With regard to the discharge of dredged material into the completed CDF, such work would likely be accomplished either by use of a scow and clamshell bucket whereby the dredged material in the scow would be removed by the clamshell bucket and then deposited directly into the CDF, or by use of a scow and pump, whereby dredged material would be pumped from the scow directly into the CDF via a pipeline. Pumpout facilities would not be constructed or provided as part of the CDF construction. The current mode of operation requires the dredging contractor to provide the necessary equipment to transfer the dredged material from the transporting vessel to the CDF.

2.6.3 Project contractors would be required to comply with the Corps of Engineers Civil Works Construction Specification entitled "Environmental Protection" (CW-01430, dated July 1978) pertaining to practical measures to be applied during construction/operations to protect significant water and associated land environmental resources (i.e., noise, dust, erosion, turbidity, etc.) This is included in project plans and specifications and would invoke use of practical measures to address such concerns, particularly if a problem may be or becomes evident. However, different contractors may use different equipment, which may require different protection measures, which makes directed use of specific measures difficult in most cases. A number of measures may be considered relative to the referenced situation however. For examples: (1) initial stone placement and placement of stone containing fines may be scheduled during calmer lake conditions, (2) stone material may be lowered before release to better direct placement and to

reduce impact and associated disturbances. Generally, protected resources and measure effectiveness must reasonably justify measure implementation. Additionally, Federal, State, and local personnel periodically inspect construction operations for evidence of and/or measures to address such concerns.

2.6.4 Some water column turbidity (resuspension of sediments) will be unavoidable during dredging operations regardless of the method (equipment) utilized. Of note, testing in the vicinity of dredging operations at other harbors generally indicate only temporary minor adverse impacts to water quality in the immediate vicinity of the dredging operations due to the adsorption factor.

2.6.5 While hydraulic or mechanical hopper dredging may minimize initial surface water column turbidity, eventual filled hopper overflow will generate some turbidity from the surface down. Considered measures to minimize water column turbidity in this situation (as necessary) may include: reasonable rate of operation, overflow considerations (i.e. amount/settling/filtration), and possibly downstream (i.e., aft) silt curtains. Of note, specific testing in the vicinity of hopper overflow dredging (i.e., Buffalo Harbor, 1984 and Rochester Harbor, 1986; Aqua Tech) indicate only temporary minor adverse impacts to water quality in the immediate vicinity of the dredging operation.

2.6.6 Mechanical dredging primarily causes turbidity when the bucket and dredged material is dragged up through the sediment and water column. Considered measures to minimize water column turbidity in this situation may include: reasonable rate of operation, monitoring to make sure the equipment is working properly (i.e., fully closed bucket), minimizing bucket to barge spillage (i.e., proximity, possibly spill troughs), if barge overflow (amount/settling/filtration considerations), and possibly downstream (aft) silt curtains.

2.6.7 Associated considered measures for transporting and discharging dredged materials into the CDF may include: reasonable fill and transport rate to avoid spillage, monitoring vessel containment items and measures, splash boards, monitoring discharge equipment containment items and measures, and spill troughs.

2.6.8 Once the dredged material is placed inside the CDF, a number of processes occur. Adsorption of pollutants to sediments and the settling of sediments and associated pollutants out from the water column is generally recognized as the primary pollutant removal/containment process within a CDF. Pollutants associated with dredged materials are strongly attached (adsorbed) to the organic and clay fractions. As the particulates settle out, the pollutants adsorbed to the particulates are removed from the water column contained in the sediments.

2.6.9 With a limestone core diked CDF, some of the effluent will move through the dike until the filter material becomes clogged. The effluent is filtered/treated in several ways as it moves through the various types of stone gradations of the structure. The effluent first passes through a filter fabric and/or a layer of filter stone. As shown on Figure 2, the CDF dike composition includes a 7 foot thick layer of 4 inch minus material (Type F stone) and filter fabric. Much of this stone material consists of coarse to

fine sands, which filters and traps fine polluted sediments from the effluent. Some loss of "fines" during the underwater placement of "F" stone (#200 sieve to 4-inches) would be unavoidable. This loss is expected to be minimized by the fact that placement will be in relatively protected water (inside the CDF). Excessive loss of fines will be further controlled by requiring immediate placement of filter fabric and cover stone over the "F" stone, along with restricting placement of "F" stone to calm water periods in the lake. Eventually, sediments will fill the stone pore spaces after which the ponding, settling, and decanting process would predominate.

2.6.10 Column settling, column leachate, and column filtration testing (i.e., most recently - Aqua Tech Environmental Consultants, Inc. 1990 and 1991) has been conducted on sediments from Cleveland Harbor. Laboratory studies done for the Buffalo District by the consultant using 7 feet of 4 inch minus material show that, for solids concentrations greater than 1,000 milligrams per liter, complete clogging of the material occurred within 30 to 60 minutes, such that no water passed through the material. For concentrations of suspended solids less than 1,000 milligrams per liter, clogging time was longer. Discharge concentration conditions indicate that the CDF material would plug with dredged material within a relatively short period of time after disposal operations. The tests also showed that before the test material clogged, as suspended solids filtered out, contaminant levels significantly decreased.

2.6.11 The effluent then filters through the remainder of the dike wall. During this passage, three processes are occurring - settling, adsorption, and bioadsorption/biodegradation. The very small amount of suspended sediment that may pass through the filter fabric and Type F stone would spend an average of several hours or more transiting the dike wall. During this time, additional settling occurs. Permeable dikes can remove dissolved constituents in pass-through water by adsorption and precipitation on surfaces ranging from crushed limestone, voids filled with silt, and surfaces coated with bacterial slime. Adsorption is the interphase transfer of soluble contaminants from the water to a solid surface where they are held by physical forces. Hydrophobic organics are particularly susceptible to removal by adsorption because they have a strong tendency to adsorb to almost any solid surface. Adsorption however, is limited by the hydrophobicity of the chemicals, the adsorption capacity of the dike materials, rate at which water is transmitted through the dike, and the fact that adsorption is a reversible process. The alkaline pH of limestone would promote metal precipitation.

2.6.12 Permeable dikes may also remove and treat dissolved organic constituents in much the same way as attached growth biological reactors remove and treat organic constituents in wastewater treatment plants. The mechanism of removal and treatment in attached growth biological reactors remove and treat organic constituents in wastewater treatment plants. The mechanism of removal and treatment in attached growth biological reactors is adsorption and assimilation by microbial films attached to a support medium. Because the ponded water in a CDF contains phytoplankton, zooplankton, bacteria, protozoa, and other microscopic organisms; some of these microorganisms are present inside the dike as biological film attached to the dike materials. The film can adsorb and degrade organic constituents present in the pass-through water. Since filling operations are intermittent, there

is a potential for significant biodegradation of adsorbed contaminants during the time between filling operations.

2.6.13 Due to the number of variables, it is difficult to ascertain the exact quantity of effluent that would go through the dike. Effluent (water) would filter through the dike until the interior stone layer becomes clogged. Reference paragraph 2.6.10. The dike filtration and other flow-through processes should sufficiently filter and process effluent that may flow through the dike to levels that reasonably achieve effluent water quality standards for receiving waters. Monitoring at other Buffalo District's permeable dike CDF's (i.e., Buffalo, New York; Huron and Cleveland, Ohio) has shown no significant impairment of water or sediment quality in the lake waters outside the dikes due to movement of pollutants through the dikes. (i.e. Aqua Tech, 1991, 1990, 1986; GLL, 1981). Additionally, shortly after the discharge operation has ceased, the water quality inside the facility mirrored that of the reference site in the lake. These results reflect research by the Corps of Engineers Waterways Experiment Station, which indicate that the pollutants adhere tightly to the fine grain sediments.

2.6.14 When the CDF is filled to about average lake level, after dredged material is deposited in the CDF and allowed to settle and the dike filter material is plugged, some excess effluent may be drained through the weir discharge. CDF weir discharges are generally only utilized during the later use of the CDF, when fill material reaches above lake level. Even during the middle life of the CDF, ponded water may not be drained but left to evaporate. Use of weir discharge may also be utilized to avoid undesirable conditions (vegetation, waterfowl attraction, botulism conditions, etc.) in the CDF.

2.6.15 The CDF overflow weir would be constructed with removable boards or slide weir to provide for an adjustable weir top elevation. Prior to discharge of dredged polluted material into the CDF, the weir top elevation would be established high enough to contain the discharged dredged material and/or to provide for sufficient retention time for particulate settlement. When the ponded water particulate concentration reaches acceptable particulate concentration for overflow weir effluent discharge, water would be allowed to flow over the top of the weir and/or the overflow weir top elevation would be lowered by board removal or by lowering the slideweir to gradually decant the ponded water. The plan location of the CDF discharge weir is at the northern corner of the CDF while discharges into the CDF would likely be initiated along the northeastern dike vicinity and possibly migrate along the dike toward the CDF discharge weir. This arrangement would provide a short distance from the dredging area to the discharge site (into the CDF) and reduce discharge turbidity by maximizing settling distance between the discharge site and the CDF discharge weir. It is assumed that about 4 feet of effluent contained in the CDF (approximately 500,000 to 750,000 cubic yards) may be discharged (after settling) via the weir from the CDF during disposal periods when the fill material in the CDF reaches above lake level.

2.6.16 The Buffalo District will monitor the discharge operation during early years of dredged material disposal, when the CDF will have sufficient settling capacity. Based on water quality monitoring information obtained in the CDF at that time, an operational plan to meet future effluent standards for Lake Erie can be developed in subsequent years.

2.6.17 An initial plan of operation would target the suspended solids concentration in any effluent discharged from the weir to below 100 milligrams per liter. Testing, coordination, and precedence indicate that suspended solids of 100 mg/l or less should achieve water quality standards for receiving waters. This is a developed standard which the Buffalo District considers to be a reasonable achievable level that has been acceptable to other agency interests at other CDFs. Generally, it takes from one to several or more days for polluted sediments discharged into the CDF to settle out from the water column to a 100 mg/l particulate concentration at the discharge site, depending on a number of variables including: discharge method, slurry characteristics, and receiving water conditions (i.e., wave turbidity, etc.). Prior to discharge through the CDF weir, water sampling is conducted to determine ponded water particulate concentration. During the last years of the discharge operations, weir effluent concentrations above 100 but below 200 milligrams per liter may persist. A flocculent may be added at times during the dredged material discharge to accelerate settling, in order to maintain an outflow concentration close to 100 milligrams per liter. Filter devices (i.e., filter fabric) have also been utilized to further restrict particulate and associated pollutant level outflow from the weir.

2.6.18 Any effluent discharged through the CDF weir would be required to meet State water quality standards or waivers thereof for all chemical constituents before or after the application of an appropriate mixing zone. The size of any small mixing zone (if needed), would be determined in coordination with the Ohio EPA after their review of the application(s) for a 401 Certification for use of the CDF weir, via the Public Notice and Section 404 (b)(1) Evaluation.

2.6.19 Testing, coordination, and precedence indicate that the CDF processes including: adsorption and settling, dike filtration and flow-through, plugging and further settling, and weir discharges (limiting suspended solids to 100 mg/l or less) should achieve effluent water quality standards for receiving water.

### 3. FACTUAL DETERMINATIONS

#### 3.1 Physical Substrate Determinations

3.1.1 Substrate Elevation and Slope - The proposed CDF site consists of a sloping lake bottom substrate that slopes toward the outer breakwall from about 18 feet to 26 feet below LWD.

3.1.2 Sediment Type - The fill material for construction of the dike would not be composed of sediment, but would consist of clean stone, most likely limestone, obtained from an acceptable quarry. Limestone, by definition, is rock formed chiefly from accumulations of organic remains that consist mainly of calcium carbonate. Composition of the dredged material to be discharged into the CDF site was previously addressed in paragraphs 2.4.6 and 2.4.7 of this evaluation and is similar to that at the CDF site.

3.1.3 Dredged/Fill Material Movement - No significant movement of stone material used to construct the dike of the proposed CDF is anticipated. Any movement of dredged material discharged into the CDF would be confined to the interior of the diked area. During discharge, the CDF would serve as a

settling basin for the deposition of suspended sediments. As the area is filled, dredged material would spread throughout the remainder of the containment area and further settling would occur as the material is allowed to consolidate.

3.1.4 Physical Effects on Benthos - Deposition of stone to construct the CDF would disrupt, displace, and destroy a number of existing benthic invertebrate organisms in the general vicinity of stone dike site. Some of the invertebrates would be crushed during stone placement whereas others would be disrupted and displaced. Turbidity caused by disruption of the water column and substrate silt and detritus resuspension, would locally temporarily aggravate breathing mechanisms of benthic life. As resuspended material settles out, some invertebrates would probably be smothered. Within the 68-acre CDF site, annual disruption of the enclosed water column and covering of existing substrate during deposition of dredged material, would temporarily concentrate turbidity over the confined area and smother a number of such invertebrates as resuspended material settled out. Surviving benthic organisms at the site would continue to recolonize the CDF site to some degree, until eventually the entire site is completely filled and converted from aquatic to terrestrial habitat.

3.1.5 Other Effects - Since the CDF would be protected by a stone containment structure, the effects of current patterns, water circulation, wind and wave action on the movement of dredged material in this site should be minor. The discharge of dredged material into the CDF should cause no significant changes in substrate elevation and slope, sediment type, or benthic populations outside the CDF. The stone containment structure is designed as a long-term facility able to withstand the force of ice, wind, and waves.

### 3.2 Water, Circulation, Fluctuation, and Salinity Determinations

#### 3.2.1 Water:

3.2.1.1 Salinity - Salinity determinations are not applicable to this Section 404(b)(1) Evaluation, since the dredged and fill material discharge site is not located in marine waters.

3.2.1.2.1 Water Chemistry - Deposition of nonpolluted stone to construct the CDF dike would not significantly alter the chemistry and physical characteristics of the receiving water in the East Basin of Cleveland Harbor. With regard to dredged material to be discharged into the CDF, it is anticipated that over 99 percent of the pollutants (Reference 2.4.4-2.4.7 and 2.6.8) would likely be bound to the sediments of such material, which would effectively be reduced by settling out of such particulates in the CDF. Due to adhesion of pollutants to sediments, most such contaminants associated with suspended solids would therefore essentially be removed from any water that filters through the dike stone. (See 2.6.8 through 2.6.13 for filtration processes). The CDF, weir and dewatering would be designed for water discharge over the weir to have maximum suspended solids concentrations of 100 milligrams per liter (Reference paragraph 2.6.14 through 2.6.19). This discharge would likely need a small mixing zone to meet some State water quality standards for metals and turbidity. Water turbidity would unavoidably

occur in the general vicinity of dike construction, as well as within the CDF site during annual discharge of dredged material. Stone deposition to construct the CDF would not significantly alter the pH of the receiving waters; also, deposition of dredged material into the confined disposal facility would not significantly alter pH in waters outside the CDF. As the area within the CDF is filled, the reduced volume of water would be subject to somewhat more rapid seasonal water temperature changes and possibly some increased algae growth.

3.2.1.2.2 Six sewerline and outflows that discharge during high rainfall periods would be combined into three pipes, extended on stone bedding material, and the outflows relocated, as indicated by the proposed plan. The stone bedding material and sewerline pipe-arch are relatively inert material and placement would not significantly adversely affect water quality. Impacts would be similar to that described for placement of dike stone material. Relocated outflow impacts would be similar to those described under existing conditions, however at the new locations. Potential impacts may be minor degradation of water quality by temporary increase turbidity, discharge of organic matter (i.e., leaves, debris), discharge of and settling out of suspended solids, as well as possible temporary coliform bacterial increases from non-point sources of runoff.

3.2.1.3 Clarity - Disruption of the water column and bottom substrate during stone and dredged material deposition would cause temporary localized increased turbidity due to resuspension of silt, sediment and detritus, that would contribute to short-term reduction in water clarity, until materials in suspension settle out and ambient conditions return. Discharge of effluent over the weir would temporarily increase turbidity, mainly within the mixing zone near the CDF.

3.2.1.4 Color - Water color in the vicinity of the potential project site is normally turbid and dark in color. During the period of stone dike construction and dredged material deposition, the water column would temporarily be altered to a darker color as bottom substrate silts, sediments, and detritus become resuspended into the water column.

3.2.1.5 Odor - No significant disagreeable odor would be anticipated by deposition of the stone fill into waters at the proposed project site. Some localized temporary adverse odor may occur from dredged sediments during deposition of material into the CDF site.

3.2.1.6 Taste - No significant alteration in taste would be anticipated by deposition of stone fill into waters at the proposed project site. Some temporary deterioration in taste from ambient conditions would likely occur in water within the CDF during periods of dredged material discharge.

3.2.1.7 Dissolved Gas Levels, Nutrients, and Eutrophication - No significant alteration of dissolved gas levels and nutrients would be anticipated by deposition of stone fill into waters at the proposed project site. Some temporary alteration in dissolved gas and nutrient levels would occur within the CDF during the discharge of dredged material. Although eutrophication would probably be accelerated or altered to some degree within the CDF by deposition of dredged material, no significant increase in eutrophication in water outside the CDF is expected by deposition of stone and discharge of dredged material.



### 3.2.2 Current Patterns and Circulation

3.2.2.1 Current Patterns and Flow - A formerly completed CDF adjacent to the proposed project site exists in the East Basin that presently contributes to flow constriction. Installation of the Site 10B (15-Year) CDF would probably not create any more of an open-water bottle-neck constriction between the existing Outer Breakwater and shoreline than that which presently exists in this area. Construction of the CDF would necessitate extension of several sewer outfalls through the facility that would then discharge into the open-water zone of the East Basin. It is not anticipated however, that installation of the proposed CDF would significantly alter current patterns and flows in the general vicinity of the potential project site.

3.2.2.2 Velocity - No significant alternation in water velocity is anticipated. Construction of the CDF would necessitate extension of several sewer outfalls through the facility that would then discharge into the open-water zone of the East Basin. Because the open-water area between the existing Outer Breakwater and the new CDF dike would be reduced under project conditions, water velocity in this area would increase as compared to velocities that presently occur. The velocity increase would tend to keep less sediment from depositing at the sewer outfall discharge points than what occurs under present existing conditions.

3.2.2.3 Stratification - No significant impacts.

3.2.2.4 Hydrologic Regime - No significant impacts.

### 3.2.3 Normal Water Level Fluctuations

3.2.3.1 No significant impact on normal water level fluctuations is anticipated.

### 3.2.4 Salinity Gradients

3.2.4.1 As previously stated, salinity determinations are not applicable to this evaluation.

### 3.2.5 Actions Taken to Minimize Impacts

3.2.5.1 Reference paragraphs 2.6.3 through 2.6.19. Actions taken to minimize impacts include construction scheduling and method considerations (2.55, 2.6); practical construction, dredging, and disposal discharge "Environmental Protection" measures (2.6.3 - 2.6.7); and CDF adsorption, settling, filtration, bioadsorption/biodegradation and decanting processes (2.6.8 - 2.6.19).

### 3.3 Suspended Particulate Determinations

3.3.1 Expected Changes in Suspended Particulates and Turbidity in the Vicinity of the Discharge Site

3.3.1.1 A discussion of the expected changes in suspended particulates and turbidity was addressed in Section 3.2 of this evaluation; also, discharge methods and processes are discussed in Section 2.6. Discharge of stone during dike construction would temporarily resuspend silt, sediment, and detrital substrate particulates into the water column and cause some increased localized turbidity.

3.3.1.2 As mentioned previously, the discharge of dredged material would be conducted in a manner that would maximize retention of particulates within the CDF, thereby controlling movement of suspended sediment over the weir into the lake in the vicinity of such discharge, which would help minimize adverse impact on lake water outside the CDF. Retention maximization of particulates would be accomplished in two ways. First, the CDF weir would be constructed with removable boards. In this way, sufficient retention times and ponding depths would be provided to ensure a weir effluent suspended solids levels of 50-100 mg/l for the first 14 years of operation, at the basic dredged material discharge average rate of 4 cubic feet per second (4 scows/day). In the last year of operation, the suspended solids level is expected to remain below 200 mg/liter. Sporadic use of the CDF by large vessels from the outer harbor discharging at higher rates would be regulated to provide an acceptable effluent quality. Secondly, particles moving through the dike wall would be subject to four removal processes that can attenuate the transport of pollutants through a limestone core dike: settling, filtration, absorption, and bioabsorption/ biodegradation. Reference paragraphs 2.6.3 through 2.6.19.

3.3.2 Effects on Chemical and Physical Properties of the Water Column (Light Penetration, Dissolved Oxygen, Toxic Metals and Organics, Pathogens, Aesthetics, and Others as Appropriate)

3.3.2.1 Discussions on the chemical and physical aspects on the water column are included in paragraphs 2.4.5 through 2.4.7 and 2.6.3 through 2.6.19 and Section 3.2 of this evaluation. Temporary decreases in light penetration and dissolved oxygen would occur during dredged material deposition and, to a somewhat lesser extent, during construction of the stone dike. Two major processes occur when dredged material is placed in the CDF to separate sediments and associated adsorbed pollutants (most pollutants are adsorbed to sediment particulate) from the water: (1) Sediments and pollutants are filtered out while some effluent passes through the dike wall and (2) sediments and pollutants settle out from the ponded water column; after which the relatively clean water is left to evaporate or is decanted from the CDF through the CDF discharge control weir. No significant releases of toxic metals, organics, and pathogens are expected from the CDF. A potential adverse unavoidable impact association with construction activity along the coastal zone of Lake Erie is the temporary increased turbidity, some smoke, odor, dust and short-term detracton from the natural view caused by the use of heavy equipment when the project is being built, as well as during annual dredged discharge operations. Installation of the stone dike would further add to the man-made development appearance of the coastal zone in the East Basin.

3.3.2.2 As mentioned previously, six sewerline and outflows that discharge during high rainfall periods would be combined into three pipes, extended on stone bedding material, and the outflows relocated, as indicated by the proposed

plan. The stone bedding material and sewerline pipe-arch are relatively inert material and placement would not significantly adversely affect water quality. Impacts would be similar to that described for placement of dike stone material. Relocated outflow impacts would be similar to those described under existing conditions, however at the new locations. Potential impacts may be minor degradation of water quality by temporary increase turbidity, discharge of organic matter (i.e., leaves, debris), discharge of and settling out of suspended solids, as well as possible temporary coliform bacterial increases from non-point sources of runoff.

### 3.3.3 Effects on Biota (Primary Production, Photosynthesis, Suspension/Filter Feeders, and Sight Feeders)

3.3.3.1 The area that would be occupied by the proposed Site 10B (15-Year) CDF would no longer serve as an aquatic environment similar in function to existing conditions. The short-term increase in water turbidity and decrease in sunlight penetration during construction of the stone dike would probably cause some localized decrease in primary production of plankton and minor decrease in algae/plant photosynthesis. The short-term increase in water turbidity within the CDF caused during annual deposition of dredged material, would annually disrupt primary production of planktonic life and decrease photosynthesis of phytoplankton and algae at the site before the CDF is completely filled. Deposition of stone during construction would crush some filter feeders (i.e., benthic invertebrates living on and in the substrate), displace plankton and temporarily aggravate breathing and filtration mechanisms of such organisms. Deposition of dredged material would annually disrupt and smother a number of benthic invertebrates within the CDF. Eventually, all such aquatic biota would be destroyed when the site was completely filled and changed to terrestrial habitat. Stone dike slopes outside the CDF site would provide long-term habitat for colonization by some species of benthic organisms and algae. Substrate provided by settled dredged material deposited into the CDF would continue to annually provide habitat for benthic organisms colonization until fill material accumulated above the waterline. Due to increased turbidity, some short-term adverse impact on finding prey by sight feeders may occur in the general vicinity of the project site. However, many sight feeders would probably tend to avoid aquatic habitat in the immediate vicinity of construction, until work ceased and turbidity subsided.

### 3.3.4 Actions Taken to Minimize Impacts

3.3.4.1 In order to help minimize adverse impacts on aquatic biota, the contractor would be required to: complete the project within three construction seasons; begin work no earlier than June of the first construction season, which would allow for less potential disruption to early spring spawning aquatic organisms during the first year of CDF installation; minimize potential for accidental spillage of fuel, oil, and/or grease; follow the Corps of Engineers Civil Works Construction Guide Specification for "Environmental Protection" (CW-01430, dated July 1978) of water resources. Reference paragraphs 2.6.3 through 2.6.19 also.

### 3.4 Contaminant Determinations

3.4.1 The term "contaminant" is defined by USEPA Guidelines 40 CFR 230.3 (e) as "a chemical or biological substance in a form that can be

incorporated into, onto, or be ingested by and that harms aquatic organisms, consumers of aquatic organisms, or users of the aquatic environment, and includes but is not limited to the substances on the 307(a)(1) list of toxic pollutants promulgated on 31 January 1978 (43 FR 4109)."

3.4.2 The material to be placed into coastal waters of Lake Erie at the proposed CDF project site to construct the dike, would consist of clean nonpolluted stone obtained from an acceptable quarry. Similar stone would be utilized to maintain the CDF dike, if such maintenance is needed in the future. The quarry stone fill material appears to meet exclusion criteria for testing the chemical - biological interactive effects - outlined in 40 CFR 230.4-1(b), (2), and (3), and no further testing on this material will be conducted. Such material may be excluded from the aforementioned testing if any of the exclusion criteria as defined in 40 CFR 230.4-1(b)(i), (ii), or (iii) are met. Briefly stated, these exclusion criteria are: (i) that the dredged or fill material is composed predominately of sand, gravel, or other naturally occurring sedimentary material with particle sizes larger than silt, usually found in high energy environments; (ii) that the material is suitable and being used for beach nourishment; (iii) that the material proposed for discharge is primarily the same as at the proposed discharge site. This final criteria requires that the material proposed for discharge is sufficiently removed from sources of pollution to provide reasonable assurances that the material is not polluted from such sources, and that adequate conditions are provided on the disposal method to provide reasonable assurance that the discharge material will not be moved by currents or otherwise in a manner that is damaging to the environment outside the disposal area. The stone fill material proposed for placement below the ordinary high water mark in the East Basin of Cleveland Harbor is considered to be nonpolluted.

3.4.3 With regard to the dredged material that would be placed into the proposed Site 10B (15-Year) CDF, a discussion of contaminant levels on this material to be obtained from the Cuyahoga River Channel, the Old River Channel and the Cleveland Outer Harbor was previously included in Section 2.4 (2.4.4 - 2.4.7) of this evaluation report. Water quality impacts of the contaminated dredged material were addressed Section 2.6 (2.6.3-2.6.19), and in Sections 3.2 and 3.3.

### 3.5 Aquatic Ecosystem and Organism Determinations

3.5.1 Effects on Plankton - During operation of the CDF, populations of phytoplankton (planktonic plant life) and zooplankton (planktonic animal life) within this confinement facility would probably be cyclic, due to the influence of annual deposition of polluted dredged material. Eventually, all plankton within the CDF would be destroyed when the site is completely filled and converted from an aquatic to a terrestrial environment.

3.5.2 Effects on Benthos - Construction of the stone dike and discharge of dredged material into the facility, would result in the destruction of benthic organisms inhabiting the substrate at the project site upon which such fill material would be deposited. An area of about 68 acres of lake bottom substrate would be covered by dredged material. About 25 acres of benthic substrate would be covered by the base of the stone dike. Although the settled dredged material would continue to provide habitat substrate for recolonization by such surviving organisms, eventually, all benthic invertebrates within the site would be destroyed when the site is completely

filled and is converted from an aquatic to a terrestrial environment. The submerged dike slope surface outside the CDF (approximately 9 acres) would continue to provide long-term habitat for benthic invertebrate colonization. Submerged dike stone would provide habitat for colonization by zebra mussels.

**3.5.3 Effects on Nekton** - Deposition of stone, and dredged fill material would destroy a total of about 80 acres of existing benthic substrate feeding habitat for fish ( acres covered by stone and acres eventually completely covered by dredged material). Also, within the area of such fill deposition, the entire deep open-water column would eventually be lost as feeding habitat for fish (i.e., source of plankton organisms in the food chain). The stone surface along lake-side submerged rubblemound dike slopes would provide about 9 acres of new long-term habitat for utilization by fish. Water turbidity during construction of the stone dike may temporarily aggravate gill systems of fish in the general vicinity of the project site, and cause fish to temporarily avoid the water column zone being disrupted by active construction.

**3.5.4 Effects on the Aquatic Food Web** - Eventual elimination of aquatic habitat associated with the proposed CDF would contribute to a reduction in planktonic and benthic production that would reduce the amount of available feeding habitat for fish. Except for waterfowl, terns and gulls that would probably utilize the CDF, aquatic biota in the proposed confinement area would be isolated by the stone dike from the aquatic food web in Lake Erie. Relatively rapid colonization of the stone dike slopes located outside the CDF by some algae and benthic organisms is anticipated, which would help replace some of the food chain organisms lost by installation of the facility. If zebra mussels proliferate along the submerged stone surfaces, there could be some adverse impact on warm-water fish spawning along such habitat. Indirectly, zebra mussels may provide food for some species of diving ducks and warm-water fish (i.e., freshwater drum).

**3.5.5 Effects on Special Aquatic Sites** -

- a. Sanctuaries and Refuges: No significant impact
- b. Wetlands: No significant impact
- c. Mud Flats: No significant impact
- d. Coral Reefs: Not applicable
- e. Riffle and Pool Complexes: No significant impact

**3.5.6 Threatened and Endangered Species** - In a draft Fish and Wildlife Coordination Act Report dated February 11, 1992 from the U.S. Fish and Wildlife Service (USFWS) on the proposed CDF site project area, the USFWS stated that "the proposed project lies within the range of the piping plover and Indiana Bat, Federally listed endangered species. Due to the project type and location, the project, as proposed, will have no effect on these species."

**3.5.7 Other Wildlife** - The proposed CDF is located in a heavily industrialized/commercialized area and adjoins the Burke Lakefront Airport. As dredged material begins to fill the CDF to a point where fill material is protruding above the waterline, the temporary exposed damp mudflats may attract foraging shorebirds and possibly result in some temporary seasonal increased use by seagulls, until the CDF becomes entirely filled, becomes better drained and dense natural vegetation establishes over the area. Annual discharge of dredged material into the CDF would progressively decrease the

amount of open-water habitat availability for use by aquatic birds (i.e., gulls, terns, waterfowl). Once the site reverts to entirely terrestrial habitat and becomes invaded by natural woody and herbaceous vegetation, upland wildlife (such as cottontail rabbits, squirrels and other rodents, as well as ring-necked pheasants and songbirds) would likely be attracted to the nesting, brooding and feeding habitat that established on site.

### 3.5.8 Actions Taken to Minimize Impacts

- a. The discharge site would allow the continued dredging and confinement of polluted sediments from the Cuyahoga River Channel, the Old River Channel, and Cleveland Outer Harbor, thereby contributing toward reducing contamination of natural resources in the Cuyahoga River - Lake Erie System.
- b. The east side of the proposed Site 10B (15-Year) CDF is located adjacent to an existing discharge site, which reduces the amount of dike stone needed to be placed into the aquatic environment.
- c. The discharge site would be diked to prevent and limit the movement of dredged material.
- d. The CDF would be constructed as quickly as possible in order to help minimize the adverse aesthetic impact of construction, as well as to help minimize disruption to seasonal and recreation activity in the project locale.
- e. The CDF filtered and discharge effluent would be managed to confine and minimize the release of suspended particulate associated pollutants.
- f. Prior to initiation of dredged material discharge into the new CDF, as many fish as possible would be removed from the completed CDF and released into the surrounding waters outside this facility.
- g. A botulism control plan was prepared with the intent to potentially help minimize or prevent adverse impacts on aquatic birds that may utilize the CDF.
- h. As much as feasibly possible, construction work would be accomplished in accordance with environmental recommendations provided by Federal and State resource agencies during coordination of the proposed project.

### 3.6 Proposed Discharge Site Determinations

3.6.1 The mixing zone for the CDF project discharge should generally be considered to be the area within the containment dike. The facility would be operated in a manner that would maximize the retention of the particulate and pollutant matter within the CDF. The following factors were considered in determining the acceptability of the mixing zone as required by USEPA Guidelines: water depth; current velocity, direction, and variability; degree of turbulence; stratification, discharge vessel; rate of discharge; ambient concentration of constituents and dredged material characteristics; number of discharge actions per unit time; and other factors affecting rates and pattern of mixing. See next page.

<u>Factor</u>	<u>Relevant Comments</u>
Water Depth	The depth varies from about 13 feet at the south end of the CDF to about 21 feet below LMD at the north end. Average depth within the potential CDF site is about 19 feet below LMD. (Reference NOAA lake chart entitled "Cleveland Harbor Including Lower Cuyahoga River. Water depth at the location of effluent discharge into the harbor from the proposed CDF is approximately 20 feet LMD.
Current Velocity, Direction, and Variability	Direction of flow between the Outer Breakwater and the existing shoreline is parallel to the breakwater and varies from SE to NW. With installation of the new CDF dike, current patterns would remain the same as under existing conditions, however, velocity would probably slightly increase in the immediate vicinity of the CDF area. Discharge of effluent out of the proposed CDF will not alter current velocity and direction of flow in the harbor.
Degree of Turbulence	Water turbulence due to North-South winds and wave action would decrease with project conditions, since the exposed area of open-water to the wind would be decreased. During discharge of dredged material into the CDF, turbidity would temporarily increase until suspended sediments and detritus settled out of the water column. Effluent discharged over the weir into the harbor would be controlled by the CDF ponding depth and sediment settling, in order to minimize water turbidity.
Stratification	No water stratification change anticipated in the existing Basin area between the shoreline and Outer Breakwater. Possibly some stratification may occur within the CDF that would likely decrease as water depth becomes shallower as the CDF becomes filled with dredged material.
Discharge Vessel	Stationary
Rate of Discharge	The rate of discharge of dredged material into the CDF would be up to 3000 to 6000 cubic yards per hour. Dike stone would be discharged at the approximate rate of 1630 tons per day. Once the ponded water level during disposal operations reaches the level of the weir, the rate of effluent discharge from the CDF over the weir into the harbor would be about 20 to 40 cubic yards per second during disposal operations.
Ambient Concentration of Constituents of Interest and Dredged Material Characteristics	Discussed in Sections 2.4.1 and 2.4.3 through 2.4.7.
Number of Discharge Actions per Unit Time	With regard to deposition of dredged material, the number of discharge actions would be variable - depending on transport times, dredging conditions and equipment used. One scow load (1600 cubic yards). Several scows would be used when dredging occurs. In order to place dike stone, it is estimated about 214 stone deposition actions may occur during the first construction season; 275 stone deposition actions during the second construction season, and about 229 stone deposition actions during the third construction season. The number of weir effluent discharges into the harbor per unit time would be equal to or less than the number of dredged material discharge actions - depending on ponded water levels in the CDF.
Other Factors Affecting Rates and Patterns of Mixing	Water Circulation, water level fluctuation, and discharge site operation were considered previously in this evaluation.

3.6.2 Determination of Compliance with Applicable Water Quality - Ohio Environmental Protection Agency (OEPA) water quality standards for the proposed work areas are described in Chapter 3745-1 of the Ohio Administrative Code. Recent actions have been taken by the OEPA to upgrade Water Quality Standards for the potential project locale. As stated in a letter sent to the Buffalo District Corps office by the Northeast Ohio Regional Sewer District, dated February 12, 1990: "Previously the area which will be affected by this project was a Lake Erie "excepted area" and had a special designation status. Recent action by the Ohio EPA upgrades the use designation in several ways. Exceptional Warm Water Habitat criteria are now applicable in place of the previous Warm Water Habitat criteria and, Bathing Water criteria now apply in place of Primary Contact Recreation criteria. The designation of State Resource Water was also added."

3.6.3 Deposition of relatively inert non-polluted stone and filter material to construct the CDF dike would not significantly alter the physical and chemical characteristics of the receiving water of the lake. Reference paragraphs 2.6.3 and 3.4.2 also.

3.6.4 Harbor channel sediment sampling and analysis (1986, 1990) primarily to determine the suitability for unrestricted open-lake disposal was discussed in paragraph 2.4.4 - 2.4.7 of this Section 404(b)(1) Evaluation Report.

3.6.5 Particulate size, bulk chemical, elutriate, bioassay, (Reference paragraph 3.6.4), column settling, column leachate, and column filtration tests have been conducted on contaminated sediments from Cleveland Harbor and/or on proposed dike filtration material, (i.e. Aqua Tech, 1991, column settling and CDF dike core filtration material; Aqua Tech, 1990, column settling and leachate; Aqua Tech, 1990, sediment sample analysis (Upper Cuyahoga); Aqua Tech, 1986, sediment sample analysis (Outer Harbor and Lower Cuyahoga); Great Lakes Laboratory, 1981, Dike 14 water quality and sediment analysis) Reference EIS APPENDIX-EIS-A INDEX AND REFERENCES, also.

3.6.6 Water turbidity would unavoidably occur within the CDF site in the vicinity where the discharged dredged material enters the interior water during annual discharge of dredged material. During discharge, compliance with individual standard water quality parameters would not be expected within the discharge plume within the CDF. The mixing zone for the discharge into the CDF should generally be considered the area within the containment dike.

3.6.7 Water column settling and elutriate testing demonstrate that most pollutants associated with contaminated dredged material are strongly attached (absorbed) to sediments and are largely removed from the water column with the sediments, as sediments settle out from the water column. Post testing results show that shortly after dredged material discharge operation cease quality inside CDFs reflect that of Lake reference sites (i.e. Aqua Tech, 1986; GLL, 1981). Column leachate and column filtration testing demonstrate that the dike filtration and other flow through processes will sufficiently filter and process effluent that may flow through the dike to levels that reasonably achieve effluent water quality standards for receiving lake waters. Additionally, monitoring at Buffalo District permeable dike CDFs (i.e. Buffalo, NY; Cleveland, OH; Huron, OH) has shown no significant impairment of water or sediment quality in the lake waters outside the dikes due to movement of pollutants through the dikes (i.e. Aqua Tech, 1991, 1990, 1986; GLL 1981). CDF construction and processes were discussed in some detail in paragraphs 2.6.1 - 2.6.19. Reference paragraphs 3.2.1.2.1 and 3.3.2, also.



3.6.8 An initial plan of operation would target the suspended solids concentration in any effluent discharged from the weir to below 100 milligrams per liter. Generally, it would take from one to several or more days for polluted sediments discharged into the CDF to settle out from the water column to a 100 mg/l particulate concentration for the weir discharge, depending on a number of variables. Reference paragraph 2.6.14 - 2.6.19, also. This discharge may, at times, require a small mixing zone for turbidity and the parameters copper, mercury, and ammonia. It is anticipated that a mixing zone distance of 1000 feet would reduce the concentrations to reasonable levels. This would also dilute iron and manganese concentrations. While the State of Ohio EPA and the Ohio Department of Natural Resources currently have no set standards for acceptable maximum limits of suspended solid discharges, the limit of 100mg/liter does not contradict any Lake Erie water quality standards outside the mixing zone, and will result in negligible additions of pollutants to Lake Erie over the 12 to 15 weeks that dredging occurs. Reference Attachment 10 (Table).

3.6.9 In summary, testing, coordination, and precedence demonstrate that the CDF processes, including: absorption and settling, dike filtration and flow through processes, plugging and further settling, and periodic weir discharges (limiting suspended solids to 100 mg/l or less and considering a small mixing zone) will reasonably achieve effluent water quality standards for receiving lake waters. Monitoring (testing) will continue periodically in the future to determine future ongoing needs/adjustments and prior to use of the overflow weir.

3.6.10 Potential Effects on Human Use Characteristics - Construction of the CDF and discharge operations are expected to have no significant impact on municipal or private water supplies. No significant impacts on recreational and commercial fishing, water-related recreation, or aesthetics are expected to occur. No parks, national or historic monuments, national seashores, wilderness areas, research sites, or similar preserves would be adversely affected.

### 3.7 Determination of Cumulative Effects on the Aquatic Ecosystem

3.7.1 Deposition of stone and dredged fill material at the CDF site would add to continued encroachment on the aquatic environment in the coastal zone waters of Lake Erie and, would cumulatively add to the amount of CDF site acreage that has converted aquatic habitat to terrestrial habitat in the Lake.

### 3.8 Determination of Secondary Effects on the Aquatic Environment

3.8.1 Construction of the proposed CDF would enable continued dredging and confined disposal of polluted and not suitable for unrestricted open-lake discharge harbor/river sediments, thereby contributing toward improvement of aquatic substrate quality in the River.

3.8.2 Although predictability of any potential for a botulism outbreak in the future at the Site 10B (15-Year) CDF is difficult to make due to variables such as weather, lake level, new dredged sediment, and other unknown or little understood environmental factors, some precautionary strategies would be taken to help prevent or minimize the likelihood or intensity of botulism occurrence, once the CDF site becomes filled to the approximate lake level elevation, when exposed, damp mud flats may be present. Inspections of the CDF would be made periodically between 15 June and 15 September. Between

15 June and 1 August, such inspections would be made at least once every two weeks. During the most critical botulism potential season - approximately August 1 through October 31, inspections would be made at least once per week. If dead or sick waterfowl or shorebirds are found in the facility, the following actions would be immediately taken: (1) Contact the Chief, Operations and Maintenance Branch, U.S. Army Corps of Engineers, Buffalo District, who would contact the U.S. Fish and Wildlife Service's Ecological Services Office and the ODNR field representative; (2) Bury all carcasses immediately, or place carcasses in plastic bags for prompt removal from the site to an approved disposal area; sick birds collected would be given water and provided to the ODNR field representative for determination as to whether or not botulism is present in the affected bird. If botulism is found to be a problem, the Chief, Operations and Maintenance Branch would direct the appropriate response in accordance with the Buffalo District "Botulism Control Plan" prepared for this CDF site. Since the options of maintaining a stable water level or a water cover over the entire CDF is not likely to be feasible - because the CDF would have permeable stone dike walls and would be influenced by lake levels - the Buffalo District would adjust the timing of dredging and the deposition pattern at the CDF to help minimize ponding. If needed, dredged material exposed above the waterline would be planted with herbaceous plants to make such areas less attractive to wading birds and waterfowl. Covering the exposed dredged sediment with a grass mixture seeding may also assist to some degree in dewatering such material.

3.8.3 After the proposed CDF has been filled, operation and maintenance of the facility would be transferred to the City of Cleveland. The ultimate development of the site would be the prerogative of the City of Cleveland subject to approval by the Corps of Engineers.

FINDING OF COMPLIANCE  
CLEVELAND HARBOR, OHIO  
CONFINED DISPOSAL FACILITY - SITE 10B (15-Year) CDF

4.1 No significant adaptations of the USEPA Guidelines were made relative to this evaluation.

4.2 Various alternatives were reviewed during the preparation of the EIS for the proposed CDF. The construction of a new CDF at the proposed site along the shoreline of the Burke Lakefront Airport was identified as a viable solution, based on engineering, economic, environmental, and social considerations.

4.3 The planned discharges of dredged and fill material should not contribute to a violation of State water quality standards outside the localized mixing zones. The fill and discharge operations would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.


4.4 The proposed discharge site would not jeopardize the continued existence of any species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or result in the likelihood of the destruction or adverse modification of their critical habitat. The proposed discharges would not violate any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under the Marine Protection, Research, and Sanctuaries Act of 1972.

4.5 The proposed discharge operations would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. Significant adverse effects on the life stages of aquatic wildlife or other wildlife would not be anticipated. The discharge would have no significant adverse effects on aquatic aesthetic, and economic values.

4.6 Appropriate steps to minimize potential adverse impacts of the discharges on aquatic ecosystems include the following:

- Design and operation of the CDF in a manner that would cause the maximum retention of particulates and associated pollutants in the CDF;
- Taking precautionary measures via an avian botulism control plan in order to help prevent or minimize the potential of botulism impacts (if it occurs) once the CDF site becomes filled to about the lake level elevation, when exposed dredged sediments above the waterline may be present;
- Removal of as many fish as possible that may become entrapped in the CDF containment area, and their release into the lake water of the East Basin outside the CDF site;
- Completing the project within about three construction seasons in order to minimize construction time as much as feasibly possible;
- Contractor would begin work no earlier than June of the first construction season, to minimize potential disruption to spring fish spawning.

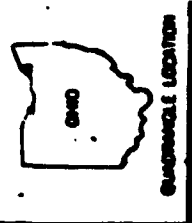
4.7 On the basis of the Guidelines, the proposed CDF is specified as complying with the requirements of these Guidelines, with the inclusion of appropriate and practical conditions to minimize pollution and adverse effects on the aquatic ecosystem.

  
WALTER C. NEITZKE  
Colonel, U.S. Army  
Commanding

DATE: 11 Mar 94

17

# L A K E E R R I E



LAKE APPROACH  
PROJECT DEPTH  
290 FEET

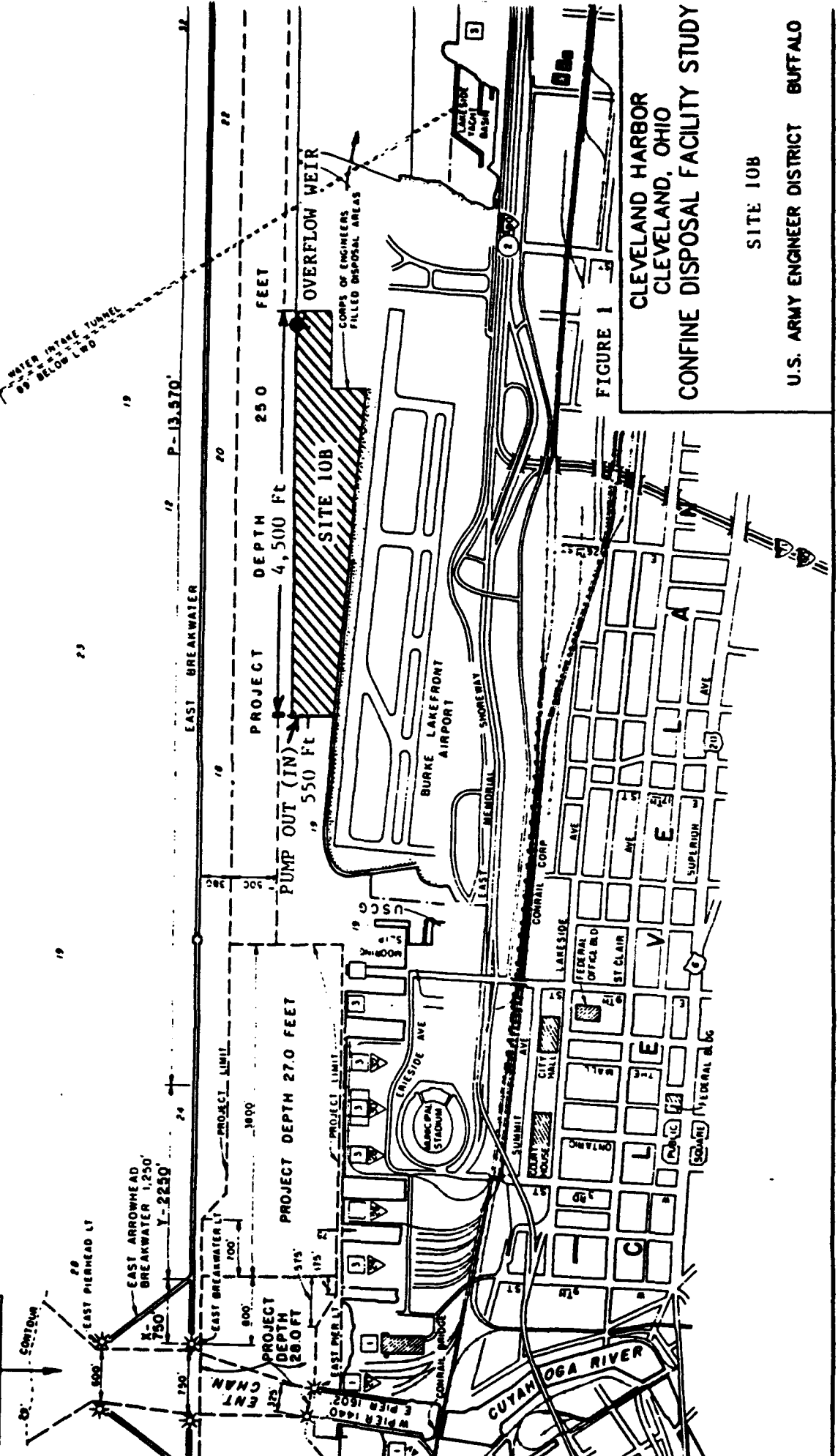
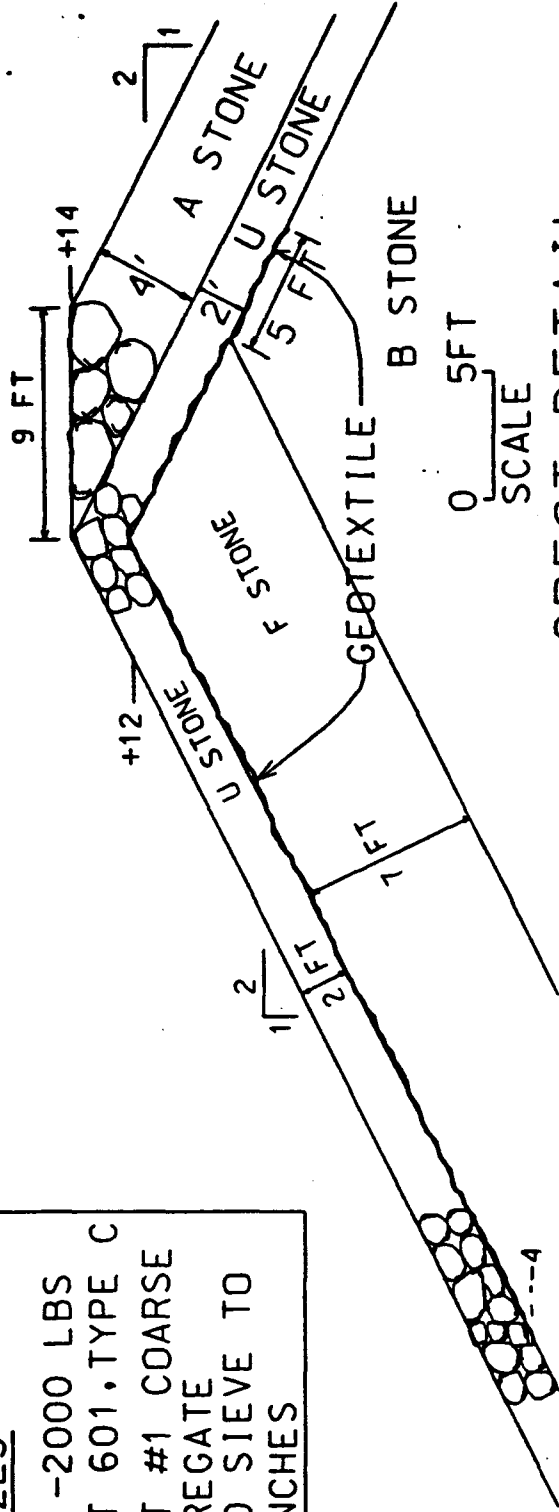


FIGURE 1  
CLEVELAND HARBOR  
CLEVELAND, OHIO  
CONFINE DISPOSAL FACILITY STUDY  
SITE 10B  
U.S. ARMY ENGINEER DISTRICT BUFFALO

STONE SIZES	
A STONE:	900 -2000 LBS
U STONE:	ODOT 601, TYPE C
B STONE:	ODOT #1 COARSE AGGREGATE
F STONE:	#200 SIEVE TO 4 INCHES



CREST DETAIL

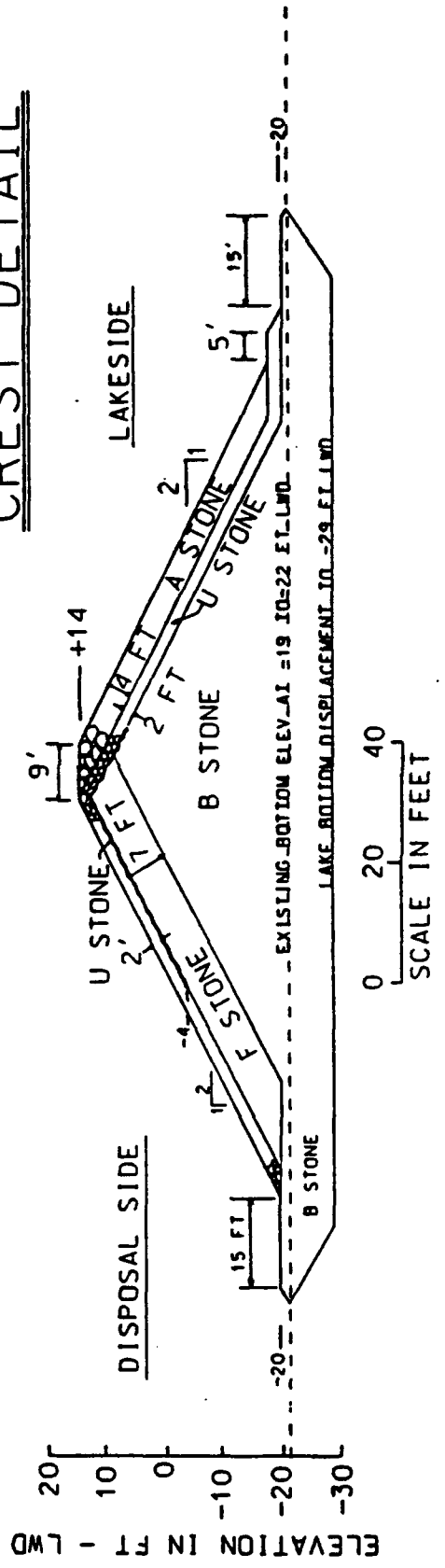
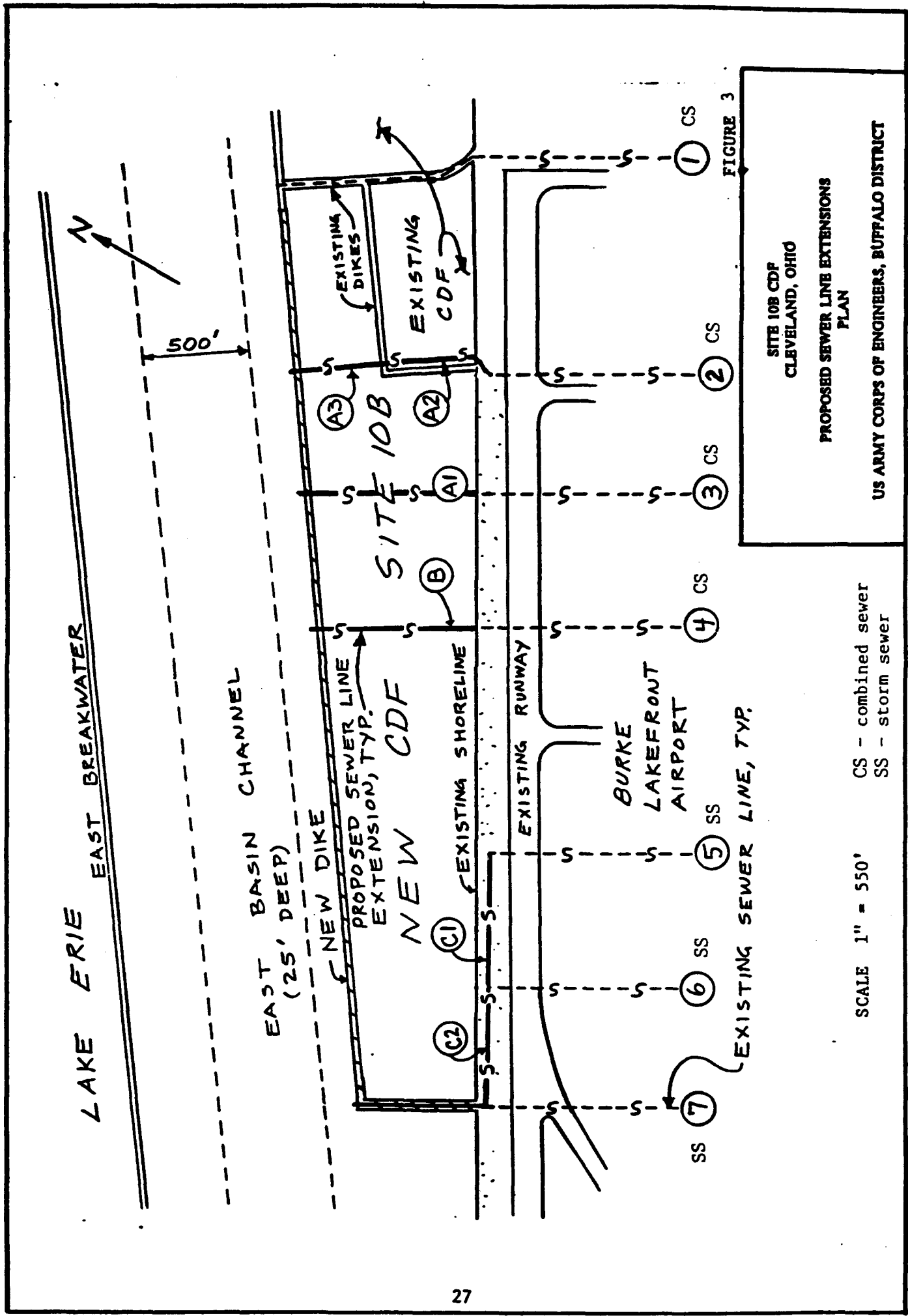


FIGURE 2 TYPICAL CROSS-SECTION



LAKE ERIE  
EAST BREAKWATER

500'

EAST BASIN CHANNEL  
(25' DEEP)

NEW DIKE

PROPOSED SEWER LINE  
EXTENSION, TYP.

NEW CDF

(C2)

(C1)

(B)

(A1)

(A2)

(A3)

EXISTING  
DIKES

EXISTING  
CDF

EXISTING RUNWAY

BURKE  
LAKEFRONT  
AIRPORT

SS

(6) SS

(5) SS

(4) CS

(3) CS

(2) CS

(1) CS

EXISTING SEWER LINE, TYP.

FIGURE 3

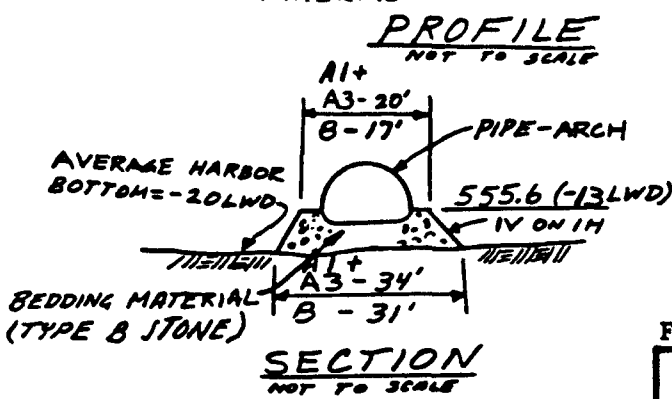
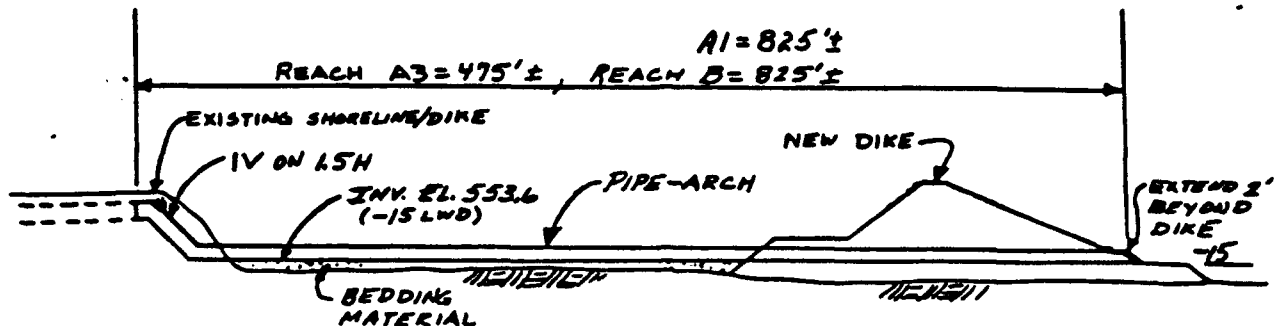
SITE 10B CDF  
CLEVELAND, OHIO

PROPOSED SEWER LINE EXTENSIONS  
PLAN

CS - combined sewer  
SS - storm sewer

SCALE 1" = 550'

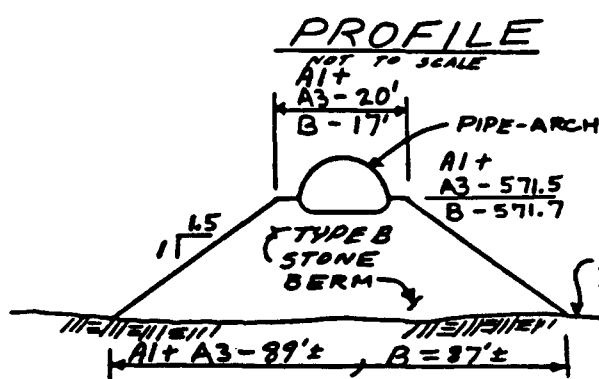
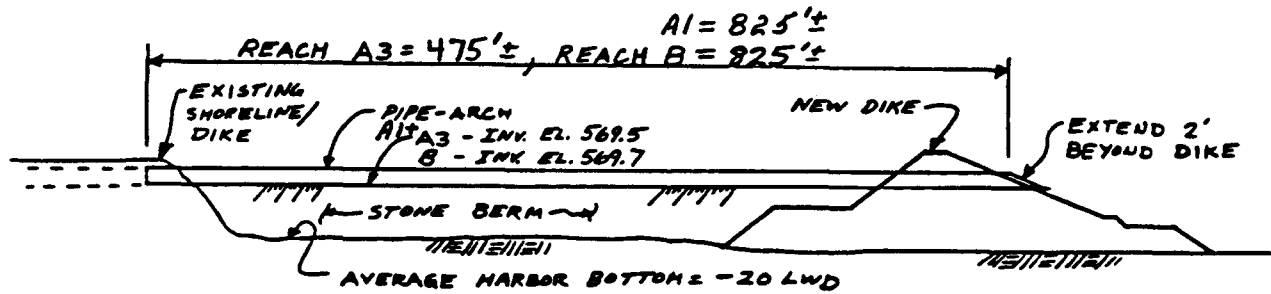
US ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT



APPROXIMATE  
BEDDING MATERIAL  
QUANTITIES -  
A3 = 2600 CY  
B = 4500 CY  
A1 = 5300 CY

FIGURE 4 (OPTION A)

SITE 108 CDF  
CLEVELAND, OHIO  
PROPOSED SEWER LINE EXTENSIONS  
PROFILE AND SECTION  
REACHES A3 & B  
ALTERNATIVES A3-2 & B-2  
US ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT



APPROXIMATE  
STONE BERM FILL QUANTITIES -  
A3 = 17,600 CY  
B = 32,100 CY  
A1 = 37,800 CY

FIGURE 5 (OPTION B)

SITE 108 CDF  
CLEVELAND, OHIO  
PROPOSED SEWER LINE EXTENSIONS  
PROFILE AND SECTION  
REACHES A3 & B  
ALTERNATIVES A3-1 & B-1  
US ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT



**Figure 6 - Potential Sources for Granular Fill and Stone**

Cleveland Builders Supply, Cleveland, Ohio (quarry at Marblehead, Ohio)  
Cleveland Quarries Co., Amherst, Ohio (quarries at South Amherst, Ohio)  
Erie Blacktop Inc., Sandusky, Ohio (quarry at Castalia, Ohio)  
Edward Kraemer and Sons Inc., Clay Center, Ohio  
France Stone Co., Toledo, Ohio (quarry at Flat Rock, Ohio)  
Kuhnle Bros. Inc., Newbury, Ohio  
Mac Ritchie Materials Inc., West Millgrove, Ohio  
Martin Marietta Chemical Co., Woodville, Ohio  
Michigan Limestone Operation, Rogers City Michigan  
Presque Isle Corp., Alpena, Michigan  
Roger's Group Inc., Sandusky, Ohio (quarry at Parkertown, Ohio)  
Seville Sand and Gravel, Inc., Seville, Ohio  
Standard Slag Co., Marblehead, Ohio  
Stoneco Inc., Lime City, Ohio  
Wagner Quarries Co., Sandusky, Ohio

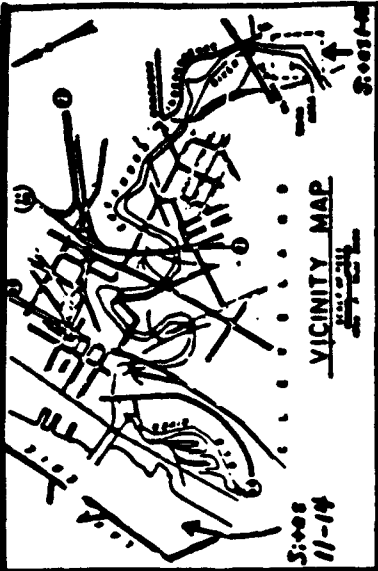
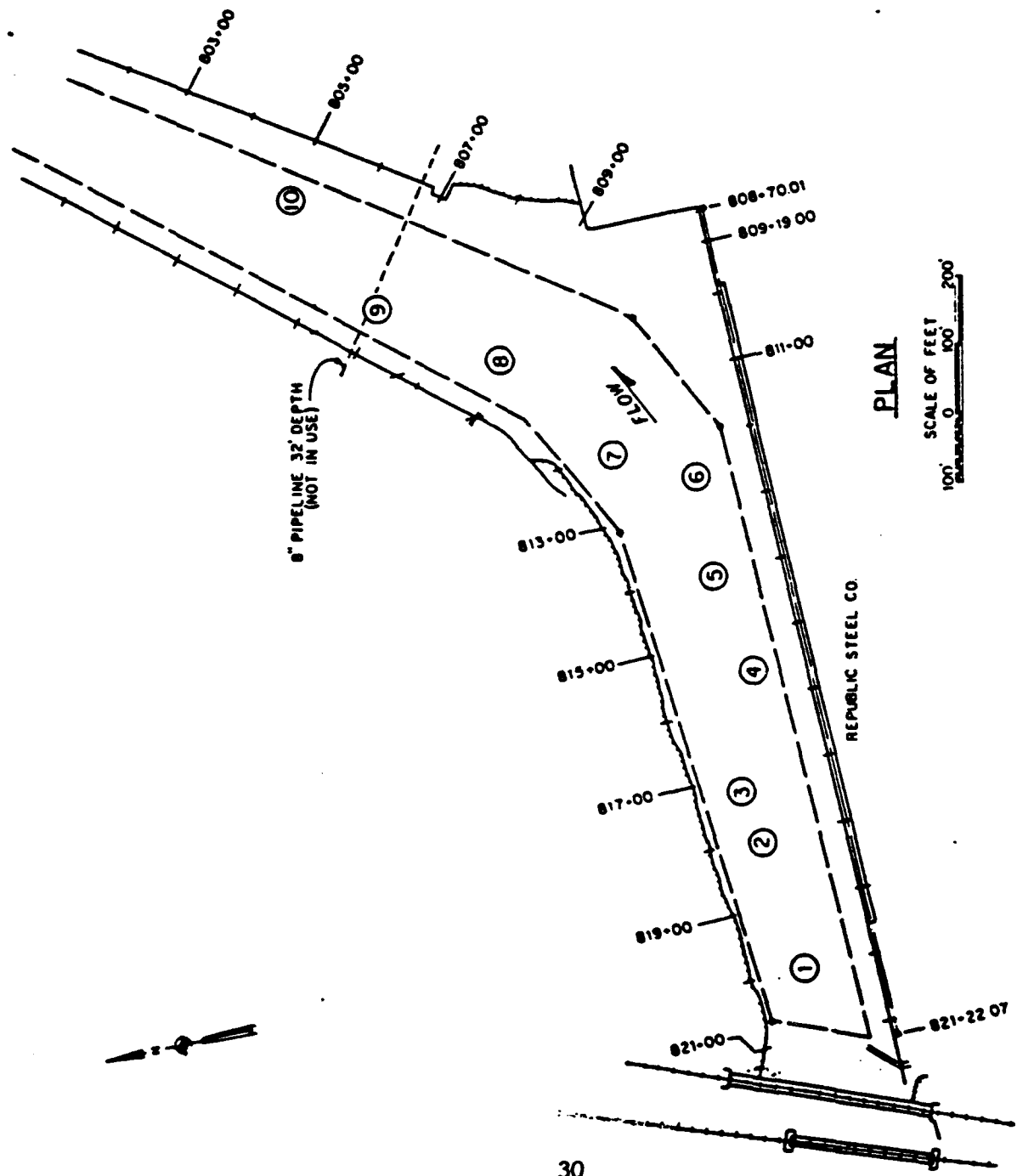


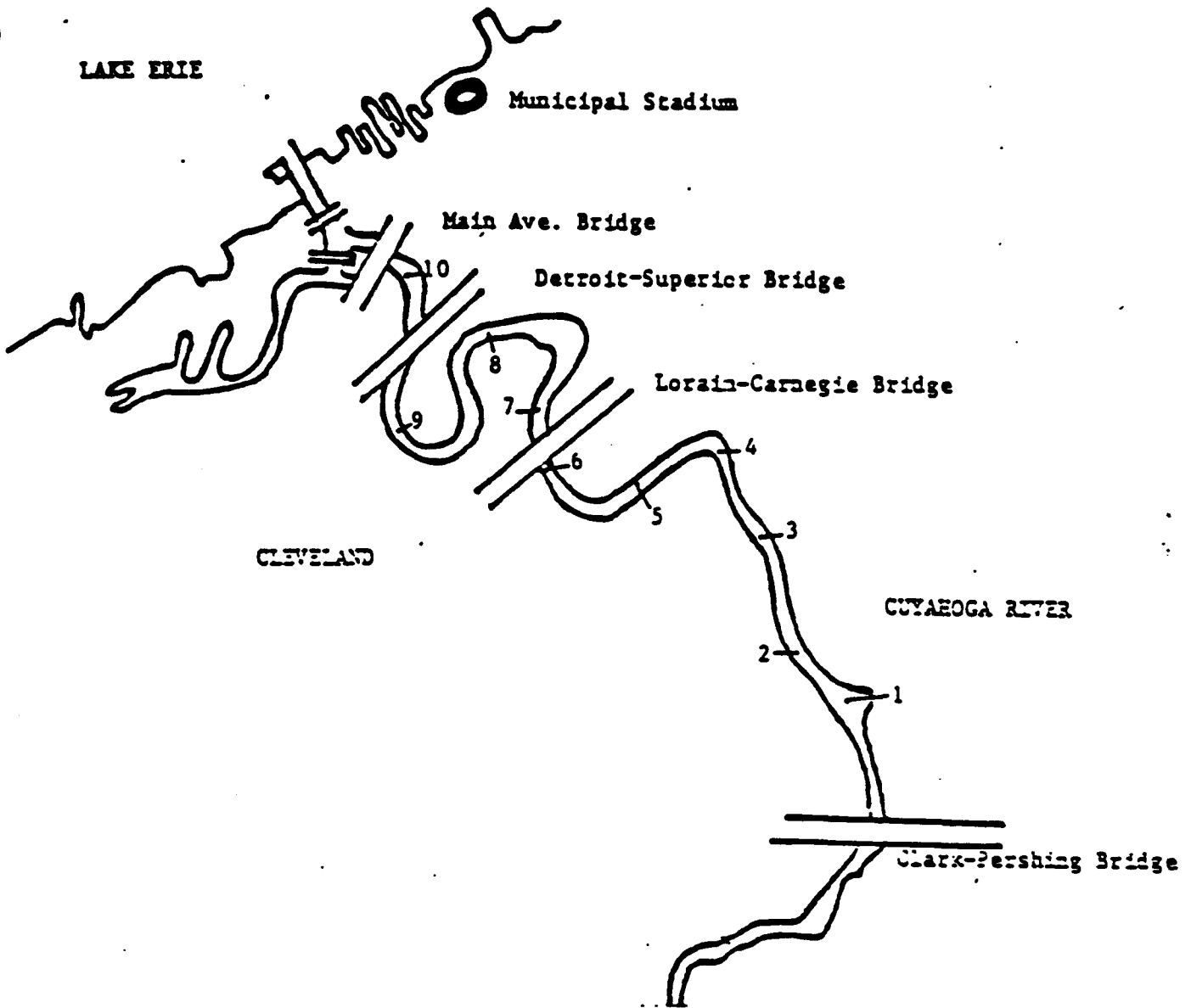
FIGURE 7

CLEVELAND HARBOR, OHIO  
 SAND SAMPLING FROM  
 THE UPPER CUYAHOGA  
 NAVIGATION CHANNEL  
 U.S. ARMY ENGINEER DISTRICT CLEVELAND  
 JUNE 1966



PLAN

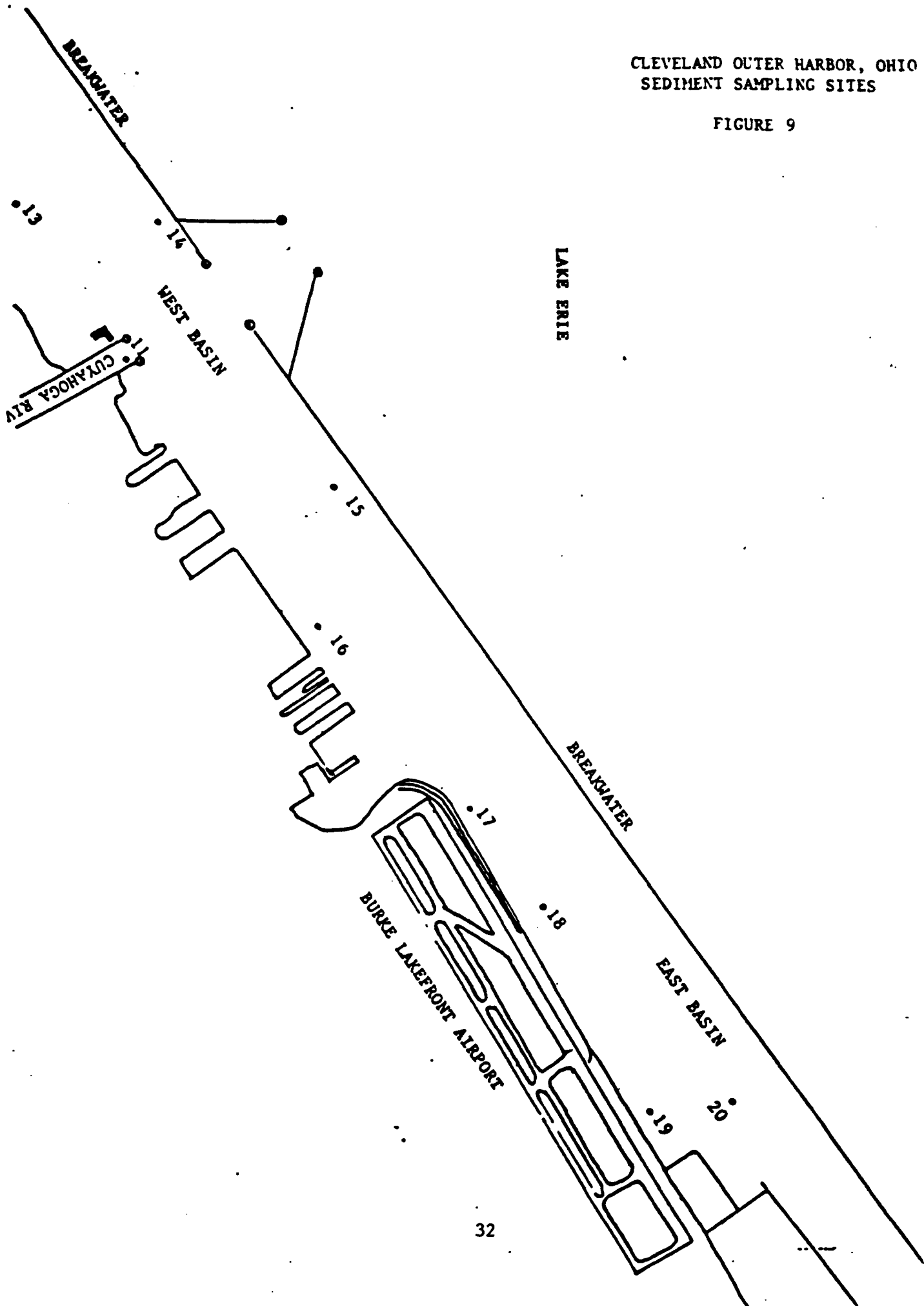




CUYAHOGA RIVER, OHIO  
 SEDIMENT SAMPLING SITES

CLEVELAND OUTER HARBOR, OHIO  
SEDIMENT SAMPLING SITES

FIGURE 9



ATTACHMENT 10

TABLE - Comparison of Ohio EPA Water Quality Standards for Lake Erie and Expected Cleveland CDF Effluent Concentrations

Parameter	<u>Ohio EPA Water Quality Standards</u>			
	Maximum <sup>1</sup> Outside Mixing Zone	Maximum <sup>1</sup> Inside Mixing Zone	Public Water Supply 30-Day Average	Expected <sup>3</sup> CDF Effluent
Arsenic	360 ug/l	720 ug/l	50 ug/l	~10 ug/l
Barium	NS	NS	1000 ug/l	~70 ug/l
Cadmium	5.6 ug/l <sup>2</sup>	11 ug/l <sup>2</sup>	10 ug/l	<4 ug/l
Chromium	1800 ug/l <sup>2</sup>	3600 ug/l <sup>2</sup>	50 mg/l	~12 ug/l
Copper	18 ug/l <sup>2</sup>	35 ug/l <sup>2</sup>	1000 ug/l	~20 ug/l
Iron	NS	NS	NS	~5000 ug/l
Lead	130 ug/l <sup>2</sup>	260 ug/l <sup>2</sup>	50 ug/l	<40 ug/l
Manganese	NS	NS	50000 ug/l	~1000 ug/l
Mercury	1.1 ug/l	2.2 ug/l	0.012 ug/l	<0.2 ug/l
Nickel	1600 ug/l <sup>2</sup>	3100 ug/l <sup>2</sup>	610 ug/l	~20 ug/l
Zinc	120 ug/l <sup>2</sup>	230 ug/l <sup>2</sup>	5000 ug/l	~70 ug/l
TKN	NS	NS	NS	~20 mg/l <sup>4</sup>
Ammonia	11.9 mg/l <sup>5</sup>	NS	NS	~12 mg/l <sup>4</sup>
Susp. Solids	__ <sup>6</sup>	__ <sup>6</sup>	__ <sup>6</sup>	~30 mg/l
Oil and Grease	10 mg/l	NS	NS	<1 mg/l <sup>8</sup>
Chlorobenzene	590 ug/l	1200 ug/l	480 ug/l	<1 ug/l <sup>8</sup>
Benzene	1100 ug/l	2100 ug/l	5 ug/l	<5 ug/l <sup>8</sup>
Carbon Tetrachloride	1800 ug/l	3500 ug/l	2.5 ug/l	<5 ug/l <sup>8</sup>
Chlorobenzene	590 ug/l	1200 ug/l	488 ug/l	<5 ug/l <sup>8</sup>
Chloroform	1800 ug/l	3600 ug/l		<5 ug/l <sup>8</sup>
1,2 - Dichloroethane	12000 ug/l	24000 ug/l	3.8 ug/l	<5 ug/l <sup>8</sup>
1,1 - Dichloroethene	1500 ug/l	3000 ug/l	0.57 ug/l	<5 ug/l <sup>8</sup>

1,3 - Dichloropropene	--	--	1.9 ug/l	<5 ug/l <sup>8</sup>
Ethyl Benzene	1400 ug/l	2800 ug/l	3100 ug/l	<5 ug/l <sup>8</sup>
1,1,2,2 - Tetra-chloroethane	1000 ug/l	2000 ug/l	1.7 ug/l	<5 ug/l <sup>8</sup>
Toluene	2400 ug/l	4800 ug/l	10000 ug/l	<5 ug/l <sup>8</sup>
1,1,1 - Trichloro-ethane	2000 ug/l	1900 ug/l	200 ug/l	<5 ug/l <sup>8</sup>
Trichloroethane	1700 ug/l	3400 ug/l	5 ug/l	<5 ug/l <sup>8</sup>
Chorodane	--	--	0.0046 ug/l	<0.1 ug/l <sup>8</sup>
Endosulfan	--	--	0.93 ug/l	<0.03 ug/l <sup>8</sup>
Endrin	--	--	0.2 ug/l	<0.05 ug/l <sup>8</sup>
PCB Arochlor				
1016	NS	NS	NS <sup>7</sup>	<0.10 ug/l <sup>8</sup>
1221	NS	NS	NS <sup>7</sup>	<0.10 ug/l <sup>8</sup>
1232	NS	NS	NS <sup>7</sup>	<0.10 ug/l <sup>8</sup>
1242	NS	NS	NS <sup>7</sup>	<0.10 ug/l <sup>8</sup>
1248	NS	NS	NS <sup>7</sup>	<0.10 ug/l <sup>8</sup>
1254	NS	NS	NS <sup>7</sup>	<0.10 ug/l <sup>8</sup>
1260	NS	NS	NS <sup>7</sup>	<0.10 ug/l <sup>8</sup>

NS - No Standard

- 1 - Average value given as 1/2 maximum for metals, may vary for other parameters.
- 2 - Value depends on water hardness. Lowest value taken on table in standards.
- 3 - Values from settling tests except as noted.
- 4 - Estimated from Elutriate Testing.
- 5 - Temperature and pH dependent. Value derived from a temperature of 24 degrees Centigrade and a pH of 7.5.
- 6 - No unnecessary turbidity. Allowable amount to be determined by Ohio EPA.
- 7 - Limit given as 0. This is not practical. Should be the achievable practical quantitation limit.
- 8 - Value below the practical quantitation limit.

Sources:

State of Ohio Water Quality Standards, Chapter 3745-1 of the Administrative Code; Ohio Environmental Protection Agency, Division of Water Quality Planning and Assessment; 1990, as amended.

Water and Sediment Quality Analysis, CDF Dike 14, Cleveland Ohio; Great Lakes Laboratory; 1981.

The Analyses of Sediments from Cleveland Harbor, Cleveland, Ohio, Technical Report #G0176-BA, Aqua Tech Environmental Consultants, September 1986

Sediment Analyses, Cleveland Harbor, Cleveland, Ohio, Technical Report #G0193-07, Aqua Tech Environmental Consultants, February 1990

Sediment Analyses, Cuyahoga River, Cleveland Harbor, Technical Report #G0218-09, Aqua Tech Environmental Consultants, January 1991



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43268-0149  
(614) 644-3020  
FAX (614) 644-2329

George V. Voinovich  
Governor

Donald R. Schregardus  
Director

February 1, 1994

Re: Cuyahoga County / Cleveland  
Grant of 401 Certification  
Project to construct a confined disposal facility  
Public Notice No. (B) BCOE-24600

U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, New York 14207-3199

Gentlemen:

Pursuant to Section 401 of the Federal Water Pollution Control Act, Public Law 95-217, the Director of Ohio Environmental Protection Agency hereby certifies that the above-referenced project will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act. This certification is specifically limited to a 401 certification with respect to water pollution and does not relieve the applicant of further certifications or permits as may be necessary under the law. This Certification is issued subject to the following conditions:

Fill used in this project shall consist of suitable material free from toxic contaminants in other than trace quantities.

Extreme care must be employed throughout the course of this project to avoid the creation of unnecessary turbidity which may degrade water quality or adversely affect aquatic life outside of the project area.

A Permit to Install may be required for C1 and C2 sewerline consolidation. Please contact Ron Bell at the Ohio EPA Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087 (telephone: 216-963-1200).

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code by any person who was a party to this proceeding. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after the notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Law Division of the Office of the Attorney General within three (3) days of the filing with the Board. An appeal may be filed with the Environmental Board of Review, 236 East Town Street, Room 30, Columbus, Ohio 43266-0557.

Sincerely,

Donald R. Schregardus  
Director

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

Mike Mackey Date 2/1/94

cc: Tod Smith, Buffalo U.S. Army Corps of Engineers  
Wayne Gorski, U.S. EPA, Region V  
Kent Kroonemeyer, U.S. Fish & Wildlife Service  
John Rupert, ODNR, Office of Real Estate & Land Management  
Ron Bell, Ohio EPA Northeast District Office  
Linda Merchant, Ohio EPA, DSW  
401 file

OHIO EPA.

FEB -1 94

INTERED DIRECTOR'S JOURNAL

401 file

CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL IMPACT STATEMENT

APPENDIX EIS-C

U.S. FISH AND WILDLIFE

SERVICE COORDINATION ACT REPORT

\* Note: See Environmental Appendix  
EIS-H - Comment/Response on the Draft LR  
and Draft EIS, also.

U.S. ARMY CORPS OF ENGINEERS

BUFFALO DISTRICT

1994





## United States Department of the Interior

Fish and Wildlife Service  
Reynoldsburg Field Office  
6950-H Americana Parkway  
Reynoldsburg, Ohio 43068-4115



In Reply Refer to:

COMM: 614/469-6923 FAX: 614/469-6919  
March 31, 1993

Colonel John W. Morris  
District Engineer  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

Attention: Len Bryniarski

Dear Colonel Morris:

This is our Final Fish and Wildlife Coordination Act Report on a proposed confined disposal facility (CDF) Site 10B at Cleveland, Cuyahoga County, Ohio. The report has been prepared under authority of the Fish and Wildlife Coordination Act (48 stat. 401, as amended 16 U.S.C. 661 et seq.), for the Buffalo District Corps of Engineers per agreement No. NCB-1A-92-OBEG, dated December 12, 1991.

This report has been reviewed by the Ohio Division of Wildlife. Their concurrence letter dated March 23, 1993, is attached.

The Cleveland Harbor area, protected by breakwaters, is five miles long and 1,600 to 2,400 feet wide for a total area of approximately 1,300 acres. Improved and dredged channels are maintained in the lower 5.8 miles of the Cuyahoga River, the Old River Channel, and the Outer Harbor. The Lake Approach Channel is maintained at a depth of 29 feet. The Outer Harbor is 28 feet deep up to the mouth of the Cuyahoga River. The Lower Cuyahoga River Channel is 27 feet deep up to the junction of Old River and 23 feet deep upstream to mile 5.8. In general, water quality has been improving over the last 15 years; but most of the sediments are still highly to moderately polluted and unsuitable for open lake disposal.

The proposed CDF (Site 10B) will be attached to a former disposal facility on the east and existing Burke Airport fill on the south (see Plate 1). A rubblemound dike will be constructed on the north side (4,500 feet) and west side (550 feet) to encompass an area of approximately 68 acres. The dike wall will be constructed with various sizes of rock ranging from that passing through a #200 sieve to 2.5 ton. A clay closure wall, approximately 5 feet high, will be constructed along the adjacent length of Burke Lakefront Airport. This wall will be removed when the CDF is full and the fill has

consolidated. The water depths in the area of the proposed CDF vary from about 18 feet to 25 feet.

The navigation channel which will be adjacent to the north dike wall is maintained at a depth of 28 feet. Sediments in the proposed disposal area are probably fine sands, clay, gravel and some organic material. This assumption is based on sediments we found at the proposed CDF site (Burke East) just to the east of existing filled disposal facility (Dike 12).

#### FISH AND WILDLIFE RESOURCES

Aquatic resources of Cleveland Harbor are many and varied. Species composition has changed over the years towards more pollution tolerant species due to the overall reduction in water quality. However in recent years, this trend may have stabilized or improved slightly from conditions in the mid 1970's.

Approximately 50 species of benthic microinvertebrates (primarily oligochaetes) have been reported in the Cleveland nearshore zone (Pliodzinskas, 1978). We have not conducted any benthic studies at the proposed site. However, we collected sediment samples at the proposed east basin CDF (Burke East) site in 1988 and the results of that study were provided to the Buffalo District Corps of Engineers in our Biological Report dated May 26, 1989. The location of the sampling sites is indicated on Plate 2 while the results of that benthic study are provided in Table 1. More details are contained in the Biological Report. We believe that many of these organisms would also be found at Site 10B. Also in 1986, the Buffalo District Corps of Engineers contracted a study of sediments and macroinvertebrates at Edgewater Park and Burke Lakefront Airport. The contractor was Aqua Tech Environmental Consultants Incorporated and their report "The Analysis of Sediments from Cleveland Harbor", technical Report #G0176-11, was provided August, 1986. Table III from that report and the location of the Burke Lakefront sampling sites is attached as Appendix 1.

Fish species in and adjacent to Cleveland Harbor consist of numerous forage and game species. The forage base is dominated by shad, spottail shiner and emerald shiner. Sport fish include white bass, yellow perch, walleye, rock bass and catfish. In recent years, the number of white perch in Cleveland, as well as Lake Erie, has greatly increased to a point where they may be one of the most abundant species.

In the early 1970's Dr. Andrew White conducted various surveys in the Cleveland area (White et.al.). Table 2 lists those species collected as fry or young-of-year in Cleveland Harbor during the years 1972-74. Table 3 provides a list of fish species collected in Cleveland Harbor and adjacent marinas from 1972 to 1974.

In 1986 we set two variable mesh gill nets adjacent to Burke Lakefront Airport at the proposed "Site 10" CDF, which is the same location as the currently proposed Site 10B. The results of that survey are presented in Table 4. Also in 1988 and 1989, we conducted gill net surveys at the Burke East proposed CDF. The results of those surveys are also presented in Table 4. We present this data because we believe that fish populations at Site 10B would be comparable to those found at Site 10 in 1986 and at Burke East in 1988 and

1989. White et.al. collected a total of 47 species in Cleveland Harbor and adjacent marinas. Our surveys at Burke East and Site 10 found only about half as many species. Part of the difference can be attributed to the fact that we only used gill nets while White used a variety of sampling methods.

Vegetation in the project area of Site 10B is limited. There are a few small trees along the edge of Burke Lakefront Airport, but most of the area contains grasses and herbs. There is also some algae attached to the riprap along Burke Lakefront Airport. Wildlife resources in the project area consists primarily of avian species. In April 1989 we observed the following birds: Bonaparte's, herring and ring-billed gulls, common merganser, scaup, mallards, bufflehead, woodduck and common tern. On the edge of the filled CDF, we observed Canada geese, common flicker, American robin, red-winged blackbird and great blue heron. In May 1989 we also observed black crowned night herons, barn swallows, and chimney swifts. We have made no surveys in the area for upland species, although we expect to find small mammals, and reptiles and probably pheasants and rabbits on the Burke Lakefront Airport property.

**ENDANGERED SPECIES COMMENTS:** The proposed project lies within the range of the Indiana bat and piping plover, Federally listed endangered species. Due to type of habitat in the project area, the project, as proposed, will have no impact on these species. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended. Should the project be modified or new information become available that indicates listed or proposed species may be affected, consultation should be initiated.

#### DISCUSSION AND RECOMMENDATIONS

We have been discussing, commenting, and preparing reports on various proposed CDF's in the Cleveland area since the currently used CDF (Dike 14) was constructed. The Corps has borrowed some time for the need for a new CDF by raising the dike walls of Dike 14. By raising these dike walls, Dike 14 will be capable of holding an additional 3-5 years of dredged material. This is the second time we have looked at a proposed CDF at Burke Lakefront Airport. The first proposal was known as Site 10. We prepared an April 23, 1987 Draft Fish and Wildlife Coordination Act Report on this and other proposed sites in the Cleveland Harbor area.

Over the years, we have requested that the Corps consider using upland disposal sites for dredged material. We have also recommended use of dredged material as fill for industrial, transportation or commercial projects in the Cleveland area. For the last few years, some of the material dredged from the uppermost portion of the navigation channel has been clean enough to use as beach nourishment or introduced into the littoral drift.


In our opinion, the most economical and environmentally sound solution to maintenance dredging and disposal of dredged material is to keep the sediments out of the Cuyahoga River navigation channel. To this end, we are willing to assist the corps or any other Federal, state or local agency in upland erosion control programs or projects.

In our opinion, the implementation of an upland and floodplain erosion control program are the type of long range planning which should be implemented. By implementation of such a program, the need for costly, habitat destroying inwater CDF's could be eliminated or greatly reduced in the future. By investing some time and money now, the government could eliminate or reduce the maintenance dredging cost in future years. Along with stricter pollution control standards, the sediments which would remain and need to be dredged could be classified as non-polluted or moderately polluted and open lake disposal would be appropriate. If action is not taken in the near future, the cost of controlling the erosion and confining the polluted sediments will only increase. Also, if the source of erosion is not controlled, at least partially, the immediate problem of removing sediments is perpetuated

The construction of the proposed CDF in Cleveland Harbor would require mitigation for the loss of 68 acres of deep water aquatic habitat. Replacement of the loss of deepwater habitat with in-kind mitigation would not be practical. Therefore, we recommend out-of-kind mitigation measures to enhance spawning habitat in Cleveland Harbor be initiated. One spawning habitat technique would consist of designing into the proposed CDF dike a spawning shelf. This shelf constructed on the waterward side of the dike should be 4+/- feet wide and be located about 4-8 feet below normal water level. Preferably, portions of the shelf would be constructed at 4-6 and 6-8 feet to allow various species spawning sites at various water levels. We envision the shelf being constructed of larger stone and then capped with a layer of gravel. The gravel may have to be replenished, if ice conditions or wave action moves the gravel. Another mitigation measure to consider would be to locate shallow water areas in or near Cleveland Harbor that could be developed into spawning areas with the addition of gravel substrate. In both cases, the mitigation spawning areas would need to be maintained for the life of the project.

We appreciate this opportunity to provide this report and look forward to additional discussion and planning meetings regarding the proposed mitigation measures discussed above.

Sincerely,

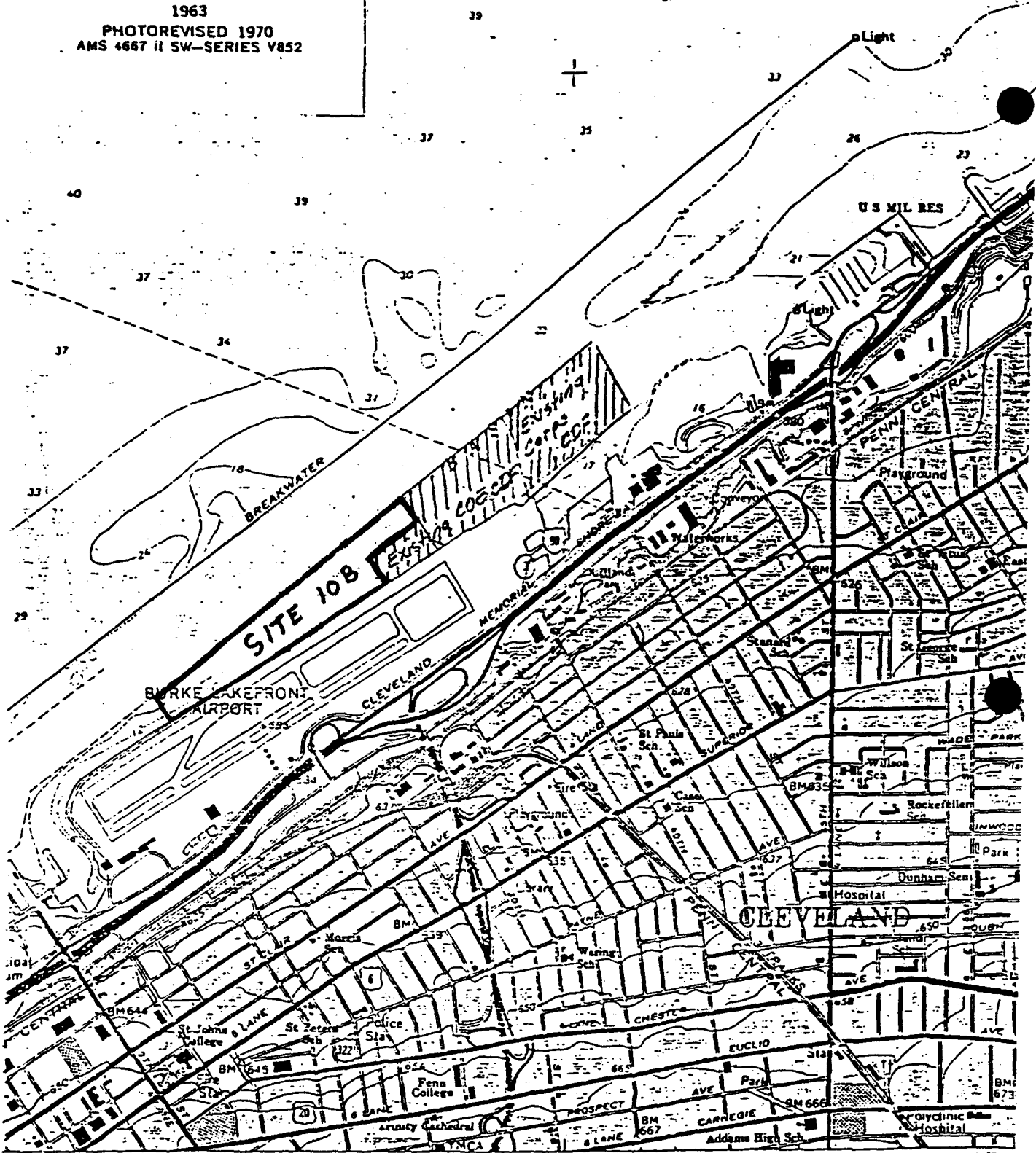
  
Kent E. Kroonemeyer  
Supervisor

cc: DOW, Wildlife Environmental Section, Columbus, OH  
ODNR, Office of Realty and Land Management, Columbus, OH  
Ohio EPA, Water Quality Monitoring, Attn: G.Hesse, Columbus, OH  
US EPA, Office of Environmental Review, Chicago, IL

- Aqua Tech Environmental Consultants, Inc. "The Analysis of Sediments from Cleveland Harbor," Cleveland, Ohio. Contract #DACW49-86-D001 Del. 0013. Technical Report #G0176-11, August, 1986.
- Pliodzinskas, A.J., 1979. "A General Overview of Lake Erie's Nearshore Benthic Macroinvertebrates." Center for Lake Erie Area Research: Ohio State University, Columbus, Ohio. Report 126. 83 pp.
- U.S. Army Corps of Engineers (Buffalo District). Cuyahoga River, Ohio Restoration Study, Executive Summary, August, 1986.
- U.S. Fish and Wildlife Service, July 23, 1986. "Planning Aid Letter on Selection of a Confined Disposal Facility at Cleveland, Cuyahoga County, Ohio," Columbus, Ohio.
- U. S. Fish and Wildlife Service (Ecological Service Field Office). "Biological Report on East Basin Confined Disposal Facility," Cleveland Harbor, Cuyahoga County, Ohio. May 26, 1989, Reynoldsburg, Ohio.
- White, A.M., M.B. Troutman, E.J. Foell, M.P. Kelty, and R. Geby. 1975. "Water Quality Baseline Assessment for the Cleveland Area." Lake Erie, Vol. 11-Fishery. U. S. Environmental Protection Agency: Region V. Chicago, Illinois. Report EPA-905/9-75-001. 181 pp.

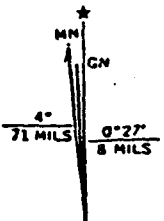
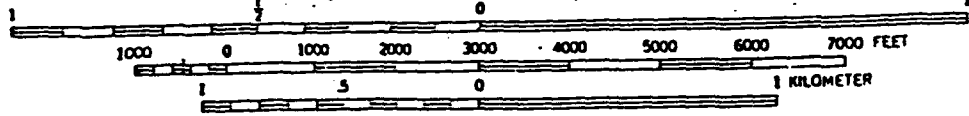
CLEVELAND NORTH, OHIO  
 SW 1/4 EUCLID 15' QUADRANGLE  
 N4130—W8137.5/7.5

1963  
 PHOTOREVISED 1970  
 AMS 4667 II SW—SERIES V852



(CLEVELAND SOUTH) R. 12 W. 0.8 MI. TO U.S. 422  
 4666 I NW

SCALE 1:24 000



CONTOUR INTERVAL 5 FEET  
 DATUM IS MEAN SEA LEVEL  
 DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS LOW WATER 570.5 FEET

6

PLATE 1

UTM GRID AND 1970 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

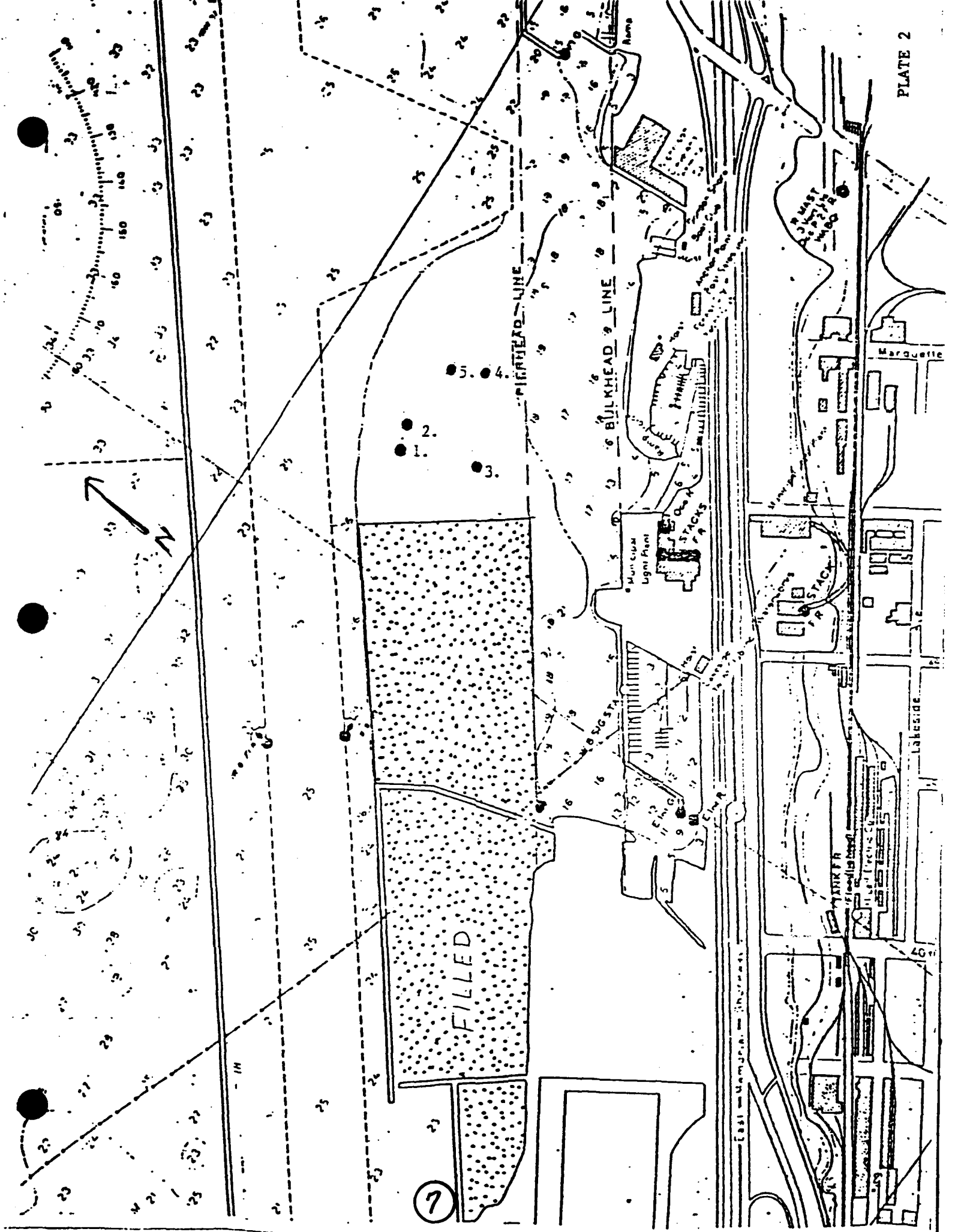


TABLE 1. AVERAGE NUMBER OF ORGANISMS PER SAMPLE, BY STATION

	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5
<b>INSECTA</b>					
<b>CHIRONOMIDAE</b>					
Procladius Sp.	2.33	3.67	5.67	10.67	15
Chironomus Sp.			0.67	1.33	4.66
<b>CRUSTACEA</b>					
<b>GAMMARIDAE</b>					
Gammarus Sp.					0.33
<b>MOLLUSCA</b>					
<b>SPHAERIIDAE</b>					
	7	9.3	11.33	22.33	22.33
<b>ANNELIDA</b>					
<b>MIRUBINAE</b>					
		0.33			0.67
<b>ANNELIDA</b>					
<b>NAIDIDAE</b>					
Arctonais loeundi	0.33				0.5
Dero sp.			1.67		
Dero nives	7.67	5.67		6.67	19
Nais simplex				1	
Nais sp.				3	
Pristina sp.				1	
Pristina osborni	6.33	17	6.33	11.67	2
Pristina siva	3.33	1.33			6.3
Spacaria josinea	1.67	9	3	0.67	
<b>TUBIFICIDAE</b>					
Aulodrilus limnobius	1	0.33	1.33	2.67	3
Aulodrilus pigueti	10	10	1.33	10.33	12.3
Aulodrilus plurisetis	0.33		6.33	0.67	0.3
Limnodrilus cervix	2.67	9.67	3.67	13	10.3
Limnodrilus claparadianus		0.33			
Limnodrilus hoffmeisteri	3.33	1.33	2	10.67	5.3
Limnodrilus naumensis		1.33	4.33	0.33	1
Limnodrilus udakenianus	1				
Paloscolex sp.	1				
Potamothrix vejdoskyi	2.33	3.67	5	12	5
Quistadrilus multisetosus	1.33				
imat. w/ hair setae			1		
imat. w/o hair setae	91.3	122	74.67	64.67	57
TOTAL ORGANISMS	143.39	192.96	129.56	172.58	171.99
TOTAL OLIGOCHAETES	133.95	180.66	110.99	138.35	129
OLIGOCHAETES / SQ. METER	5748	7779	4779	5957	5535



Table 2. Species of Fishes Collected as Fry or Young-of-the-Year in Cleveland Harbor, 1972-1974\*

<u>Species</u>	<u>Abundance**</u>
Alewife	Abundant
Gizzard shad	Abundant
Rainbow smelt	Abundant
Quillback	Rare
White sucker	Uncommon
Common carp	Common
Goldfish	Common
Golden shiner	Abundant
Longnose dace	Rare
Emerald shiner	Abundant
Spottail shiner	Uncommon
Fathead minnow	Rare
Bluntnose minnow	Common
Trout-perch	Rare
Brook silverside	Rare
White bass	Uncommon
Rock bass	Uncommon
Largemouth bass	Rare
Green sunfish	Uncommon
Bluegill	Common
Pumpkinseed	Abundant
Yellow perch	Common
Logperch	Rare
White crappie	Uncommon

\* from White et al. 1975

\*\* Abundance of each species depicted as a relative term

Table 3. Relative Abundance of Fishes Collected in the Cleveland Harbor and Adjacent Marinas (Revised July 1974)\*

<u>Species</u>	<u>No. Collected</u>	<u>% of Total</u>
Longnose gar	1	0.01 %
Alewife	92	0.85
Gizzard shad	2,525	23.43
Chinnok salmon	9	0.08
Coho salmon	42	0.39
Rainbow trout	2	0.02
Rainbow smelt	323	3.00
Northern pike	15	0.14
Common carp	64	0.59
Goldfish	97	0.90
Golden shiner	393	3.65
Longnose dace	1	0.01
Creek chub	1	0.01
Blacknose dace	1	0.01
Emerald shiner	4,092	37.97
Striped shiner	1	0.01
Spottail shiner	903	8.38
Spotfin shiner	6	0.06
Sand shiner	33	0.31
Mimic shiner	6	0.06
Fathead minnow	1	0.01
Bluntnose minnow	74	0.69
Stoneroller	2	0.02
Quillback	1	0.01
Black redhorse	1	0.01

Table 3. (continued) Relative Abundance of Fishes Collected in the Cleveland Harbor and Adjacent Marinas (Revised July 1974)\*

<u>Species</u>	<u>No. Collected</u>	<u>% of Total</u>
Golden redbhorse	2	0.02
Shorthead redbhorse	1	0.01
White sucker	89	0.83
Channel catfish	2	0.02
Brown bullhead	23	0.21
Black bullhead	14	0.13
Stonecat	13	0.12
Trout-perch	153	1.42
Brook silverside	3	0.03
White bass	223	2.07
White crappie	80	0.74
Black crappie	11	0.10
Rock bass	5	0.05
Largemouth bass	3	0.03
Warmouth	1	0.01
Green sunfish	3	0.03
Bluegill	4	0.04
Pumpkinseed	34	0.32
Walleye	2	0.02
Yellow perch	1,254	11.64
Logperch	1	0.01
Freshwater drum	170	1.58
TOTALS	10,777	100.05 %

47 species

\* from White, et al., 1975

Table 4. Species and number of fish collected by gill net surveys for the Burke Lakefront (May and Sept 1986) and Burke East (Oct and Nov 1988, Apr and May 1989) proposed Confined Disposal Facilities at Cleveland Harbor, Cuyahoga County, Ohio.\*

	1986		1988		1989	
	May	Sept	Oct	Nov	Apr	May
Gizzard Shad			58	140	1	11
Black Crappie		1	1	7		
White Crappie				1		
White Perch	88	1	10	3	17	57
Yellow Perch	25		2	6	1	5
White Sucker			3	2	9	15
White Bass			1			1
Largemouth Bass			1	1		1
Smallmouth Bass						1
Rock Bass	2	5	4	4	3	5
Brown Bullhead	1	1	2		1	1
Yellow Bullhead		3				
Channel Catfish		1				
Walleye		8	4			
Northern Pike				1		
Orangespotted sunfish				1		
Tadpole Madtom				1		
Trout-perch					3	
Emerald Shiner					1	
Northern Logperch Darter	2					
Shorthead Redhorse	4	3				
Freshwater Drum	15	1				7
Carp						2
Total	137	24	86	167	36	106

23 Species

\* U. S. Fish and Wildlife 1986, 1988, 1989.

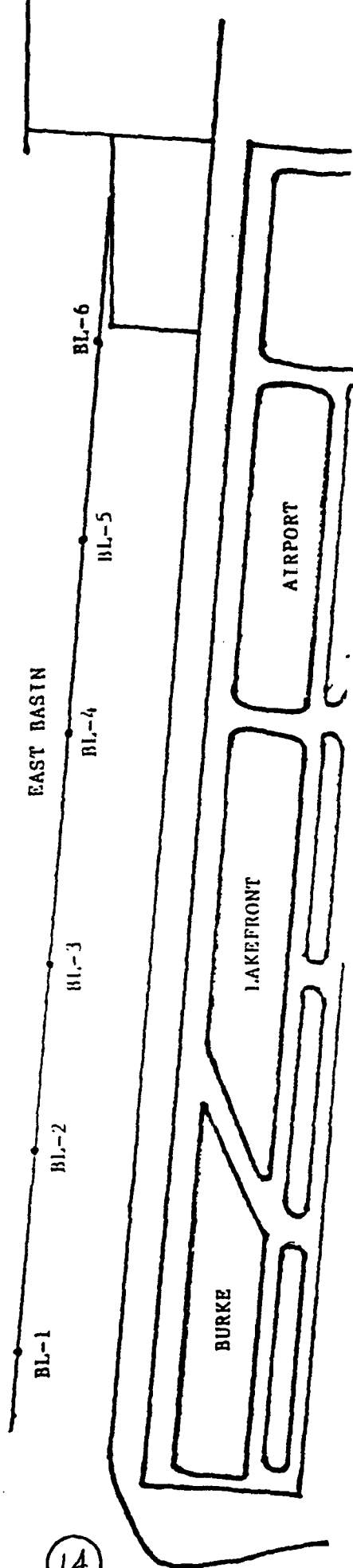
APPENDIX 1

Benthos and Sediment data from "The Analysis of Sediments from Cleveland Harbor" Technical Report #G0176-11, August 1986 prepared for the Buffalo District, Army Corps of Engineers by Aquatech Environmental Consultants, Robert Hoke, Principal Biologist.

LAKE ERIE

BREAK WATER

EAST BASIN



14

Table III. Benthic Macroinvertebrate Abundance and Species Composition from the Cleveland Harbor Area, Cleveland, Ohio - July, 1986

Taxon	Site No. E-3	Site No. E-4	Site No. E-5	Site No. BL-1	Site No. BL-2	Site No. BL-3	Site No. BL-4	Site No. BL-5	Site No. BL-5
<b>Arthropoda</b>									
<b>Insecta</b>									
<b>Chironomidae</b>									
<b>Chironominae</b>									
<b>Chironomini</b>									
Chironomus tentans			1(14)						
Chironomus sp.	4(57)	13(186)	4(57)						
Tanytarsini							2(86)	2(86)	
Constempellina sp.	1(14)		1(14)						
<b>Tanypodinae</b>									
Procladius sp.	10(143)	8(114)	12(172)		1(43)	1(43)	1(43)	2(86)	2(86)
<b>Crustacea</b>									
<b>Malacostraca</b>									
<b>Peracarida</b>									
<b>Ampipoda</b>									
<b>Gammarida</b>									
Gammarus fasciatus		1(14)	2(28)						
<b>Mollusca</b>									
<b>Pelecypoda</b>									
<b>Heterodonta</b>									
Sphaeriidae	28(401)	6(86)	15(215)	52(2225)	86(2638)	38(1634)	18(774)	64(2752)	24(1032)
<b>Annelida</b>									
<b>Clitellata</b>									
<b>Oligochaeta</b>									
<b>Naididae</b>									
Nero sp.			1(14)		1(43)		2(86)		
Nais sp.							4(172)		
Paranais litorius			1(14)						
Pristina longisetia		1(14)							
longisetia									
Pristina osborni			1(14)						
Specaria josinae			2(28)						
Stylaria lacustris								1(43)	
Chaetogaster sp.			1(14)						
<b>Tubificidae</b>									
Aulodrilus limnobius		1(14)	5(71)	5(215)	10(430)	2(86)		1(43)	
Aulodrilus pigueti									1(43)
Aulodrilus pleurisetia		6(86)	12(172)		3(129)	1(43)	3(129)		10(430)
Limnodrilus cervix	1(14)		2(28)	116(4939)	61(2522)	25(1075)	59(2537)	25(1118)	39(1677)
cervix				1(43)					
claparedianus intergrade									
Limnodrilus hoffmeisteri	7(100)	6(86)	7(100)	40(1722)	42(1806)	21(903)	35(1505)	49(2107)	39(1677)
Limnodrilus saumeensis	2(28)	1(14)							
Peloscoclex multisetosus				2(55)	3(129)	1(43)	5(215)	1(43)	1(43)
longidentus									
Peloscoclex s. multisetosus				1(43)				1(43)	
Potamothrix moldeviensis	7(100)	8(114)	7(100)						
Potamothrix vejdoskyi	14(200)	13(186)	16(229)	2(56)		1(43)			
imm. w/ hair setae	2(28)						4(172)	1(43)	4(172)
imm. w/o hair setae	24(344)	38(545)	45(645)	110(4730)	58(2494)	45(1935)	64(2752)	59(2537)	37(1591)
<b>Total No. of Organisms</b>	<b>100(1429)</b>	<b>102(1459)</b>	<b>135(1943)</b>	<b>329(14147)</b>	<b>266(11438)</b>	<b>135(5805)</b>	<b>197(8471)</b>	<b>207(8901)</b>	<b>157(5751)</b>
<b>Total No. of Taxa</b>	<b>9</b>	<b>11</b>	<b>17</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>7</b>
<b>Shannon Diversity (H')</b>	<b>0.769</b>	<b>0.909</b>	<b>1.039</b>	<b>0.525</b>	<b>0.594</b>	<b>0.583</b>	<b>0.64</b>	<b>0.559</b>	<b>0.617</b>

Numbers enclosed in parenthesis indicate number of organisms per meter squared as extrapolated from the actual number of organisms collected, number of samples and area of samples.



RECEIVED

MAR 29 1993

U.S. Fish & Wildlife Service  
Reynoldsburg, Ohio

ROUTING STAMP	KROONEMEYER	FILE
	MULTERER	RETURN TO
	KUREY	
	HEGGE	
	LAMMERS	
	FAZIO	
	BAKER	
	ALL STAFF	

George V. Voinovich • Governor  
Frances S. Buchholzer • Director

Division of Wildlife  
1840 Belcher Drive  
Columbus, OH 43224  
614/265-6300  
FAX 614/262-1143

March 23, 1993

Mr. Kent E. Kroonemeyer  
U.S. Fish & Wildlife Service  
Reynoldsburg Field Office  
6950-H Americana Parkway  
Reynoldsburg, Ohio 43068-4115

Dear Mr. Kroonemeyer:

The final Fish and Wildlife Coordination Act report for the proposed confined disposal facility (CDF) Site 10B at Cleveland Harbor has been reviewed and the Division of Wildlife (DOW) concurs with the report.

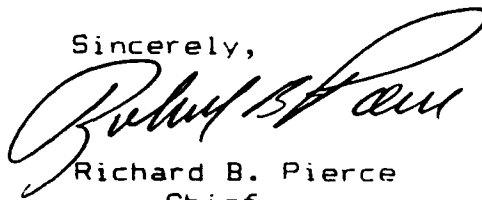
The DOW would also like to reemphasize two concerns raised in the final report. The first concern regards the upland disposal of dredged material versus construction of confined disposal sites. The utilization of the various upland disposal methods as referenced in the report would be highly favored over the loss and/or alteration of shore line and deep water habitat. Second, is the need to shift more attention to the source of the dredging disposal problem, i.e. upland erosion. The maintenance dredging of navigational channels and the disposal of the resulting dredge material is merely treating the symptoms of the real problem.

There is one additional concern the DOW has with the proposed CDF. Page 57, Item 4.17 of the Draft EIS states that efforts would be made, if possible, to live trap fish that are caught within the CDF once the dike is completed. The DOW believes, from past experience, that the cost to live trap far exceeds the value of the fish involved and would only remove a very small proportion of the fish actually caught within the enclosure. The loss of said fish would have an extremely marginal effect on the fishery of Lake Erie. Based on these factors the DOW recommends that a meeting be held to estimate the number of fish to be caught in the enclosure and derive a compensatory figure to be paid in lieu of the proposed trapping. The DOW believes that this would be a much more practical, economical, and efficient solution to the problem.



The DOW appreciates the opportunity to review and comment on the final report.

Sincerely,

A handwritten signature in cursive script, appearing to read "Richard B. Pierce".

Richard B. Pierce  
Chief

CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL IMPACT STATEMENT

APPENDIX EIS-D  
BOTULISM CONTROL  
MANAGEMENT PLAN

U.S. ARMY CORPS OF ENGINEERS

BUFFALO DISTRICT

1994

BOTULISM CONTROL MANAGEMENT PLAN  
SITE 10B (15-YEAR) CDF  
CUYAHOGA COUNTY, CLEVELAND, OHIO

1. GENERAL

1.2 Avian Botulism - also referred to as Western duck sickness - has its source in toxin-producing bacterium Clostridium botulinum. These bacteria are widely distributed as spores in organic soils. It is believed that the spores themselves can do little harm. However, in a favorable environment - namely, under anaerobic (absence of oxygen) conditions, with the right temperature (ranging from about 60°F to 97°F), a source of animal protein (i.e., invertebrate/vertebrate carcasses) and pH in the range of about 5.7 to 8.0 - the spores can germinate into active vegetative cells and produce a dangerous virulent toxin. The toxin affects the nervous system, causing progressive muscle paralysis. Although there are a number of types (strains) of botulism toxin, "Type C" is the one frequently associated with die-offs of waterfowl and shorebirds. "Favorable environmental conditions occur in the tissues of decaying animal and insect carcasses. The decomposition process uses up all available oxygen in the carcass, creating anaerobic conditions. Bacterial spores ingested during the life of the animal germinate after death. As the bacteria multiply and die, toxin is released. Outbreaks of avian botulism occur when the toxin is taken in by the birds. The die-off may begin as birds feed directly on invertebrate carcasses that contain the toxin, or as a result of feeding on live maggots of flesh flies and blowflies. Flies lay their eggs on dead vertebrates, and the resulting maggots store botulinal toxin in their bodies as they consume the carcass" (Reference: Friend, M., Locke, Louis N., and Kennelly, James J. - USDI undated publication entitled Avian Botulism). If the aforementioned conditions become present in a CDF environment, the potential for a botulism outbreak in the facility is established.

1.2 In developing the following Botulism Control Management Plan for the proposed confined disposal facility (CDF), consideration was given to the data collection phase, early action phase, long-range operation phase, and coordination.

2. DATA COLLECTION PHASE

2.1 Site Inspections:

15 June - 30 September -- Inspect the CDF site once every two weeks between 15 June and 1 August; then inspect the site once every week throughout August up to 15 September, especially when dredged fill material becomes exposed above the waterline. Continue inspections (monitoring) annually during this period until the entire site becomes well drained.

2.2 Monitoring:

A. Since the Buffalo District's Cleveland Area Office is located close to the Site 10B (15-Year) CDF site, prior to commencement of dredging work - which would be about mid-June - the supervisor of that office or his designated representative will be the point of contact (POC) for

implementation of the Botulism Control Management Plan. The POC will monitor the CDF site in order to insure that inspections are accomplished according to the time schedule provided in paragraph 2.1 above. The name and telephone number of the designated POC will be provided to the Chief, CENCB-CO-NS and Chief, CENCB-PE-PR, located at the Buffalo District Office.

B. The following action will be required once dredged material in the CDF accumulates to a point where the material becomes exposed above the existing displaced water level to form "mudflat-like" conditions: Annually, during the period June 15 through September 15 - When the Site 10B (15-Year) CDF site is being inspected on a weekly basis - the POC will record information for items #1 through #9 as shown on the attached sheet entitled "Botulism Control Field Inspection Form." Record data on items #8 and #9 where access to shallow, pooled water is possible in the general vicinity of exposed dredged material. Utilize the pH Kit and water temperature recording thermometer to obtain data on these parameters. Note: The pH Kit and thermometer will be provided to the Cleveland Area Office after the CDF dike construction is completed or before discharge of dredged material into the facility is initiated.

Select water sampling locations in shallow pooled areas that are representative of the CDF.

Complete a separate "Botulism Control Field Inspection Form" for each inspection of the CDF site. At the completion of each field inspection, mail the completed form to the Attention of Mr. Len Bryniarski, Environmental Analysis Section, U.S. Army Corps of Engineers, Buffalo District Office, 1776 Niagara Street, Buffalo, New York 14207 - Phone: 716-879-4173 or FTS 292-4173.

C. Once the action in item B (above) has been initiated, from then on, during annual dredged material discharge into the CDF, photographs (slides or color prints) of the Site 10B (15-Year) CDF site prior to, as well as during and following completion of dredged material discharge operations will be taken by the POC and mailed to the Buffalo District (CENCB-PE-PR). Annually, a representative photograph or two prior to, during and following completion of dredged material discharge would be adequate.

### 3. EARLY ACTION PHASE

3.1 An early sign of botulism sickness in birds is their inability to fly. Waterfowl, for example, often propel themselves across mudflats or water with their wings when their leg muscles become paralyzed and when they are unable to fly. In the event that the Corps POC observes either dead birds or what appears to be sick birds, the POC will immediately notify the following individuals:

- (1) Ms. Sook C. Reid  
Supervisor, Cleveland Area Office  
U.S. Army Corps of Engineers  
Foot of East Ninth Street  
Cleveland, Ohio 44114-1003  
Phone: (216) 522-4957

(2) Mr. Kent Kroonemeyer  
Supervisor, Reynoldsburg Field Office  
U.S. Department of the Interior  
Fish and Wildlife Service  
6950-H Americana Parkway  
Reynoldsburg, Ohio 43069  
Phone: (614) 469-6923

(3) Mr. Leonard Bryniarski  
Ecologist, Environmental Analysis Section  
U.S. Army Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207  
Phone: (716) 879-4173

3.2 Specimens of birds suspected of possibly being poisoned by botulism will be collected at the CDF site by the USFWS representative and Corps POC. Guidance will be provided by the USFWS representative as to whether or not the bird specimens should be sent to the U.S. Fish and Wildlife Service's "National Wildlife Health Center" for more detailed diagnostic determination, in order to confirm presence of absence of botulism. The Center's address is 6006 Schroeder Road, Madison, Wisconsin 53711. Instructions on how to properly ship specimens to the Center will either be provided by the USFWS representative or by telephoning the Center at (608) 264-5411.

3.3 If botulism is determined to be the source of the problem, the Buffalo District will expeditiously initiate a contract to: (a) implement the use of noise-making devices (i.e., carbide cannons) to scare aquatic birds out of the facility as much as possible; (b) promptly remove and properly dispose of dead bird carcasses found in the CDF - in order to remove important sources of bacterial toxin production and carcasses upon which maggots develop. **IT IS VERY IMPORTANT TO THOROUGHLY REMOVE AND PROPERLY DISPOSE OF DEAD VERTEBRATES FOUND ON SITE**, in order to help reduce potential for perpetuation of the botulism problem in the CDF. Thousands of toxic maggots can be produced from a single dead duck carcass. As such, maggots are ingested by healthy waterfowl or shorebirds, these birds in turn become intoxicated to continue the botulism cycle.

3.4 Additionally, a determination will be made by the Corps Contracting Officer (CO) or the CO's representative as to whether or not immediate operational changes should be made in response to the botulism outbreak. This could include one or more of the following operational changes:

(a) If a botulism outbreak occurs either early or late during the dredging season, stop dredged material discharge into the CDF; let the area dry up; resume discharge of sediment into the CDF during cooler fall season weather;

(b) Implement prompt seeding of unvegetated dredged material exposed above the waterline with a tall growing upland grass mixture (possibly by hydroseeding), in order to make such areas less attractive as habitat for aquatic birds (i.e., waterfowl, shorebirds).

#### 4. LONG-RANGE OPERATIONAL PHASE

4.1 On the basis that water-related management practices are the key to the successful control of botulism outbreaks within the CDF, the long-range operational phase includes the following:

a. Timing of Dredged Material Discharge.

If feasible, discharge dredged material into the CDF as late in the year as practically possible. Cool weather (i.e., <67°F) precludes bacterial growth and inhibits production of the toxin. Sediments could be kept drier during warmer summer months by restricting the placement of dredged material in the facility to later, cooler periods. Placement of dredged material during cooler weather periods also has the added advantage of holding back the protein substrate (i.e., the organic matter in the dredged material which C. botulinum requires for growth) until after it is too late in the year for the bacteria to grow.

b. Planned Distribution of Dredged Material within the CDF.

Place dredged material directly into low areas during discharge operations. This action will allow mud flat areas to dry out and keep a water layer over the most recently placed dredged material.

c. Drying of Sediments within the CDF.

Evaporative drying removes water from the upper few inches of dredged material by capillary resupply of the soil, resulting in crust formation. This aids precipitation runoff via desiccation cracks. Evaporative drying would be accelerated by good surface layer drainage, rapid removal of precipitation and the prevention of ponding by surface water. Surface drainage would be accomplished by the construction of drainage trenches in the CDF as follows:

(1) Excavate a perimeter trench (using either a dragline or backhoe) approximately 10 to 15 feet interior of the dike walls. The perimeter trench should be about 6 to 8 feet wide and 2 to 3 feet deep. Operations should normally begin at the weir, where a sump pit should be dug to extend into the disposal area - using the *maximum reach* of the dragline or backhoe. Excavated material should be side-cast to form a low berm inside the CDF along the interior side of the perimeter trench;

(2) Interior drainage via trenches should be initiated when: (a) the perimeter trenching decreases the fluid consistency of the dredged material below the thin drying skin in order to allow trench construction; and (b) when the support capacity of the soil allows conventional low ground pressure construction equipment (utilizing mats, if required) safe entrance onto the discharge area to construct drainage trenches. NOTE: Surface trenching and "drying-out" of sediment within the CDF not only decreases the chance of botulism outbreaks, but also aids in preventing mosquito problems and firms soils within the facility. Additionally, drying of sediments also contributes toward increasing capacity of the CDF.

## 5. COORDINATION

5.1 The POC, Cleveland Office, will maintain coordination with CENCB-PE-PR via brief monitoring reports sent to the Buffalo District Office and by telephone, as needed.

5.2 The Environmental Analysis Section of the U.S. Army Corps of Engineers, Buffalo district will maintain coordination with the USFWS (Reynoldsburg Office, OH) and ODNR (Division of Wildlife, Fountain Square, Columbus, Oh - Telephone # 614-265-6300) regarding status of conditions at the CDF if a problem is suspected.

5.3 The Environmental Analysis Section (located at the Buffalo District Office) will maintain coordination with research biologists at the U.S. Army Engineer Waterways Experiment Station (WES) located at Vicksburg, Mississippi, in order to obtain further recommendations and to arrange site visits if needed, that would provide the basis for immediate advice, as well as possibly longer range study of CDF management with regard to minimizing potential for botulism outbreaks. the specific contact at WES is Dr. John Simmers, Research Biologist - Telephone # 601-634-2803.

BOTULISM CONTROL INSPECTION FORM

SITE 10B (15-YEAR) CDF

CUYAHOGA COUNTY, CLEVELAND, OHIO

- Item 1. SHEET NO.
- Item 2. INSPECTION DATE: DAY \_\_\_\_\_ MONTH \_\_\_\_\_ YEAR \_\_\_\_\_
- Item 3. TIME OF INSPECTION \_\_\_\_\_ (a.m. or p.m.)
- Item 4. NAME OF RECORDER (INSPECTOR): \_\_\_\_\_
- Item 5. GENERAL WEATHER CONDITIONS:
- 
- Item 6. AIR TEMPERATURE \_\_\_\_\_ °F OR \_\_\_\_\_ °C
- Item 7. AQUATIC BIRDS (ducks/geese/shorebirds) UTILIZING THE CDF ON THE DAY OF SITE INSPECTION:
- \* a) Estimated No. of Waterfowl \_\_\_\_\_  
(Waterfowl have webs between their three front toes. Examples: Geese, Swans, Ducks)
  
  - \* b) Estimated No. of Shorebirds \_\_\_\_\_  
(Shorebirds typically have long-legs and pointed wings; most shorebirds feed along the shoreline. Examples: Sandpipers, killdear, willet, snipe, phalarope, plovers, and turnstones)
- NOTE: \* If no aquatic birds were observed in the CDF site at the time of inspection, indicate "NONE."
- Item 8. WATER TEMPERATURE:
- Item 9. pH



CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL IMPACT STATEMENT  
APPENDIX EIS-E  
COASTAL ZONE MANAGEMENT  
CONSISTENCY DETERMINATION STATEMENT

Coastal Zone Management Act, as amended, 16 USC 1451 et seq. A consistency determination under the Coastal Zone Management Act was not prepared since the State of Ohio does not have an approved coastal zone management program. This EIS however, is being coordinated with the State of Ohio and associated agencies.

U.S. ARMY CORPS OF ENGINEERS  
BUFFALO DISTRICT

1994

CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL IMPACT STATEMENT  
APPENDIX EIS-F  
CULTURAL RESOURCES CORRESPONDENCE

U.S. ARMY CORPS OF ENGINEERS  
BUFFALO DISTRICT

1994

NCBPD-EK

18 JUL 1986

**SUBJECT: Cleveland, Ohio, Construction of a New Confined Disposal Facility  
for Polluted Dredged Material - Cultural Resources**

W. Ray Luce  
State Historic Preservation Officer  
Ohio Historic Preservation Office  
Ohio Historical Society  
1985 Velma Avenue  
Columbus, Oh 43211

18 JUL 86 10 00  
OFC. MGMT: OAS

Dear Mr. Luce:

The purpose of this letter is to inform you of the Buffalo District's current study of alternative confined disposal facilities (CDF's) for polluted dredged materials from Cleveland Harbor, Ohio. The existing CDF at Cleveland Harbor is rapidly being filled and has an expected lifespan of six to ten years based upon present yearly amounts of polluted sediments dredged. My current study is investigating numerous alternative dredged material disposal schemes but it appears that the most feasible alternative will be to construct a new facility either adjacent to Edgewater Park or Burke Airport (Enclosure 1 and 2). It is expected that the new facility will be about 100-150 acres in size and have a lifespan of about 15 years.

I would appreciate your evaluation of the proposed project impacts on known cultural resources in the project area as well as your comments and recommendations. Your prompt response would be appreciated as I am in the process of preparing an Environmental Impact Statement for the proposed project.

My Point of contact pertaining to this matter is Mr. William MacDonald of my Planning Division, who can be contacted by calling commercial number (716) 876-5454, extension 2175 or by writing to:

District Commander  
U.S. Army Engineer District, Buffalo  
1776 Niagara Street  
buffalo, NY 14207  
ATTN: Mr. William MacDonald

NCBPD-ER

SUBJECT: Cleveland, Ohio, Construction of a New Confined Disposal Facility  
for Polluted Dredged Material - Cultural Resources

The Buffalo District — Leadership in Engineering.

Sincerely,

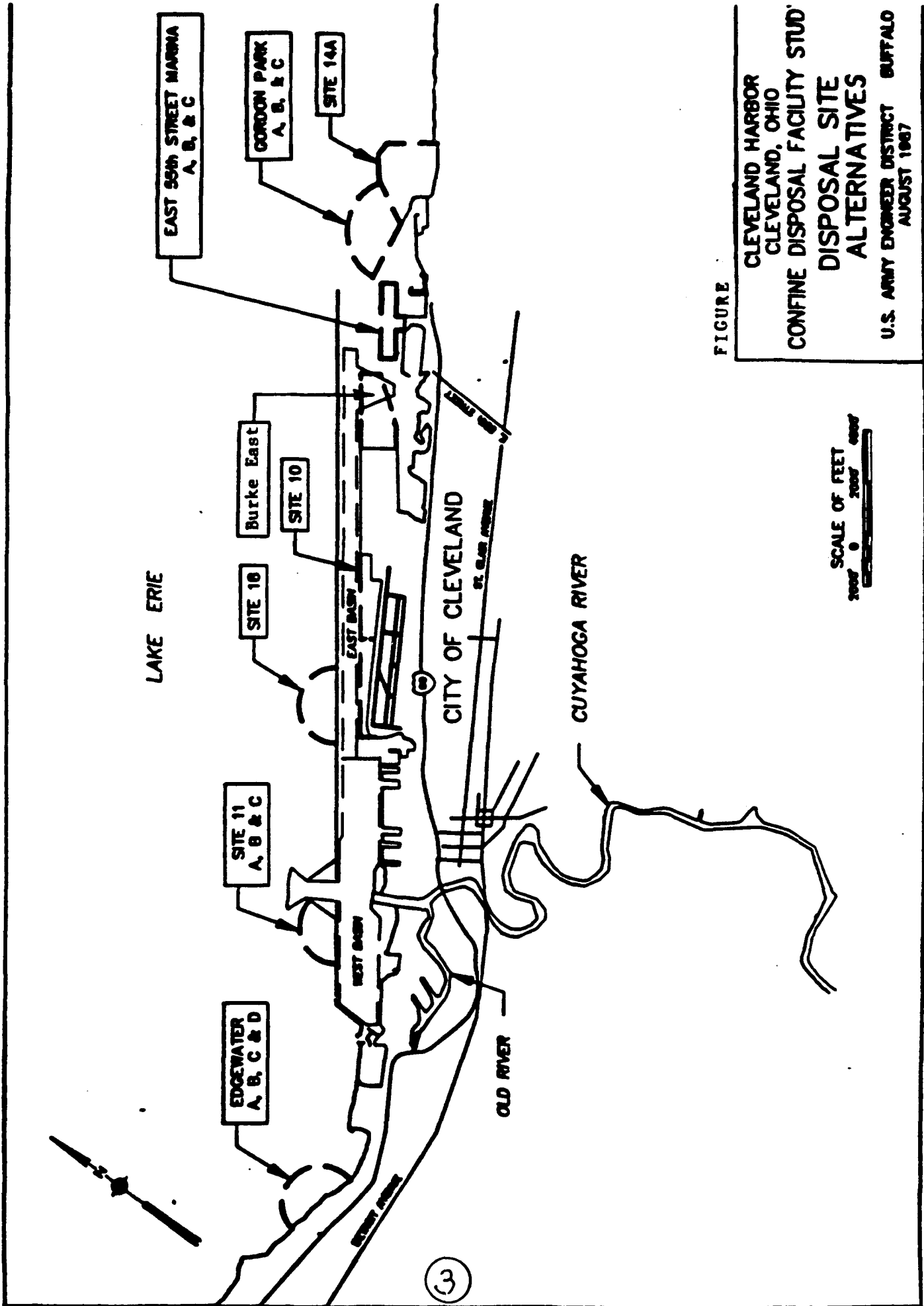
Bruce W. Haigh, LTC

BRUCE W. HAIGH  
LTC, Corps of Engineers  
Acting District Commander

1 Enclosure  
as stated

Copy Furnished:

✓ NCBPD-ER  
NCBPD (Reading File)  
NCBED-HQ



FIGURE

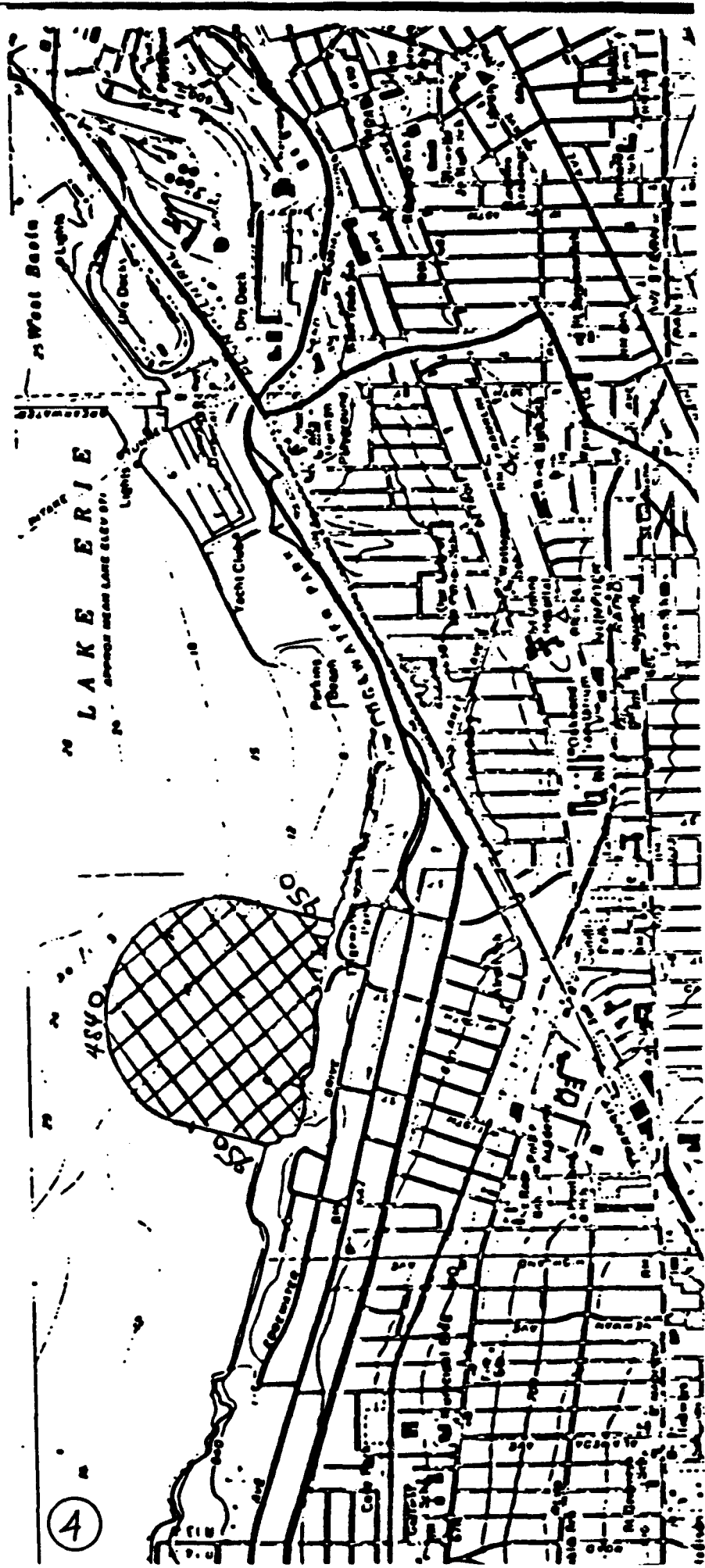
CLEVELAND HARBOR  
 CLEVELAND, OHIO  
 CONFINE DISPOSAL FACILITY STUDY  
 DISPOSAL SITE  
 ALTERNATIVES

U.S. ARMY ENGINEER DISTRICT BUFFALO  
 AUGUST 1967

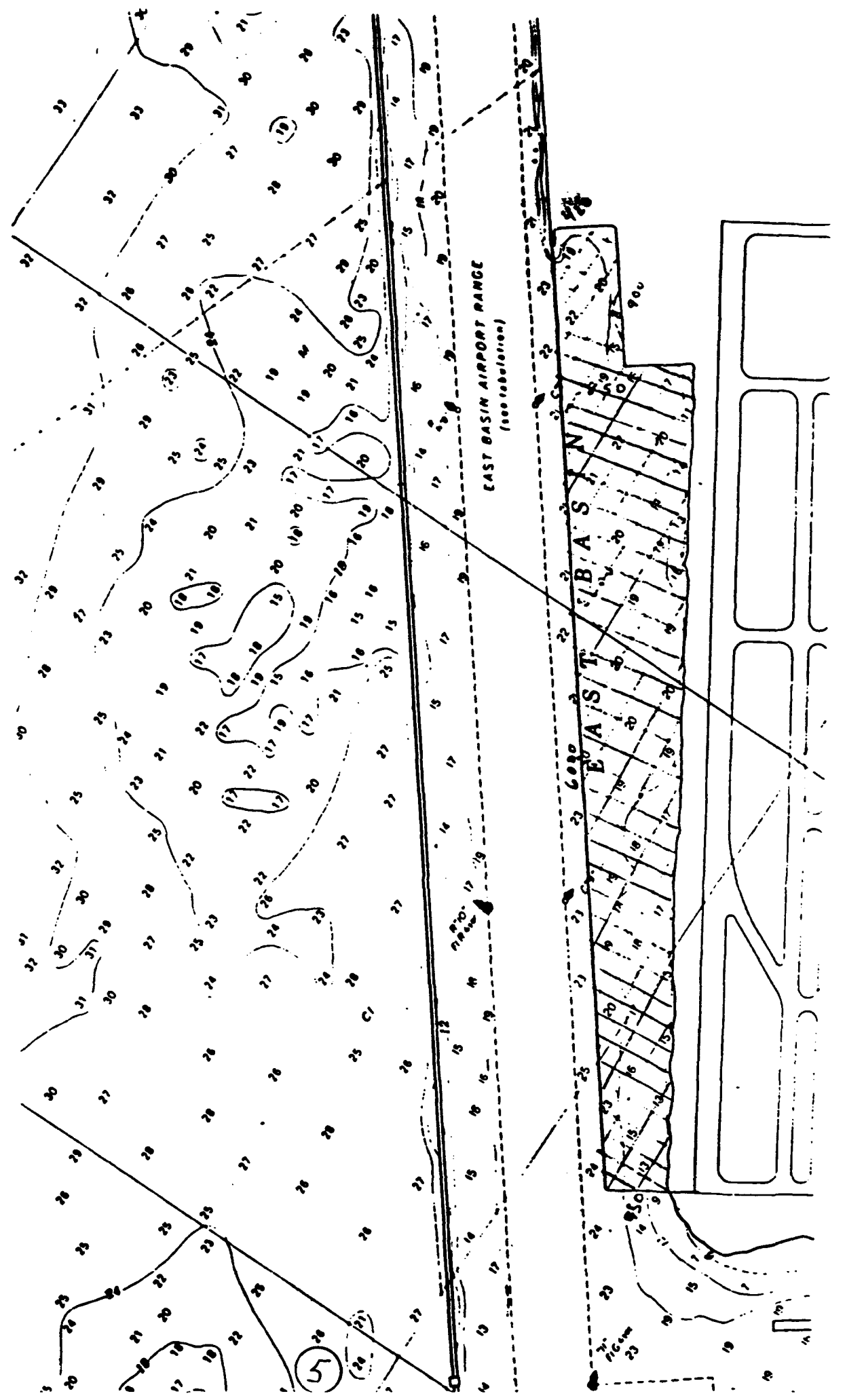
SCALE OF FEET  
 0 2000 4000

3

Edge water "C" 20 years.  
Dike height = +21' LWD



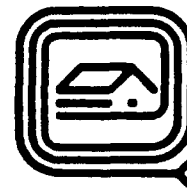
Sgt. D. H. ... + 111011D X



Ohio Historic Preservation Office

1985 Veima Avenue  
Columbus, Ohio 43211  
614 466 1500

RECEIVED  
13 AUG 26 10 20  
STATE HISTORICAL SOCIETY



OHIO  
HISTORICAL  
SOCIETY  
SINCE 1885

August 8, 1986

District Commander  
U.S. Army Engineer District, Buffalo  
1776 Niagara Street  
Buffalo, NY 14207  
Attn: Mr. William MacDonald

Dear Mr. MacDonald:

Re: Cleveland, Ohio - Construction of a New Confined Disposal  
Facility for Polluted Dredged Material

This letter is in response to your correspondence dated July 18, 1986 concerning the project noted above. My staff has reviewed the information you provided. Based on their recommendation, it is my opinion that the proposed undertaking will have no effect on any property that is either listed in or eligible for the National Register of Historic Places. No further coordination with our office is required for this project unless the scope of the undertaking changes.

If you have any questions about this matter, please contact Richard Boisvert or Catherine Stroup at 466-1500, extension 470 or 480. Thank you for your cooperation.

Sincerely,

  
W. Ray Luce  
State Historic Preservation Officer

WRL/CAS:cs



OCT 23 1989

Environmental Analysis Branch

SUBJECT: Proposed New Confined Disposal Site, Cleveland Harbor, Ohio - Cultural Resources

Mr. W. Ray Luce  
State Historic Preservation Officer  
Ohio Historic Preservation Office  
Ohio Historical Society  
1985 Velma Avenue  
Columbus, OH 43211

Dear Mr. Luce:

Enclosed for your review and comment are a fact sheet, location map and cross section of a proposed new confined disposal facility at Cleveland Harbor, Ohio.

Please review this proposed project and send me any comments or recommendations you may have with regard to the need for any future cultural resources investigations within 30 days of your receipt of this letter.

My point of contact pertaining to this matter is Mr. Timothy Daly of my Environmental Analysis Branch, who can be contacted by calling commercial number 716-879-4171, or by writing to him at the above address.

The Buffalo District - Leadership in Engineering.

Sincerely,

**SIGNED**  
John J. [unclear]

Chief Planning Division

Enclosure  
as stated

CF:  
CENCB-PD (file)  
CENCB-PD-ER  
CENCB-ED-HQ

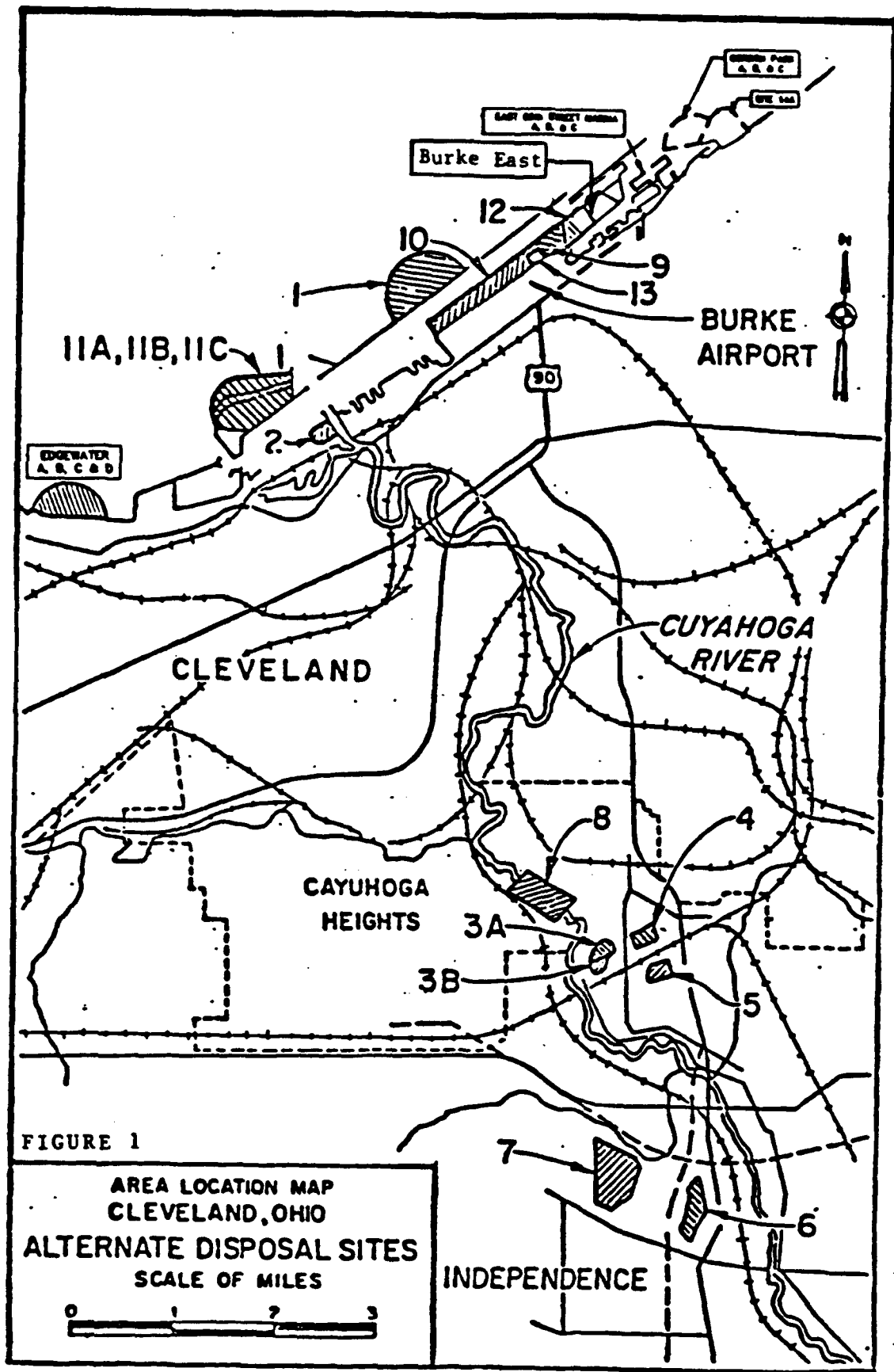


FIGURE 1

AREA LOCATION MAP  
 CLEVELAND, OHIO  
 ALTERNATE DISPOSAL SITES  
 SCALE OF MILES



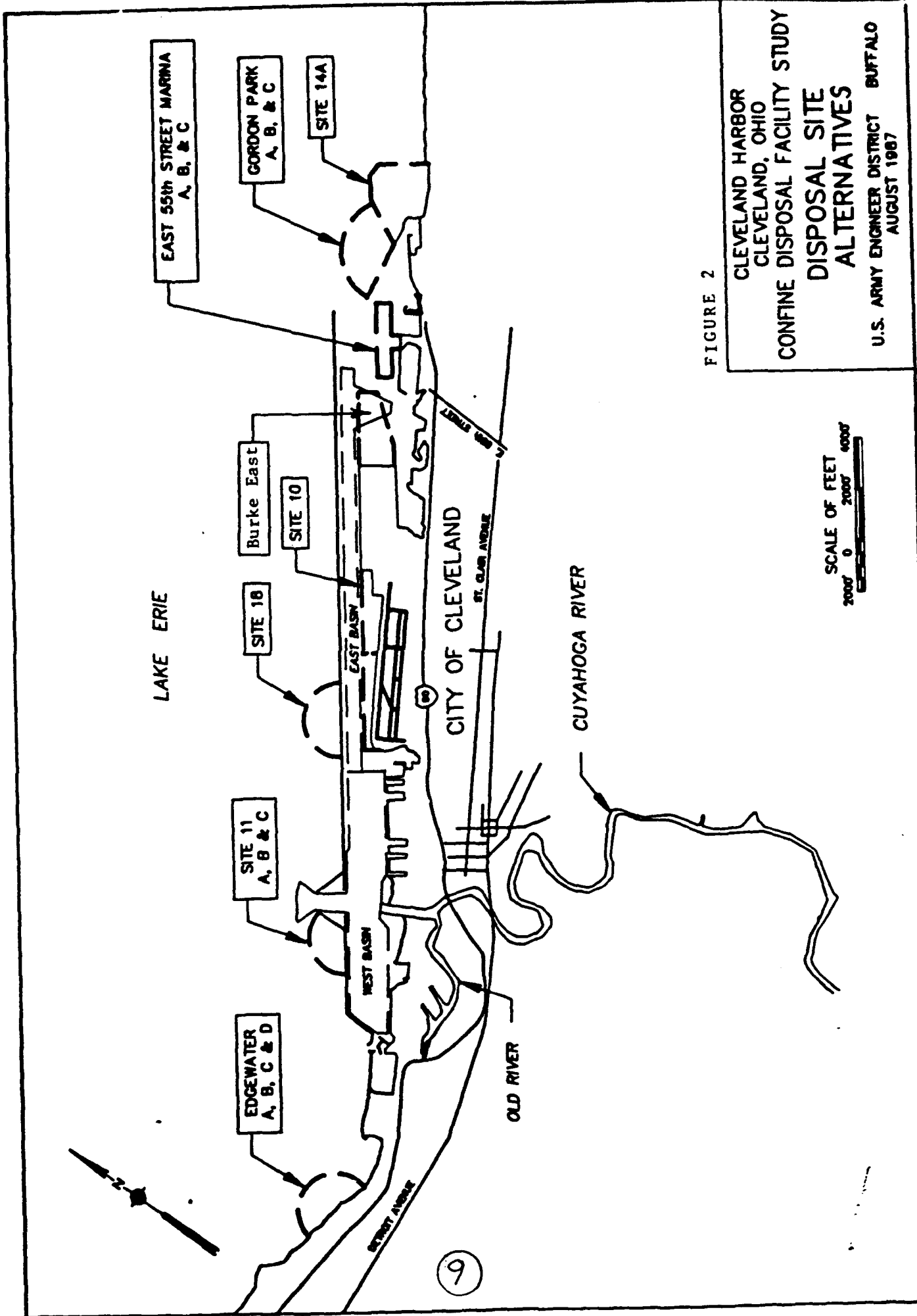


FIGURE 2

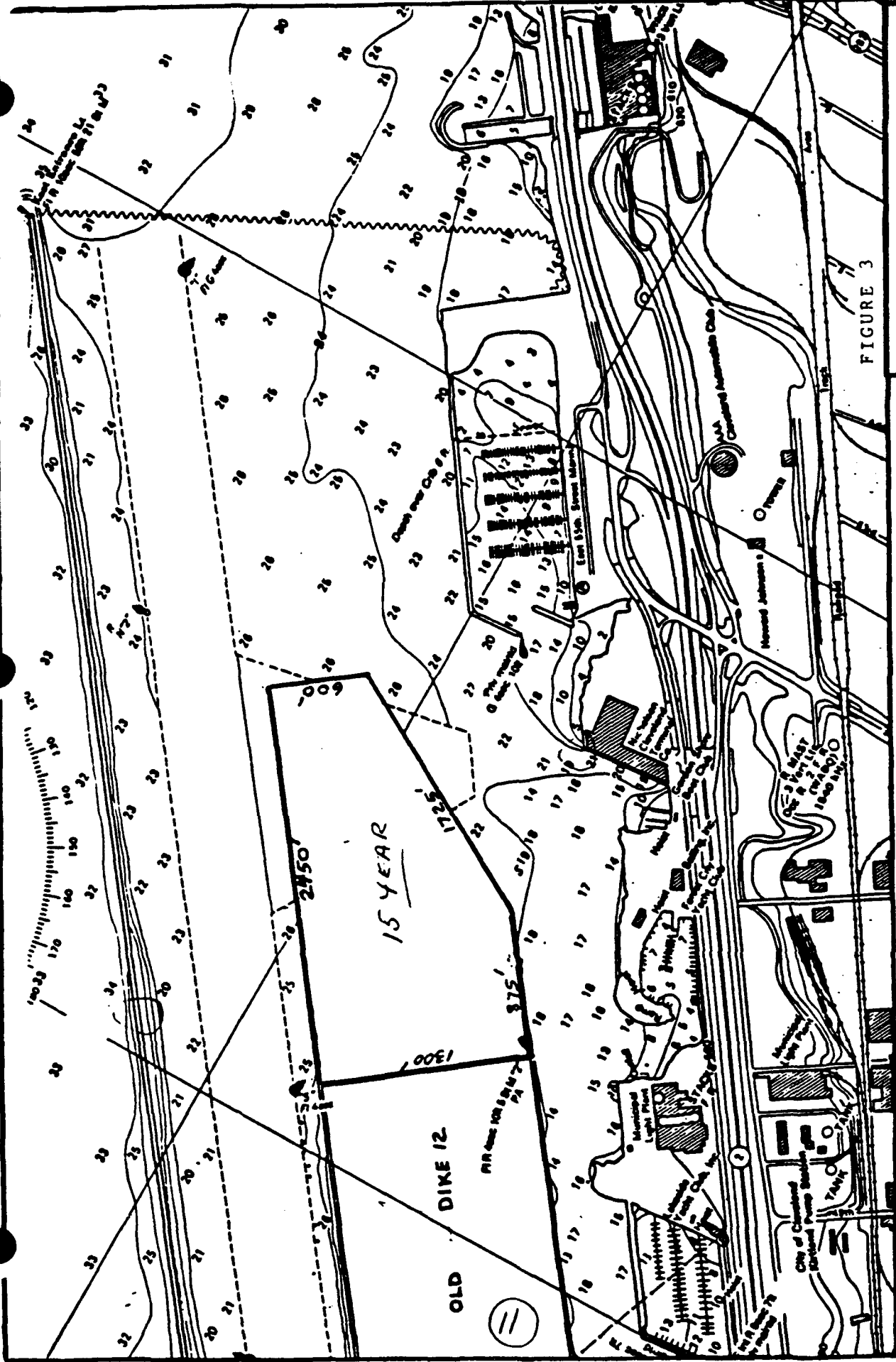
CLEVELAND HARBOR  
 CLEVELAND, OHIO  
 CONFINED DISPOSAL FACILITY STUDY  
 DISPOSAL SITE  
 ALTERNATIVES  
 U.S. ARMY ENGINEER DISTRICT BUFFALO  
 AUGUST 1987

SCALE OF FEET  
 2000' 0 2000' 4000'

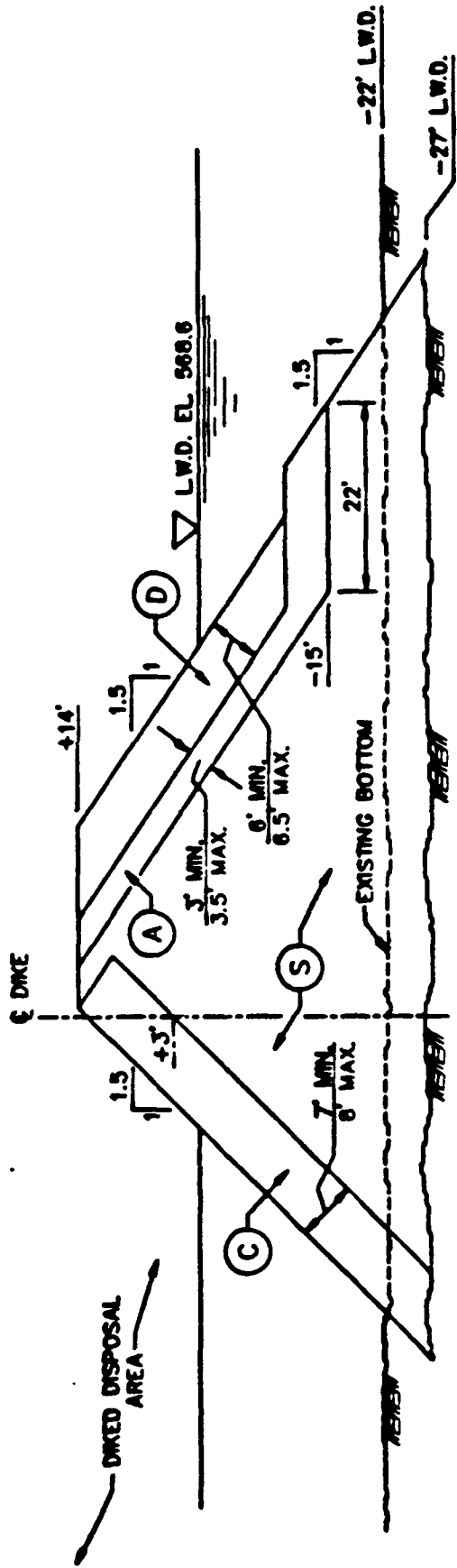
9

CLEVELAND HARBOR, OHIO  
NEW CDF - PROPOSED PLAN

The proposed plan is the Burke East (15-year) confined disposal facility (CDF) dike plan located at Cleveland Harbor, Ohio, as shown on Figures 3 and 4. The service life of this site would be 15 years at an annual dredged material fill rate of 300,000 cubic yards and compaction rate of 0.78 (22% consolidation). Therefore, the usable volume for this CDF site would be approximately 3,510,000 cubic yards of dredged material. The added stone dike encompassing the 70 acre project site would have a total length of about 5,650 feet requiring about 507,244 cubic yards of stone material. The average depth of water in the project area is about 26 feet. The new dike crest elevation would match that of the adjacent site 12 CDF to which the new CDF is being added at 14 feet above low water datum. Figure 3 outlines the plan dimensions and shows water depths within which the CDF would be constructed. Figure 4 shows a typical cross section of the dike.



CLEVELAND HARBOR, OHIO  
 CONFINED DISPOSAL FACILITY  
 PLAN SCHEME  
 USA CORPS OF ENGINEERS  
 BUFFALO DISTRICT



12

LEGEND:

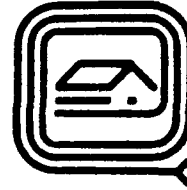
- (A) TYPE "A" STONE
- (C) TYPE "C" STONE
- (D) TYPE "D" STONE
- (S) TYPE "S" STONE

FIGURE 4

CLEVELAND COF REPORT  
 CLEVELAND, OHIO  
 CROSS SECTION  
 BURKE EAST 15 YR  
 U.S. ARMY ENGINEER DISTRICT BUFFALO

**Ohio Historic Preservation Office**

1982 Velma Avenue  
Columbus, Ohio 43211  
614/297-2470



**OHIO  
HISTORICAL  
SOCIETY**  
SINCE 1885

November 27, 1989

District Commander  
U.S. Army Engineer District, Buffalo  
1776 Niagara Street  
Buffalo, NY 14207-3199  
Attn: Environmental Analysis Branch,  
Mr. Timothy Daly

NOV 29 1989  
10 30 49 09

Dear Sir:

Re: New Confined Disposal, Cleveland Harbour

This is in response to your letter dated October 23, 1989 concerning the proposed project. Based on the information provided it is my opinion that no properties listed or eligible for the National Register of Historic Places will be affected by the proposed undertaking. No further coordination for this project is necessary unless the scope of the work changes.

If you have questions, please contact Julie Kime at (614) 297-2470. Thank you for your cooperation.

Sincerely,

W. Ray Luce  
State Historic Preservation Officer

WRL/JAK:jk



DEPARTMENT OF THE ARMY  
BUFFALO DISTRICT, CORPS OF ENGINEERS  
1776 NIAGARA STREET  
BUFFALO, NEW YORK 14207-3199

REPLY TO  
ATTENTION OF

Environmental Analysis Section

JAN 20 1993

SUBJECT: Cleveland Harbor - New CDF, Cuyahoga County, Ohio,  
Draft Letter Report and Draft Environmental Impact Statement.

TO ALL INTERESTED PARTIES:

Enclosed for your review are copies of the Cleveland Harbor - New Confined Disposal Facility (CDF), Draft Letter Report and Draft Environmental Impact Statement (DEIS) and Environmental Appendices. These reports pertain to potential construction and use of a new CDF along Burke Lakefront Airport and the Outer Harbor at Cleveland Harbor, Ohio.

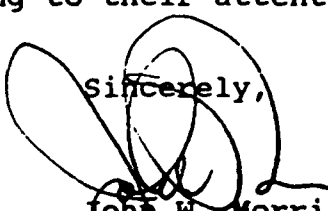
The DEIS has been prepared in accordance with the Council on Environmental Quality's "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)" 40 CFR 1500-1508, as promulgated in Corps of Engineers Regulation ER 200-2-2 "Environmental Quality: Policies and Procedures for Implementing NEPA."

A Clean Water Act, Public Notice and Section 404(b)(1) Evaluation Report are included in the DEIS Environmental Appendices.

These reports have been filed with the U.S. Environmental Protection Agency and are being coordinated for planning and NEPA 45-day agency and public draft review. If you have any comments on these reports, correspondence should be directed to the Buffalo District Office within 45 days of the date of the Notice of Availability (NOA) in the Federal Register. The date of the NOA should be several days later than the date of this letter. Public review comments on these reports will be addressed and incorporated into the subsequent final reports.

My points of contact pertaining to this matter are Mr. James Karsten of my Plan Formulation and Technical Management Section and Mr. Tod Smith of my Environmental Analysis Section, who can be contacted by calling 716-879-4245 or 716-879-4173, respectively, or by writing to their attention at the above address.

Sincerely,

  
John W. Morris  
Colonel, U.S. Army  
Commanding

Enclosures



OFFICE OF BUDGET AND MANAGEMENT  
**STATE CLEARINGHOUSE TRANSMITTAL**

30 E. Broad St., 34th Floor  
 Columbus, Ohio, 43266-0411  
 Phone (614) 466-0697 / 0698

STATE APPLICATION IDENTIFIER NO: OH930129-V173-36422  
 RESPONSE ON 60 DAY REVIEW SHOULD BE RETURNED 15 DAYS PRIOR TO CLEARANCE DATE OF: 93-03-08  
 FOR FULL APPLICATION CALL BY : \_\_\_\_\_

RECEIVED FEB 04 1993

APPLICANT: U.S. DEPT OF THE ARMY, CORPS OF ENGINEERS  
 ADDRESS: 1776 NIAGARA STREET, ENVIRONMENTAL ANALYSIS  
 CITY: BUFFALO STATE: NY ZIP: 14207-3199  
 ATTENTION: TOD SMITH/JAMES KARSTEN PHONE: (716) 879-4175

PROPOSED FEDERAL FUND: \$00  
 PROPOSED TOTAL FUND : \$00

PROJECT : DRAFT ENVIRONMENTAL IMPACTS STATEMENT

PROJECT DESC: CLEVELAND HARBOR, NEW CONFINED DISPOSAL FACILITY  
 (CDF), IMPACTS CUYAHOGA COUNTY, OHIO, DRAFT LETTER &  
 EIS (SEE OH900122-NO44-36422 FOR PREVIOUS REVIEW)

REVIEW AGENCY: DEPARTMENT OF AGRICULTURE - FC  
 DEPARTMENT OF NATURAL RESOURCES - 3 FC  
 DEPARTMENT OF HEALTH - FC  
 DEPARTMENT OF TRANSPORTATION - 2 FC  
 OH ENVIRONMENTAL PROTECTION AG - 3 FC  
 GOVERNOR - Cleveland Office - FC  
~~OH HISTORIC PRESERVATION OFC - FC~~

SHPO

CLEARINGHOUSE:  
 NORTHEAST OHIO AREAWIDE COORDINATING AGENCY (NOACA) - FC

Cleveland Harbor

Reviewing agency must complete this section.

COMMENTS - attach another sheet. Comments cited in this Section must include (1) Identification of reviewing agency's statute or specific plan or program related to this proposal, (2) Description of impact of this proposal on identified plan or program, (3) Reviewer's recommended changes for or additions to the proposal. Please type all comments and include SAI number on your comment sheet

REVIEWING AGENCY POSITION ON PROJECT (Mark one only)

- No comment.
- Clearance of the project should be granted.
- Clearance of the project should not be delayed, but applicant should answer the reviewer's questions or concerns. See enclosed comments.
- Clearance of the project should only be granted on the condition that the applicant use the recommendations in the enclosed comments. (Executive or Deputy Director Signature Needed.)
- Clearance of the project should be delayed until the applicant has satisfactorily addressed the concerns stated in the enclosed comments. (Executive or Deputy Director Signature Needed.)

New Coffman Disp.

PLEASE TYPE THE FOLLOWING INFORMATION:

Reviewer's Name: David Snyder Agency Name: Ohio Historic Preservation Office  
Martina J. Reynolds Ohio Historical Center  
 1885 Vales Avenue  
 Columbus, Ohio 43211 State: \_\_\_\_\_  
 Phone: 614/297-2470 Zip Code: \_\_\_\_\_  
 Executive or Deputy Signature: \_\_\_\_\_ MAR 02 1993  
 OSM 8008 (Rev 887)

15

CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL IMPACT STATEMENT  
APPENDIX EIS-G  
ENVIRONMENTAL CORRESPONDENCE

U.S. ARMY CORPS OF ENGINEERS

BUFFALO DISTRICT

1994

with section 552b(c) of Title 5, U.S.C., Appendix 1. (d). The classified and matters to be discussed are so inextricably intertwined so as to preclude opening any portion of the ASB Administrative Warner, may be contacted for information at (202) 695-3039

Officer, Army Science Board. 377 Filed 7-23-86; 8:45 am] 10-08-86

Board; Closed Meeting

with section 10(a)(2) of Advisory Committee Act (3), announcement is made in Committee Meeting: committee: Army Science

Meeting: Thursday-Friday, 1986. Meeting: 0800-1700. Belvoir, VA.

the Army Science Board Advisory Committee for Army Analysis will discuss the Engineer Center and other agencies, and the Laboratory Center. This meeting will be open to the public in accordance with section 552b(c) of Title 5, U.S.C., Appendix 1. (d). The classified and matters to be discussed are so inextricably intertwined so as to preclude opening any portion of the ASB Administrative Warner, may be contacted for information at (202) 695-3039

Officer, Army Science Board. 578 Filed 7-23-86; 8:45 am] 10-08-86

Board; Closed Meeting

with section 10(a)(2) of Advisory Committee Act (3), announcement is made in Committee Meeting: committee: Army Science

Meeting: Thursday-Friday, 1986.

Meeting: 0800-1700 hours. Belvoir, VA. the Army Science Board Advisory Committee for the Engineer Laboratory Effectiveness Meeting for a kickoff meeting review group. This meeting

will be closed to the public in accordance with section 552b(c) of Title 5, U.S.C., specifically subparagraph (1) thereof, and Title 5, U.S.C., Appendix 1, subsection 10(d). The classified and nonclassified matters to be discussed are so inextricably intertwined so as to preclude opening any portion of the meeting. The ASB Administrative Officer, Sally Warner, may be contacted for further information at (202) 695-3039 or 695-7046.

Sally A. Warner, Administrative Officer, Army Science Board. [FR Doc. 86-16679 Filed 7-23-86; 8:45 am] BILLING CODE 3710-08-M

Corps of Engineers, Department of the Army

Intent To Prepare a Draft Environmental Impact Statement (DEIS) for the Confined Disposal of Polluted Sediments Dredged From the Cleveland Harbor Commercial Navigation Project at Cleveland, OH

AGENCY: U.S. Army Corps of Engineers, Buffalo District, DOD.

ACTION: Notice of intent to prepare a Draft Environmental Impact Statement (DEIS).

Summary

1. Description of Action. The proposed action involves constructing an additional Federal confined disposal facility (CDF) at one of two alternative sites. The first site is located west of the Cuyahoga River on the shoreline of Lake Erie at Edgewater Park. The second site is east of the river and immediately adjacent to Burke Lakefront Airport. The Burke Lakefront Airport was constructed on old CDFs which have been filled to capacity. Several other CDFs exist to the east of the Cuyahoga River mouth to include site 14 which is presently being used. No sites presently exist in the Edgewater Park vicinity. The proposed site would cover an area of about 100-150 acres.

2. Alternatives. Potential alternatives to the proposed action consist of no-action, extending the life of the existing CDF, and constructing a new CDF at another location.

3. Scoping Process. An initial scoping meeting was held with the Cleveland Port Authority and concerned resource agencies on 29 March 1985. Additional coordination will be accomplished during preparation of the DEIS. The participation of concerned Federal, State, and local agencies, and other interested private organizations and parties is invited. Significant issues to

be analyzed in the DEIS include sediment and water quality, fish and wildlife impacts, and commercial shipping.

4. Scoping Meeting. No additional scoping meeting is currently scheduled.

5. Availability. The DEIS is scheduled to be available for review in January 1986.

ADDRESS: Questions about the proposed action and DEIS can be answered by William F. MacDonald, U.S. Army Engineer District, Buffalo, 1776 Niagara Street, Buffalo, NY 14207, telephone (716) 876-5454, extension 2175 or FTS 473-2175.

Dated: July 11, 1986. Bruce W. Haigh, LTC, Corps of Engineers, Acting District Commander. [FR Doc. 86-16670 Filed 7-23-86; 8:45 am] BILLING CODE 3710-08-M

Intent To Prepare a Draft Environmental Impact Statement (DEIS) for the Harkers Island Navigation Project, Carteret County, NC

AGENCY: Army Corps of Engineers, DOD.

ACTION: Notice of intent to prepare a Draft Environmental Impact Statement.

SUMMARY: 1. The proposed project consists of dredging a navigation channel from Westmouth Bay through Eastmouth Bay to the existing channel in Core Sound near the east end of Harkers Island. The width of the proposed channel would be approximately 60 feet with a depth of 6 or 7 feet, plus a 2-foot overdepth allowance for dredging inconsistencies. The proposed channel would be approximately 13,600 feet long. Disposal areas for the containment of dredged material generated by the project have not yet been identified.

2. Alternatives to the proposed channel include variations in channel dimensions and alignment. Also being considered is a wide range of disposal options including upland diked disposal on Harkers and Browns Islands, toe-of-the-bank disposal on portions of Harkers Island, and semi-confined disposal in Core Sound. Also being considered is the no action alternative.

3a. All private interests and Federal, State, and local agencies known to have an interest in the study have been notified of the study start and have been provided an opportunity for input into the study process. All additional agencies, organizations, and interested parties which have not been previously notified are invited to comment at this time.

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4. A: the stu interes meeting; howev any sig project approp

5. It i Project avail 1987.

ADDRE: action: William Analyst District Wilmin telepho 671-47:

Dated Paul W. Colonel Engineer [FR Doc BILLING C

DEPAR Richar AGENCY Richlan

Best Available Copy

am't have as of 8/5/86

*The Port of Cleveland*

Cleveland-Cuyahoga County Port Authority

MAILROOM-NCBIN-8

29 JAN 88 09 30

January 25, 1988

Daniel R. Clark  
Colonel, U.S. Army  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207-3199

Dear Colonel Clark:

This is in response to your letter of January 21, 1988 advising us of the termination of action on Confined Disposal Facility (CDF) #10 in Cleveland Harbor.

In your letter you noted the Corps intended to resolve the matter on a short term basis by raising the height of the existing Dike 14 even though it could adversely effect the use of this site for material from the deepening of the east basin. In the meantime, efforts are to be made to find another suitable site for a CDF in Cleveland.

The Cleveland-Cuyahoga County Port Authority is fully supportive of your efforts. We intend to work with your staff to resolve the matter. The new CDF and its effect on current and future dredging projects in the Cleveland Harbor are matters of considerable importance to our area. Please be assured that you will have our fullest cooperation as you proceed in this endeavor.

Sincerely yours,



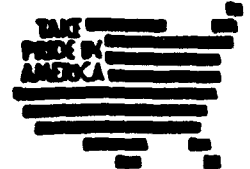
Anthony F. Fugaro  
RADM, USCG (Ret.)  
Executive Director

AFF:rms

cc: North Coast Development Corporation  
Greater Cleveland Growth Association  
Cleveland Waterfront Coalition  
Flats Oxbow Association  
Lake Carriers Association  
Cuyahoga County Commissioners  
Cleveland Department of Port Control  
Ohio Department of National Resources  
Congresswoman Mary Rose Oaker



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Reynoldsburg Field Office  
6950-E Americana Parkway  
Reynoldsburg, Ohio 43068-4115  
(614) 469-6923

IN REPLY REFER TO.

March 23, 1988

Colonel Daniel R. Clark  
District Engineer  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

Attention: Dick Leonard

20MAR:08 09 21  
MAILROOM-NCBIB-S

Dear Colonel Clark:

This responds to your March 16, 1988 letter regarding the alternative Confined Disposal Facility (CDF) for polluted sediments dredged from the Cuyahoga River and Cleveland Harbor, Cuyahoga County, Ohio.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973, as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy.

The newly proposed CDF would encompass 32 acres and be located adjacent to and eastward of CDF 12 near Burke Lakefront Airport. A number of sediment samples were obtained in 1981 from the navigation channel in the vicinity of the proposed site. Data from these sediment samples show the material to be in the highly polluted range for most parameters. While the sediments sampled may be representative of sediments in the proposed site, we recommend that additional sediment testing be conducted at the proposed site to determine the polluted nature of these sediments as well as the physical composition (clays, silts, sands, etc.).

We have no biological data from the currently proposed site. However, based on fishery data from the last proposed site adjacent to Burke Airport, we would expect to find a variety of fish species using the area. Therefore, we recommend that fish and benthic studies also be conducted at the proposed site.

As you may well remember, over the past 10 years we have advocated upland disposal for polluted material from the Cuyahoga River and Cleveland Harbor. We have also proposed that the erosion control plan as described in the Erosion and Sedimentation Study, Third Interim Report, Cuyahoga River Restoration Study be implemented in the Cuyahoga River watershed (mile 13.8 to 40.25) to reduce the quantity of material needed to be dredged on an annual basis from the Cuyahoga River and Cleveland Harbor. We believe this is the time to seriously

look for an alternative to inwater construction of confined disposal facilities in the Cleveland Harbor area since CDF 14 will contain (when the dike height is raised) dredged material until the year 1995. The Corps of Engineers has spent hundreds of millions of dollars building CDF's in Cleveland Harbor and filled hundreds of acres of shallow water habitat. We see no end in sight to these practices but believe a change in direction is needed regarding dredging and disposal of material from the Cuyahoga River and Cleveland Harbor.

A written response to these recommendations and proposals would be appreciated.

We appreciate this opportunity to provide the above comments.

Sincerely yours,

  
Kent E. Kroonemeyer  
Supervisor

cc: Chief, Ohio Division of Wildlife, Columbus, OH  
ODNR, Outdoor Recreation Service, Attn: M. Colvin, Columbus, OH  
Ohio EPA, Water Quality Monitoring & Assessment, (C. Crook), Columbus, OH  
U.S.EPA, Office of Environmental Review, Chicago, IL



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

230 SOUTH DEARBORN ST.  
CHICAGO, ILLINOIS 60604

100-10000-10000-5

25 APR 88 11 15

REPLY TO THE ATTENTION OF

21 APR 1988

Colonel Daniel R. Clark  
Department of the Army  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207-3199

Dear Colonel Clark:

Thank you for your letter of January 21, 1988 concerning the plans of your agency for the continued maintenance dredging of Cleveland Harbor, Cleveland, Ohio. Your letter outlined your agency's plans to modify the existing confined disposal facility by raising the dike by seven (7) feet, and to begin the search for sites for a new confined disposal facility in the Cleveland area. At this time I would like to indicate our willingness to work with you and your staff on both of these projects.

The plan to raise the dike wall at the existing confined disposal facility by seven feet may result in negative impacts that need to be addressed. Our principal concern focuses on the placement of sediments in the existing confined disposal facility and the measures that will be taken to prevent supernatant or leachate from re-entering the environment. A comparison should be made of discharge amounts and flow rates between current and proposed conditions. An increase in the height of the dike wall would lead to an increase in the gradient between the materials inside the CDF and the lake. Thus, the head, or the driving force for advection of leachate out of the CDF would be increased. The potential for leaching of heavy metals from the sediments will increase at the site with the raising of the dike walls, since the sediments will become aerobic. The oxidation of the sediments may allow metals attached to the silt and fine materials to become mobile. The potential for this increased mobility must be assessed, as well as estimating the levels of metals in the leachate that enters the lake surrounding the confined disposal facility. A means for monitoring the movement of leachate through the dike walls should also be addressed in the supplement to the final environmental impact statement.

Since dredged materials will be placed in the confined disposal facility above the water line the materials will dry more quickly. Dried sediments would have a greater potential to become airborne. The likelihood for such occurrences should be addressed and measures to control wind blown particulates at the confined disposal facility throughout the life of the project should be discussed.

5

In regard to the search for a new confined disposal facility we would be willing to review potential sites with you and your staff. In addition to finding a site for disposal of the dredged material, alternative technologies for isolating and/or reducing the volume of this material should be evaluated. The draft environmental impact statement should evaluate upland and in water sites as well as design criteria to prevent the loss of contaminants to the environment.

We appreciate your advising us of the status of these two projects. We look forward to future updates on these projects. We are also willing to meet with you and your staff to discuss these projects. To make arrangements for such a meeting, please contact Ms. Jennifer Brown of my staff at (312) 886-6873.

Sincerely yours,



William D. Franz, Chief  
Environmental Review Branch  
Planning and Management Division

25 APR 89 11 15

HARRISON-ROBIN-S



GEORGE J. RYAN, President  
GORDON D. HALL, Vice President / Treasurer  
CAROL ANN LANE, Secretary

THOMAS E. MURPHY, General Counsel  
GLEN G. NEWBELL, Communications Director

MAIL ROOM - NO. 514-S

# LAKE CARRIERS' ASSOCIATION

614 Superior Avenue, N.W.  
915 Rockefeller Building  
Cleveland, Ohio 44113-1306  
(216) 621-1107

10 JUN 88 09 43

June 8, 1988

Dr. Steve Yaksich  
Buffalo District  
U.S. Army Corps of Engineers  
1776 Niagara Street  
Buffalo, NY 14207-3199

Dear Steve:

Confirming discussions at this afternoon's meeting for a Cleveland Confined Disposal Facility (CDF) please be advised the Association's members interpose no objection to extension of a proposed CDF east of Burke Lakefront that would extend into the existing Turning Basin, essentially rendering it useless for deep draft shipping. The Turning Basin has served no useful purpose for our members or our Canadian counterparts for years and years.

If we can be of assistance in the legislative process (if required) to de-authorize that portion of the Federal project, please let me know.

Sincerely yours,

  
Gordon D. Hall

Vice President/Treasurer

GDH:emh

cc: Mr. Richard S. Bartz - Ohio Dept. of Natural Resources  
Mr. Leighton Washburn - Cleveland City Planning Commission  
RADM Anthony Fugaro - Cleveland-Cuyahoga County Port Authority

7



June 10, 1988

Dr. Steven Yaksich  
Buffalo District, Corps  
Of Engineers  
1776 Niagara Street  
Buffalo, NY 14207-3199

Dear Dr. Yaksich,

I am writing in reference to the meeting held at the Ohio Department of Natural Resources offices in Cleveland on June 7, 1988, concerning the placement of the new Dike 14 confined dredge disposal area.

The Cleveland-Cuyahoga County Port Authority is in agreement with the location proposed, i.e., east of the present Dike 12. Furthermore, we support the use of the former turning basin in that area to provide additional capacity.

Vessels using the Port of Cleveland do not and have not made use of that turning basin and we can see no benefit in retaining it as part of the federal project in Cleveland Harbor.

Therefore, the Port of Cleveland wishes to go on record supporting the proposed location of the new Dike 14 east of Dike 12 and the use of the turning basin opposite the former Nicholson Terminal complex.

Should you have any further questions regarding this matter, feel free to contact me.

Sincerely,

Anthony F. Fugaro  
RADM, USCG (Ret.)  
Executive Director

cc: George Ryan, Lake Carriers Assoc.  
Layton Washburn, City of Cleveland  
Ron Toth, Dept. of Port Control

8



U.S. Department  
of Transportation  
Federal Aviation  
Administration

Airports District Office  
Willow Run Airport, East  
8820 Beck Road  
Belleville, MI 48111

September 29, 1988

Col. Hugh F. Boyd III  
District Engineer  
Attn: Dr. Steve Yaksich  
U.S. Army Corps of Engineers  
1776 Niagara  
Buffalo, NY 14207-3199

Dear Dr. Yaksich:

New Confined Disposal Facility (C.D.F.)  
to be located in the Cleveland Harbor

Our Airports District Office has been involved in the identification of proposed sites for the subject facility at Burke Lakefront Airport (BKL) with the City of Cleveland. We are in receipt of the letter dated July 27, 1988, from Jacqueline Shuck, Director of the Department of Port Control, to your office recommending two sites at BKL and wholeheartedly support both sites.

The existing Airport Layout Plan, Exhibit 3, dated December 1981, shows development of a replacement runway for the current inner runway. Completion of the fill to complement the previously filled area is critical to accomplishment of the Master Plan.

Due to the physical constraints on significantly increasing the capacity at Cleveland Hopkins International Airport, it is imperative that BKL be developed to support the future aeronautical needs of the corporate and commuter traveler seeking access to Downtown Cleveland. Likewise, development of an outer runway to the east would allow for the possible redevelopment of the land on the west end of the airfield to meet demands on the City to establish areas for non-aeronautical development.

If you have any questions, or need additional information supporting our position favoring the continued placement of fill at BKL, please contact this office.

Sincerely,

Peter A. Sorini  
Manager, Airports District Office

- LEGEND**
- Airport Property Line
  - [ ] Clear Zone
  - ==== Airfield/Apron Pavement
  - ==== Railroad Tracks
  - Building Restriction Line
  - ==== Roadway
  - ◀ Airport Reference Point
  - Airport Structure
  - Other Structure
  - Fencing
  - Contour Line
  - Shoreline
  - Potential Long-Term Improvements
  - Airfield
  - Passenger Terminal
  - General Aviation, Air Cargo, Airport Support
  - Non-Aviation Commercial
  - Future Landfill



Scale  
 1 inch = 1000 feet  
 approximately 1981

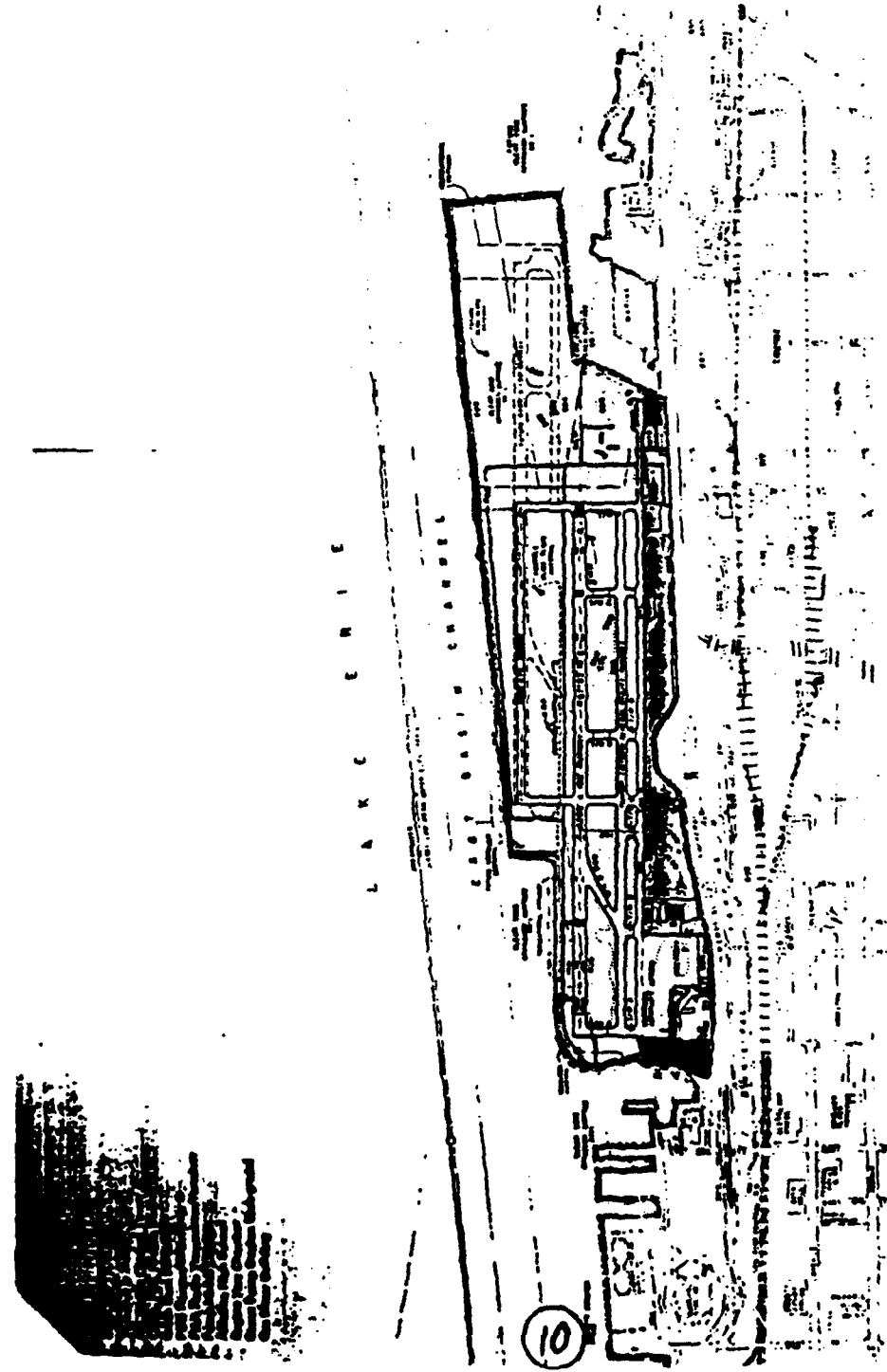


Exhibit 3  
 Berlin Lakeland Airport  
 City of Cleveland, Ohio  
**YEAR 2000 AIRPORT MASTER PLAN**  
 Per: Marshall, Mitchell & Co./Polytech Inc. December 1991



Richard F. Celeste/Governor

# OHIO DEPARTMENT OF TRANSPORTATION

25 South Front Street  
P.O. Box 899  
Columbus, Ohio 43216-0899

September 29, 1988

Colonel Hugh F. Boyd III  
District Engineer  
U.S. Army Corps of Engineers  
1776 Niagara  
Buffalo, New York 14207-3199

Attention: Dr. Steve Yaksich

SEP 29 1988  
COMMUNICATIONS

Re: Confined Disposal Site for  
Cleveland Harbor

Dear Colonel Boyd:

The Ohio Department of Transportation (ODOT) supports the position of the City of Cleveland with respect to the best site for the disposal of dredge material by the U.S. Army Corps of Engineers.

The Department has an established policy of preserving existing airports, and Burke Lakefront Airport is a classic example of an airport which is in danger of being closed so that the land it occupies can be used for other purposes.

Of the proposed disposal sites, the northeast site is clearly preferable in view of the Department's policy on preserving existing airports. By expanding vacant land adjacent to the existing runway, this site will allow the airport facilities to be relocated there should the need arise. The waterfront land made available by the relocation of airport facilities would far exceed in size and value the land from the alternate site at East 55th Street. Furthermore, the site at East 55th Street would be subject to limitations on development because it is partially within the clear zone of the airport's existing runway.

In discussions with the Cleveland-Cuyahoga County Port Authority, the Port Authority also has voiced its support for the disposal site on the northeast corner of Burke Lakefront Airport.

Colonel Hugh F. Boyd III  
September 29, 1988  
Page 2

Again, ODOT requests that you heed the recommendation of the City of Cleveland and the Cleveland-Cuyahoga County Port Authority and locate the disposal site on the northeast corner of Burke Lakefront Airport.

Sincerely,

*Bernard B. Hurst*  
Bernard B. Hurst, P.E.  
Director

BBH:gj

cc: Jacqueline L. Shuck, City of Cleveland  
Anthony F. Fugaro, Cleveland - Cuyahoga County Port Authority



City of Cleveland  
GEORGE V. VOINOVICH, MAYOR



CITY PLANNING COMMISSION  
HUNTER MORRISON, DIRECTOR  
501 CITY HALL  
CLEVELAND, OHIO 44114  
216 864 2111

March 3, 1989

Mr. Steve Yaksitch  
Department of the Army  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207-3199

Re: CDF Site Selection - Cleveland

Dear Steve:

Please have patience with Cleveland. We are still in the process of assembling a unified approval of our preferred CDF site among all the local interests involved. However, the attached sketch dated November, 1988 best represents the majority view at this juncture.

We recommend your consideration of this revised configuration with the narrowed (600') easterly end of the E-BKL site. Our object was twofold: (1) to open as large as possible the ingress/egress to the existing marinas, and (2) to enable northeasterly storms to help flush the quiet water at the westerly-most marina (Lakeside Yacht Club) where a storm sewer now empties.

We have FAA concurrence with this concept of ultimately shifting Burke Lakefront Airport easterly on Sites W-BKS and E-BKL and converting its westerly end to non-airport use. Of course it will be necessary for the City to obtain a submerged land lease from the State of Ohio in order to sublease to you for dike construction.

Sincerely,

Layton K. Washburn  
Secretary to Planning Director

LKW:dkw

6 MAR 29 11 33

MAILROOM-NCBIM-5

# PROPOSED DREDGINGS DISPO. SITES

## CITY PLANNING COMMISSION

EXISTING BURKE AIRPORT Nov. 1988

EXISTING UNDEVELOPED FILL

PROPOSED FILL SITES

AREA TO BE CONVERTED TO NON-AIRPORT USE

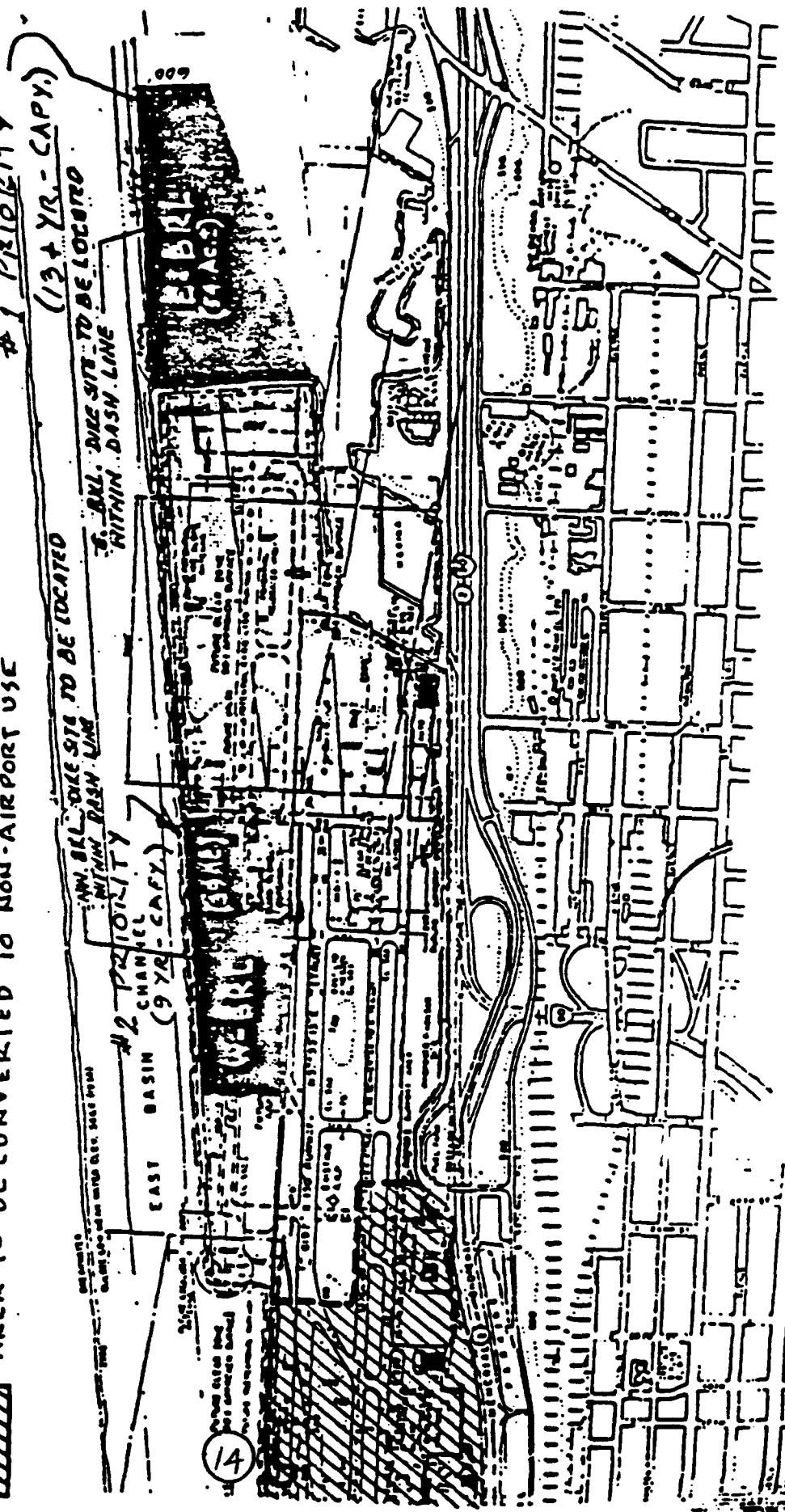


#1 PRIORITY  
(13+ YR. - CAPY.)

ALL DRED SITE TO BE LOCATED WITHIN DASH LINE

#2 PRIORITY  
CHANNEL  
(9 YR. - CAPY.)

EAST BASIN



CLEVELAND  
BURKE LAKEFRONT AIRPORT



MAIL ROOM-NCRIM-S

2-11-89 89 37

# Cleveland Waterfront Coalition

The Arcade  
Room 346  
401 Euclid Avenue  
Cleveland, Ohio 44114  
216/771-2666

To increase awareness of  
Cleveland's waterfront as a  
public resource and to  
promote comprehensive  
waterfront planning for  
public use.

March 20, 1989

Mr. Hugh F. Boyd III  
Dist. of the Army  
Buffalo District, Corps of Engineers  
Buffalo NY 14207-3199

Mr. Boyd:

Thank you for your letter of January 25, regarding Dike 14. It is regrettable that neither you nor a spokesperson for the Corps of Engineers was present at our January 26 panel discussion. Since the Corps alone is responsible for the proposal, research and construction of the CDF's, your absence from this meeting was detrimental to our understanding of these issues. Furthermore, your letter made a number of statements that require clarification.

First, your letter mentioned an alternative site that was dropped because of local cost considerations. Our panel concluded that this was probably site 10, north of Burke Airport. What were the local costs for these improvements and when did the Port Authority withdraw support for this proposal?

Second, what is the status of the Corps' pending request of the City of Cleveland (dated December 9, 1988) to act as a Local Cooperator on the Dike 14 project? Has such an agreement been signed yet? What will occur if the City does not cooperate in the project?

Third, your letter states that site selection for a new CDF is currently underway. Where might that new site(s) be and how long would be required to prepare this site for use? If this site were approved by all parties in the next few months, would it be available by 1992?

Our Dike 14 panel consisted of Richard Bartz, Ohio Dept. of Natural Resources, Ron Toth, City of Cleveland Port Control, and Layton Washburn, City of Cleveland Planning Dept. Also invited but not in attendance were: Anthony Fugaro, Executive Director, Cleveland-Cuyahoga County Port Authority and Cleveland City Council member, James Rokakis, and Gus Frangos, as well as Mr. Mammoser from your office. While little direct support was expressed for raising Dike 14, most panelists seemed resigned to accept the proposal mainly due to the lack of any ready alternative.

Ironically, many alternative sites have been considered by your engineers, and several have been supported by local agencies. Ron Toth spoke of the pressing need to expand the airport to accommodate future development and Mr. Bartz stated that dredgings could supply land for marina and other recreational needs along Cleveland's lakefront.

Questions were raised by several of our members concerning the increase in the height of the proposed dike, a diagram of which was enclosed with your letter as Alternative 1. These comments included the following:

- 1.) It does not cover the rusting metal sheeting that now protrudes above the ground.
- 2.) The "floating" nature of this construction may cause it to be unstable as the dredgings below it settle.
- 3.) The materials used in its construction are inferior to the original dike and may result in erosion.
- 4.) The existing dike constructed of large stones blocks access to and use of the Lake. Additional height will only exacerbate this problem, requiring greater future expenditure of local funds to permit the public to reach the water and to use the site.
- 5.) The present height (20' LWD) is higher than any other CDF on Cleveland's lakefront. Increased height will result in a diminished view of the Lake from both the East Shoreway and other land areas.

It is our feeling at the Coalition that the public has waited patiently since 1976 for the completion of the Dike 14 addition to Gordon Park. Not only is it not yet filled but it won't be until 1992 when your current proposal will heap seven feet more of dredgings on top of it. Please be aware that this area has long been park land; an area that once had a beach and lagoons. It is for this reason that Clevelanders attach a special significance to this park and Dike 14.

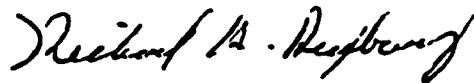
While the Coalition is primarily concerned with returning the area to public use, there are other interests that would be better served by your dredging operations. I am attaching a copy of a letter from Anthony Fugaro, Executive Director of the Cleveland-Cuyahoga County Port Authority, regarding this issue. He states that priority should be given to using the area west and northwest of

the existing Burke Airport landfill, known as 'NW BKL Dike Site for the CDF.' Secondary priority should be given to the area east of the Airport, known as 'E DKL Dike Site.' In addition, Mr. Fugaro lists other Fort Authority objections to raising the height of Dike 14, many for the same reasons as the Coalition.

Let there be no misunderstanding, the Coalition does not want to criticize the Corps for fulfilling its federally mandated duties, but it is obvious that Dike 14 will have, by 1992, provided much more than the originally specified 10 years of fill capacity. The Corps' desire to pursue the least cost solution is laudable in these times of budget deficit, however, it completely disregards other intangible costs such as public recreation and the competing needs for landfill materials elsewhere.

It is due in part to these reasons, as well as the previously stated comments from our January 26 panel discussion, that the C.W.C. feels compelled to request a public meeting to review the proposed raising of Dike 14. Please provide the C.W.C. with a copy of the final design document, as well as a supplement to the Environmental Impact Statement regarding this proposal.

Sincerely,



Richard Duxbury  
Chairman, Research Committee

Enc.  
cc. Mr. Richard Mammoser

24 MAR 89 09 37

HALL ROOM - NCBIH-5

APR - 4 1969

APR 09 11 25

MAILROOM NCRIM-S

Engineering Division

SUBJECT: Cleveland, Ohio Confined Disposal Facilities

Cleveland Waterfront Coalition

ATTN: Mr. Richard A. Duxbury  
The Arcade, Room 346  
401 Euclid Avenue  
Cleveland, Ohio 44114

Dear Mr. Duxbury:

Thank you for your letter of March 20, 1969 expressing your concerns for the confined disposal facilities (CDF) program at Cleveland.

As you are aware, the Corps of Engineers is responsible for maintaining navigable depths in Cleveland's waterways. Since sediments therein have been classified as polluted by the United States Environmental Protection Agency (USEPA), they must be placed in a CDF. The law requires that the cost of maintaining a waterway, including the cost of any necessary CDF, be justified by the benefits derived by the users of the waterway. It also requires us to select the plan with the greatest net benefits, unless another party agrees to contribute funds in excess of the cost of the least costly alternative. At the present time and for the last three years I have been trying to select and coordinate a site for construction of a new CDF. To date, this effort has not been finalized.

Due to the delays in site selection for the new CDF and to assure that I can continue to maintain Cleveland's waterways, I intend to extend the life of Dike 14. Design is underway to accomplish this. The much cheaper cost per cubic yard of this plan when compared to the cost of new capacity is a compelling reason for doing so. I certainly understand your concerns about raising Dike 14, but I feel these are outweighed by my responsibility to maintain the Cleveland waterways. The other alternative would be to cease dredging, and I think you will agree that this is not the preferable alternative.

I have not responded to your individual questions. Our normal procedure would be to suggest that you communicate with the Cleveland-Cuyahoga Port Authority, our current local cooperator for Dike 14. They should be able to relay our plans and theirs for the city's ultimate development of the facility. Although the port authority may not be enthused about raising Dike 14, they have agreed to act as the sponsor for that project because they, like the Corps, want to do what is necessary to keep Cleveland Harbor dredged and retain Cleveland's status as a leading Great Lakes port.

Engineering Division

SUBJECT: Cleveland, Ohio Confined Disposal Facilities

I have attached a copy of the authority's letter dated November 3, 1987 wherein they agreed to act as Local Cooperator for the raising of Dike 14.

I am continuing with my design for raising Dike 14 based on the Part of Cleveland's previous position of support for this project.

I will provide you a copy of the design document and Environmental Impact Statement Supplement when it is available. I will also consider your request for a public meeting at the appropriate time.

If you have any questions, please contact Mr. Richard Hammoser, of my Project Management Section, at (716) 876-5454, extension 2229.

Sincerely,  
**HUGH F. BOYD III**  
**COLONEL U.S. ARMY**  
**COMMANDING**

Hugh F. Boyd III  
Colonel, U.S. Army  
Commanding

Attachment

CF:  
Cleveland-Cuyahoga Port Authority  
City of Cleveland

28 APR 89 09 43

April 20, 1989

Mr. Richard Mammosen  
Department of the Army  
Buffalo District Corps  
1776 Niagna Street  
Buffalo, New York 14207-3199

Dear Mr. Mammosen:

The St. Clair-Superior Coalition calls your attention to an important Lakefront asset within our neighborhood boundaries, Gordon Park. Our neighborhood service area is part of a State of Ohio designation called the Lakeside Enterprise Zone, which encourages re-investment. The St. Clair-Superior Coalition services the area from East 40th St. to MLK Jr. Blvd., Superior to the Lake. The SCSC is actively involved with the Civic Vision planning currently undertaken by the City of Cleveland.

We would very much like to increase the marketability of this "East Downtown" neighborhood by being able to boast about the advantages of living so close to Cleveland's Central Business District, University Circle and most importantly, Cleveland's Lakefront. Certainly, residents (16,500 persons, 15 different cultural clusters) are proud of the recreational advantages the Lakefront presents. It is one of the amenities of this neighborhood. Three entranceways lead to the Lake: East 55th, East 72nd and East 82nd Sts.

We are further encouraged by the following re-investment decisions by major governmental bodies: East 55th Marina (ODNR); I-90-East 55th St. landscaping (ODOT) Fall '89-Spring '90; bike path on the North Marginal Rd (ODNR); Gordon Park ball diamond rehabilitation (City of Cleveland); overall interstate landscaping to present a greenbelt entrance to downtown and along the lakeshore (ODOT); new construction of Stampa service center at E 40th and the South Marginal Rd. (City of Cleveland); increased attention to maintenance of the fine Cultural Gardens along MLK Jr and East Blvd (City of Cleveland); roadway repaving and culvert repairs on the Blvd (City of Cleveland); increased dollars to the City of Cleveland Rockefeller Park greenhouse and grounds; Kirtland Park maintenance (City of Cleveland).

The SCSC neighborhood is also a beginning partner in the City's Code Enforcement Partnership in an attempt to upgrade the housing stock.

We, therefore, are asking that you consider the Army Corps of Engineers a partner in the re-vitalization of this portion of the Lakefront by enabling the Dike #14 to be usable as recreational AS SOON AS POSSIBLE. Gordon Park can add significantly to the neighborhood's quality of life and marketability, plus provide a stabilizer for the northernmost part of the area for greater Clevelanders as well. We would appreciate information as to the other available fill site areas under consideration, as it affects our portion of the Lakefront. We look forward to your speedy reply.

Sincerely,

*Kathryn Gaksic*  
Kathryn Gaksic,  
SCSC President.  
216-951-6644

6408 St. Clair Ave  
Clev., Oh.  
44103

(21)

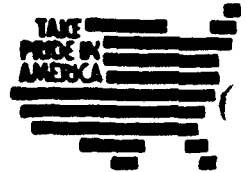
28 APR 89 09 41

MAIL ROOM - NCBII

60



# United States Department of the Interior



IN REPLY REFER TO:

FISH AND WILDLIFE SERVICE  
Reynoldsburg Field Office  
6950-H Americana Parkway  
Reynoldsburg, Ohio 43068-4115  
(614) 469-6923

May 24, 1989

BE

Colonel Hugh F. Boyd, III  
District Engineer  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

Attention: Leonard Bryniarski

Dear Colonel Boyd:

Attached, per agreement No. NCB-IA-88-44JS is our Biological Report on the proposed Confined Disposal Facility in Cleveland Harbor, Cuyahoga County, Ohio.

Sincerely,

*Kent E. Kroonemeyer*  
Kent E. Kroonemeyer  
Supervisor

22

16



*The Port of  
Cleveland*

Cleveland-Cuyahoga County Port Authority

MAIL ROOM-HCSIM-S

JUN 09 09 54

June 5, 1989

Colonel Hugh F. Boyd III  
Department of the Army  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207-3199

SUBJECT: Cleveland, Ohio Confined Disposal Facilities

Dear Colonel Boyd:

In response to your letter of May 11, 1989, this is to advise you that the Cleveland-Cuyahoga County Port Authority is agreeable to act as the Local Cooperator for raising Dike 14 the amount needed to provide for interim disposal capacity until the new Confined Disposal Facility (CDF) can be completed and ready for use at the Burke East site.

I have discussed the matter with both the City of Cleveland and the Ohio Department of Natural Resources. All of us are in agreement that is in the best interests of the Cleveland area to design and construct the new CDF at Burke East. However, it is also understood that additional interim capacity must be provided at Dike 14 until the new site can be made ready for use. It is also understood that the Burke East site will not require any utility relocations and therefore the concerns you raised, regarding dependence on any other federal monies, will not be a factor here.

I recognize that you are under strict time constraints to effectuate uninterrupted disposal activities at Cleveland Harbor and hope that this letter will permit you to move ahead. All of us involved share your concern of not wanting to seriously endanger port operations by unduly delaying the interim and permanent CDF sites developments.

23


MA 120:14 NCRIM-S

9 JUN 83 09 54

Colonel Hugh F. Boyd III  
Department of the Army  
Buffalo District, Corps of Engineers  
June 5, 1989  
Page 2

I have been in touch with Mr. Richard Mammoser of your office and appreciate the cooperation that has been accorded us in this matter.

Sincerely yours,



Anthony F. Fugaro  
RADM, USCG (Ret.)  
Executive Director

AFF:rmb

cc: City of Cleveland, Dept. of Port Control  
Ohio Dept. of Natural Resources  
Lake Carriers Association  
Flats OxBow Association  
Cleveland Waterfront Coalition

MAILED 8081M-6

26 JUN 89 11 41

June 16, 1989

**ODNR**

**OHIO DEPARTMENT OF  
NATURAL RESOURCES**

Fountain Square  
Columbus, Ohio 43224

Col. Hugh F. Boyd, III  
District Commander  
U.S. Army Engineer Dist., Buffalo  
1776 Niagara St.  
Buffalo, NY 14207

ATTN: Stephen Yaksich, Ph.D.

Dear Col. Boyd:

I am responding to your April 17, 1989 letter concerning the urgency for selecting a site for a new Confined Disposal Facility (CDF) for Cleveland Harbor. I would also like to apologize for my delayed response.

As I am sure you can appreciate, the Ohio Department of Natural Resources' preferred location for a new CDF remains the East 55th Street site. Only at this location could ODNR assure future public uses of the newly created land, thus meeting the legislative mandate to manage submerged Lake Erie lands for the optimum benefit of the citizens of Ohio. Such assurance is not directly available at the other proposed sites, including the Burke East site. The State of Ohio, however, is not prepared to provide the approximately \$8 million needed to cover the additional costs of constructing a 10-year facility at the E. 55th Street site plus the \$1 to 2 million of non-federal cost of the project. Therefore, with this financial limitation and the time constraints of the feasibility study for moving Burke Lakefront Airport, we will not oppose the proposed 10-year Burke East site.

However, for the CDF to be located at the proposed Burke East location, the City of Cleveland, as local cooperator, will have to provide the land by obtaining a submerged lands lease from ODNR. The City has not as yet applied for such a lease. Therefore, the State cannot act on the lease, nor give unqualified concurrence with any plan which has not been formally proposed by submitting a lease application pursuant to the Ohio Revised Code.

Proposed future uses of the newly created land should be water dependent or provide for public use, as determined by ODNR. This is consistent with the federal guidelines governing implementation of the Corps' regulatory program. If proposed future uses do not meet this requirement, the City may be required to mitigate the lost potential for water dependent or public uses by providing for such at some other location as a condition of the lease.

(25)

Richard F. Celeste, Governor

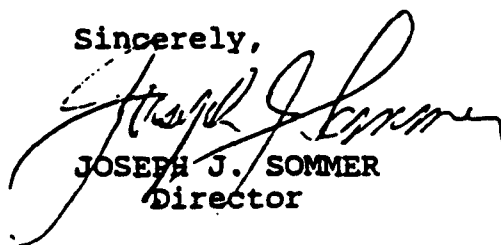
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Col. Hugh F. Boyd, III  
June 16, 1989  
Page 2

I hope this revised ODNR position is acceptable and will allow you to move forward with your planning. We acknowledge the importance to both the City of Cleveland and to Ohio of selecting an appropriate site for a new CDF in a timely manner. By copy of this letter, I am also notifying Jacqueline Shuck of our position and the need to obtain a submerged lands lease.

We also look forward to working with you further on the proposed 10-year Burke East site.

Sincerely,



JOSEPH J. SOMMER  
Director

JJS/ww

cc: Wayne Warren, Lake Erie Office  
Richard Bartz, Ohio Dept. of Natural Resources  
Bob Lucas, Ohio Dept. of Natural Resources  
Jacqueline Shuck, City of Cleveland, Dept. of Port Control

26 JUN 89 09 44  
MILWAUKEE-NCBIM-S



# City of Cleveland

GEORGE V. VOINOVICH, MAYOR

July 10, 1989



DEPARTMENT OF PORT CONTROL  
JACQUELINE L. SHUCK, DIRECTOR

5300 RIVERSIDE DRIVE  
CLEVELAND HOPKINS INT'L AIRPORT  
CLEVELAND, OHIO 44135-3193  
(216) 265-6000

Colonel Hugh F. Boyd III  
Department of the Army  
Buffalo District - Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207-3199

Attention: Mr. Stephen Yaksich

Subject: New Confined Disposal Facility at Cleveland, Ohio

Dear Colonel Boyd III:

In response to the request of your staff, please be advised that the City of Cleveland intends to act as the Local Cooperator ("L.C.") for the construction, filling and maintenance of the new Confined Disposal Facility ("C.D.F.") at the Cleveland, Ohio site referenced as Burke Lakefront Airport East.

In accordance with this intent, the City will enter into a Local Cooperation Agreement (L.C.A.) with the Army Corps of Engineers for the construction of this new C.D.F. provided that the City and the Corps can reach agreement on the terms of the L.C.A. and that an ordinance, authorizing the City to enter into such an Agreement, is passed by City Council.

Director Jacqueline L. Shuck of the Department of Port Control of the City of Cleveland, having administrative authority over Burke Lakefront Airport and the City Harbor, shall act on behalf of the City as our local contact. She can be contacted at the following address:

Jacqueline L. Shuck  
Director  
Department of Port Control  
Second Floor-Passenger Terminal Bldg.  
Cleveland Hopkins Int'l Airport  
5300 Riverside Drive  
Cleveland, Ohio 44135-3193

20 JUL 13 10 11  
MAIL ROOM - ICEPH-S

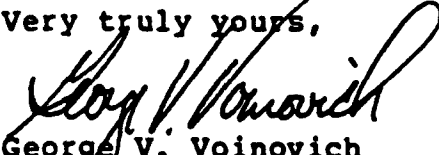
27

Page 2

July 10, 1989

Should you or your staff have any questions regarding this matter, please contact Director Shuck at (216) 265-6022 or her administrative assistant Ronald Toth at (216) 265-6049.

Very truly yours,

  
George V. Voinovich  
Mayor, City of Cleveland, Ohio

GVV/WRT/mam

cc: J. Shuck  
R. Toth  
Admiral Fugaro  
H. Morrison  
W. Warren



**NORTHEAST OHIO REGIONAL SEWER DISTRICT**  
3826 EUCLID AVENUE • CLEVELAND, OHIO 44115-2504 • 216-881-6600

August 2, 1989

U. S. Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, NY 14207

Attention: Stephen Yacksich

Dear Mr. Yacksich:

I am writing to express the District's concern about water quality problems which are likely to be created by the construction of a proposed Confined Disposal Facility (CDF) at the east end of the Burke Lakefront Airport in Cleveland, Ohio. The proposed project would almost completely enclose a portion of the Cleveland harbor which receives the wet weather discharge from at least three Combined Sewer Overflows (CSOs).

We are aware that your office has performed a preliminary study of the effects of the proposed project on circulation in the enclosed area. We appreciate the recent cooperation of your office to explain this effort. However, we are concerned about several aspects of this preliminary work.

First, the modeling study was confined to the projection of circulation patterns rather than addressing the impact on water quality from further enclosure of the adjacent near shore water body. Second, the circulation model used an average river flow as the only input parameter. The critical scenario which should be analyzed includes discharges from 3 major drainage catchments containing combined sewer overflows. Finally, the preliminary circulation study yielded flow patterns which are difficult to explain. We suggest that some on-site model validation work is needed.

The Northeast Ohio Regional Sewer District request that a detailed study be made of the effects of the proposed CDF facility on water quality in the enclosed water area. The preliminary engineering study should investigate a range of options to prevent any degradation of water quality.

NEORSRD would be willing to meet with the Corp to discuss these concerns and our suggestions in greater detail.

15 6 11 19 51  
S-110101-NORMAN-S

We request that we be kept informed of all work being done to assess potential water quality impacts which may result from the proposed project and of any conclusions you reach regarding this matter. Your cooperation in coordinating this project with us would be greatly appreciated. Questions or comments may be addressed to Lester Stumpe, Planning Manager or John Graves, Planning Engineer.

Sincerely,



Erwin J. Odeal  
Director

EJO/bb  
71701

cc: K. A. Pew  
W. B. Schatz  
C. J. Vasulka  
J. Sommers, ODNR  
J. Schuck, City of Cleveland  
H. Morrison, City of Cleveland  
L. Washburn, City of Cleveland





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Reynoldsburg Field Office  
6950-H Americana Parkway  
Reynoldsburg, Ohio 43068-4115  
(614) 469-6923

August 4, 1989

IN REPLY REFER TO:

Colonel Hugh F. Boyd, III  
District Engineer  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

Attention: Leonard Bryniarski

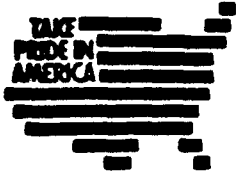
Dear Colonel Boyd:

This is our Draft Fish and Wildlife Coordination Act Report for the Burke East Confined Disposal Facility (CDF) in Cleveland Harbor, Cuyahoga County, Ohio. This report is provided per agreement No. NCB-IA-88-44JS. This report has been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973, as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy.

The Ohio Division of Wildlife has been provided with a copy of our report for their review. A copy of their letter of concurrence dated July 31, 1989 is attached.

### Project Description

The location of the proposed facility is near the eastern end of Cleveland Harbor, is rectangular shaped and would abut the filled Dike 12 CDF east of Burke Lakefront Airport (see Figure 1).



BE

12

# ODNR

OHIO DEPARTMENT OF  
NATURAL RESOURCES

August 10, 1989

Fountain Square  
Columbus, Ohio 43224

Col. Hugh F. Boyd, III  
District Commander  
U.S. Army Engineer District, Buffalo  
1776 Niagara Street  
Buffalo, New York 14207

Attention: Richard Mammoser

Dear Col. Boyd:

Deputy District Commander  
Engineering Div.  
Planning Div.  
Construction-Operations &...  
Regulatory Branch  
Program Development Ofc.  
Office of Counsel

10-11-89  
MAMMOSER

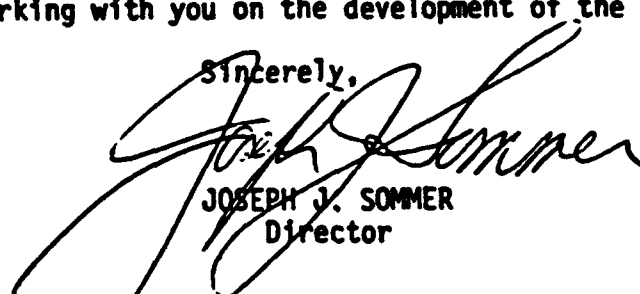
This letter is in response to your July 11 letter requesting my concurrence with the Burke East 20-year Confined Disposal Facility (CDF) for Cleveland Harbor dredging.

The Ohio Department of Natural Resources has concerns about accepting the proposed 20-year Burke East site. Because of our mandate to assure water dependent or public uses for the submerged lands of Lake Erie and any newly created land, there are strong reservations against committing a large parcel of submerged land for a 20-year CDF which could have a useful life of from 25-30 years, dependent on the "available" quantity of spoil material. Unknown but anticipated water quality improvements in the lower Cuyahoga River over the next 20 years hopefully will lessen the quantity of contaminated sediments which must be placed in a CDF, thus extending the useful life of any new CDF. Proposed sediment control programs will hopefully be implemented in the near future on the Cuyahoga river basin which could reduce the sediment load into the Cleveland Harbor by up to 25 percent. In addition, a major storm sewer outlet, which is also a combined sewer overflow, discharges in the vicinity of the eastern end of the proposed 20-year Burke East site. Water circulation impairments caused by the presence of the 20-year CDF could create adverse water quality conditions.

The department's position, i.e., supporting only a 10-year CDF, was stated in a meeting with Corps representatives on July 7, 1988 in Cleveland and in correspondence to you on September 2, 1988. However, to facilitate the airport expansion onto the new CDF and accommodate a longer life for the CDF we would be willing to consider a CDF with a life expectancy of 12-15 years. Our review would be based on the concerns stated above and final configuration. If this approach seems satisfactory to you we can discuss the project in more detail in the near future.

I look forward to working with you on the development of the Burke East CDF.

Sincerely,



JOSEPH J. SOMNER  
Director

JJS:ag

- cc: Wayne Warren, Executive Director, Lake Erie Office
- Richard Bartz, Ohio Department of Natural Resources
- Robert Lucas, Ohio Department of Natural Resources
- Jacqueline Shuck, City of Cleveland, Department of Port Control
- Colleen Crook, Ohio Environmental Protection Agency
- Carla Cefaratti, Ohio Department of Transportation
- Anthony Fugaro, Cleveland-Cuyahoga Co. Port Authority

Richard F. Celeste, Governor

BE

CONVERSATION RECORD

TIME 10:00 AM

DATE 9-12-89

TYPE

VISIT

CONFERENCE

TELEPHONE

INCOMING

OUTGOING

ROUTING

NAME/SYMBOL	INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

Ken Muller

ORGANIZATION (Office, dept., bureau, etc.)

USFWS  
Reynoldsburg, Ohio

TELEPHONE NO.

614-469-6928

SUBJECT

Burke East CDF (proposed)

SUMMARY

During recent telephone discussion with Mr. Muller, he advised that consideration be given to reducing potential for waterfowl botulism at this CDF through inclusion of habitat strategies <sup>in the design and maintenance of the CDF facilities</sup> to control environmental factors that could contribute toward either preventing or reducing potential for such <sup>future</sup> outbreaks.

ACTION REQUIRED

For information

NAME OF PERSON DOCUMENTING CONVERSATION

Lew Bryniarski

SIGNATURE

Lew Bryniarski

DATE

9-13-89

ACTION TAKEN

copy provided to Dick Mammosen, Study Mgr.

SIGNATURE

Lew Bryniarski

TITLE

Ecologist

DATE

9-13-89



BUFFALO DISTRICT, CORPS OF ENGINEERS  
1776 NIAGARA STREET  
BUFFALO, NEW YORK 14207-8100

REPLY TO  
ATTENTION OF

September 13, 1989

Project Management Section

SUBJECT: Cleveland Harbor Confined Disposal Area

Mr. Joseph J. Sommer  
Director  
Ohio Department of Natural Resources  
Fountain Square  
Columbus, Ohio

Dear Mr. Sommer:

This letter is in response to the concerns you expressed in your August 10, 1989 letter concerning the proposed Burke East site for a confined disposal area in Cleveland Harbor.

The projected 20-year capacity of the Burke East site was based on an annual disposal of 300,000 cubic yards of dredge material and a consolidation factor of 22 percent. From Attachment 1 it can be seen that the dredge quantities in Cleveland Harbor have dropped from 750,000 cubic yards per year in the late 1970's, to a present rate of 300,000 cubic yards per year. The quantities of dredge material have remained constant in recent years.

The 10-year Burke East site does not accommodate the future expansion at the Burke Lakefront Airport and is not supported by the City of Cleveland and the Port Authority.

I still feel that the 20-year plan best serves the long term navigation needs for Cleveland Harbor. However, in light of your concerns I will recommend a 15-year site (Attachment 2). The 15-year site will accommodate the Burke Lakefront Airport expansion and thus will be supported by the Port Authority and the City of Cleveland. I believe this site will be mutually acceptable to all concerned.

My Water Quality Section has completed a circulation study of the area which will be enclosed by the new disposal area (Attachment 3). They have determined there is no significant circulation in that area under present conditions, and that a new CDF will not have a significant effect on circulation patterns in the enclosed area. The primary mechanism for water exchange is a daily change in water levels. This water exchange will not be affected by the new CDF.

**Project Management Section**  
**SUBJECT: Cleveland Ohio Confined Disposal Facilities**

Please respond indicating your concurrence with the Burke East 15-year plan as described above.

A copy of this letter is been sent to The Port of Cleveland, Cleveland Cuyahoga Port Authority, ATTN: Mr. Anthony F. Fugaro, and the City of Cleveland, Department of Port Control, ATTN: Ms. Jacqueline L. Shuck.

My point of contact is Mr. Richard Mammoser of my Engineering Division who can be reached by calling (716) 879-4229.

Sincerely,

Hugh F. Boyd III  
Colonel, U.S. Army  
Commanding

Attachments



**DEPARTMENT OF THE ARMY**  
**BUFFALO DISTRICT, CORPS OF ENGINEERS**  
**1776 NIAGARA STREET**  
**BUFFALO, NEW YORK 14207-3100**

REPLY TO  
ATTENTION OF

Environmental Analysis Branch

JAN 11 1960

**SUBJECT: Cleveland Harbor, Cuyahoga County, Ohio. Continued Scoping  
Pertaining to a New Confined Disposal Facility (CDF).**

Dear Study Participant:

The U.S. Army Corps of Engineers, Buffalo District, is in the process of finalizing a study for a new dredged material disposal facility identified as "Burke East" in Cleveland Harbor, Cuyahoga County, Ohio.

Harbor sediment test results and coordination with the U.S. Environmental Protection Agency and the Ohio Environmental Protection Agency indicate that the vast majority of sediments that would be dredged from Cleveland Harbor can not be disposed of in an open lake site in Lake Erie based on USEPA Clean Water Act sediment quality criteria. The quality of the sediments is not expected to improve for some time into the future. Therefore, dredged material must continue to be disposed of in a confined disposal facility (CDF). The existing CDF, identified as Dike 14, is located approximately 2 miles east of the proposed CDF site and is reaching capacity. Limited extended use by raising the dike at the existing CDF site is being pursued; however, a new CDF is needed.

With the assistance of several State and local interests, a number of alternatives have been developed and evaluated for engineering and economic feasibility, environmental and social acceptability, and implementability. Some preliminary sites that were considered for disposal of dredged material are depicted on Figures 1 and 2 of the attached enclosure. After considerable coordination and evaluation with local interests, the Burke East site is being recommended for development of a new CDF. The proposed dike is described in the enclosure and Figures 3 and 4 of the enclosure depict the plan dimensions and typical section of the proposed dike, respectively.

Environmental Analysis Branch

SUBJECT: Cleveland Harbor, Cuyahoga County, Ohio. Continued Scoping  
Pertaining to a New Confined Disposal Facility (CDF).

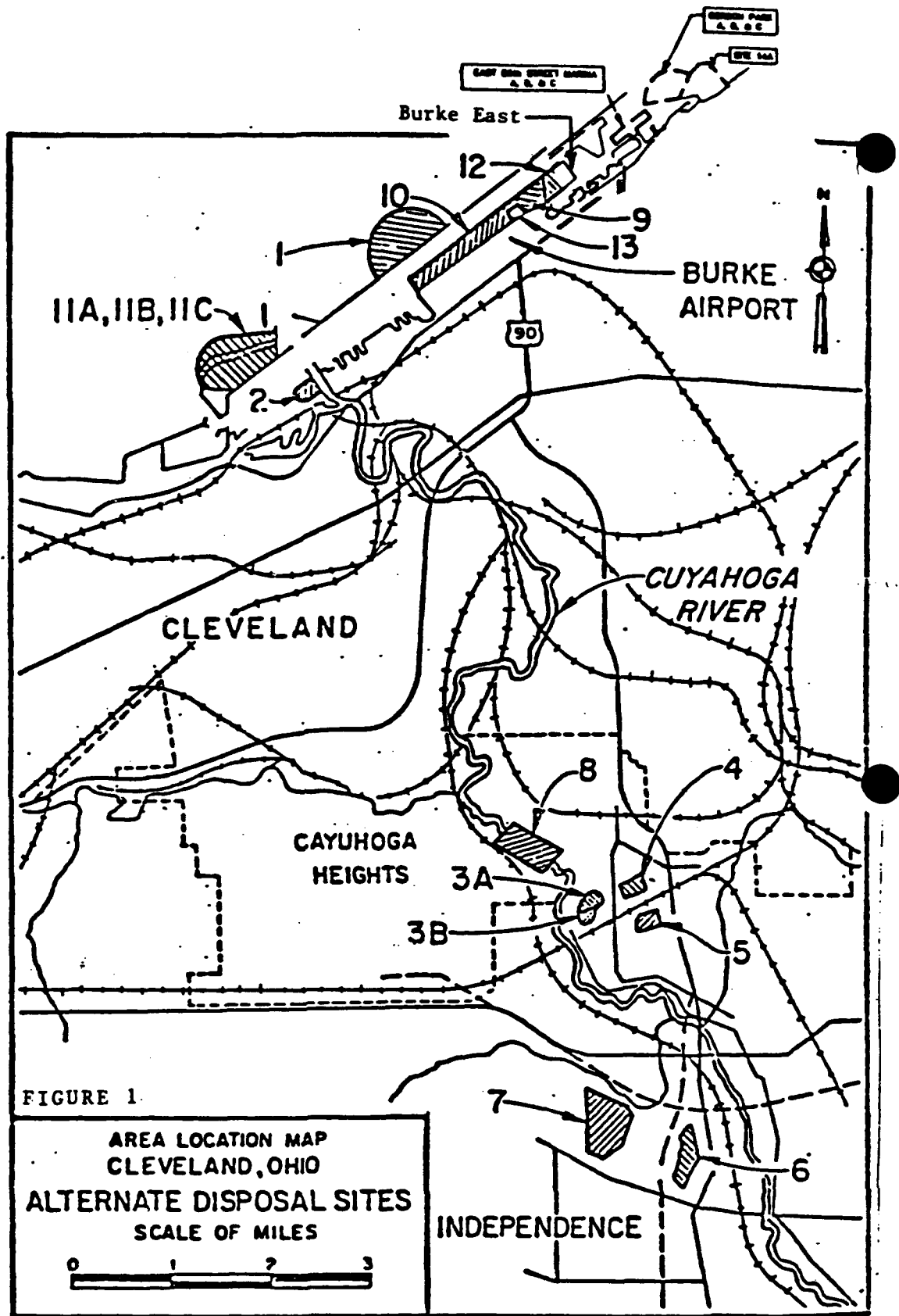
Please review the Enclosure; reference any previous comments you may have provided on the Cleveland Harbor New CDF Study; provide any updated information pertaining to your interests that you think we should know about; and provide any comments, concerns, or recommendations you may have. Your input will be used to prepare the updated planning documentation. Please provide any comments within 30 days of the date of this letter. Your assistance in this matter is greatly appreciated.

My point of contact pertaining to this matter is Mr. Tod Smith of my Environmental Analysis Branch, who can be contacted by calling 716-879-4173 or by writing to the above address.

Sincerely,

*John Zorich*  
John Zorich, P.E.  
Chief, Planning Division

Enclosure



Enclosure



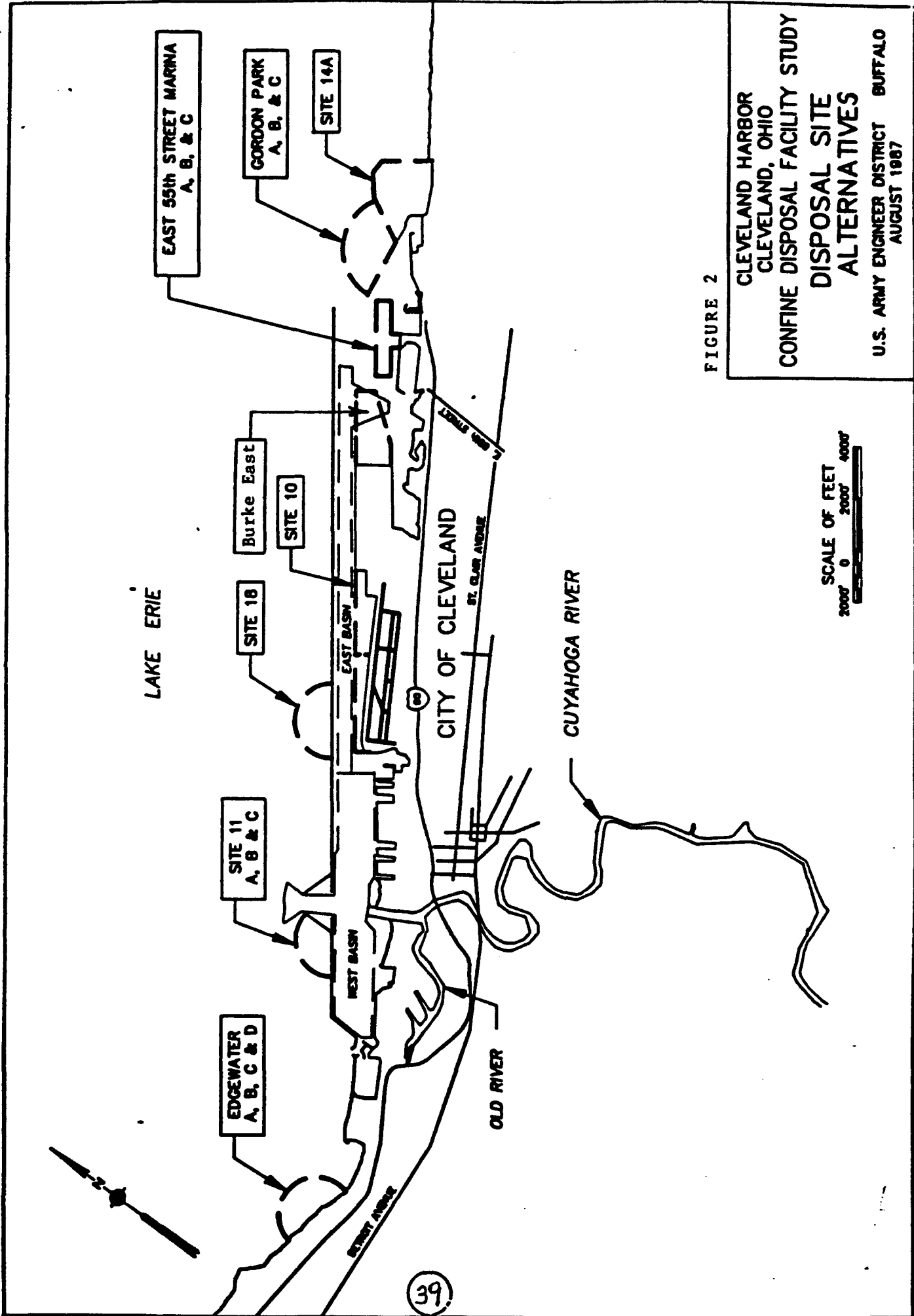


FIGURE 2

CLEVELAND HARBOR  
 CLEVELAND, OHIO  
 CONFINE DISPOSAL FACILITY STUDY  
 DISPOSAL SITE  
 ALTERNATIVES

U.S. ARMY ENGINEER DISTRICT BUFFALO  
 AUGUST 1987

SCALE OF FEET  
 2000' 0 2000' 4000'

39

CLEVELAND HARBOR, OHIO  
NEW CDF - PROPOSED PLAN

The proposed plan is the Burke East (15-year) confined disposal facility (CDF) dike plan located at Cleveland Harbor, Ohio, as shown on Figures 3 and 4. The service life of this site would be 15 years at an annual dredged material fill rate of 300,000 cubic yards and compaction rate of 0.78 (22% consolidation). Therefore, the usable volume for this CDF site would be approximately 3,510,000 cubic yards of dredged material. The added stone dike encompassing the 70 acre project site would have a total length of about 5,650 feet requiring about 507,244 cubic yards of stone material. The average depth of water in the project area is about 26 feet. The new dike crest elevation would match that of the adjacent site 12 CDF to which the new CDF is being added at 14 feet above low water datum. Figure 3 outlines the plan dimensions and shows water depths within which the CDF would be constructed. Figure 4 shows a typical cross section of the dike.

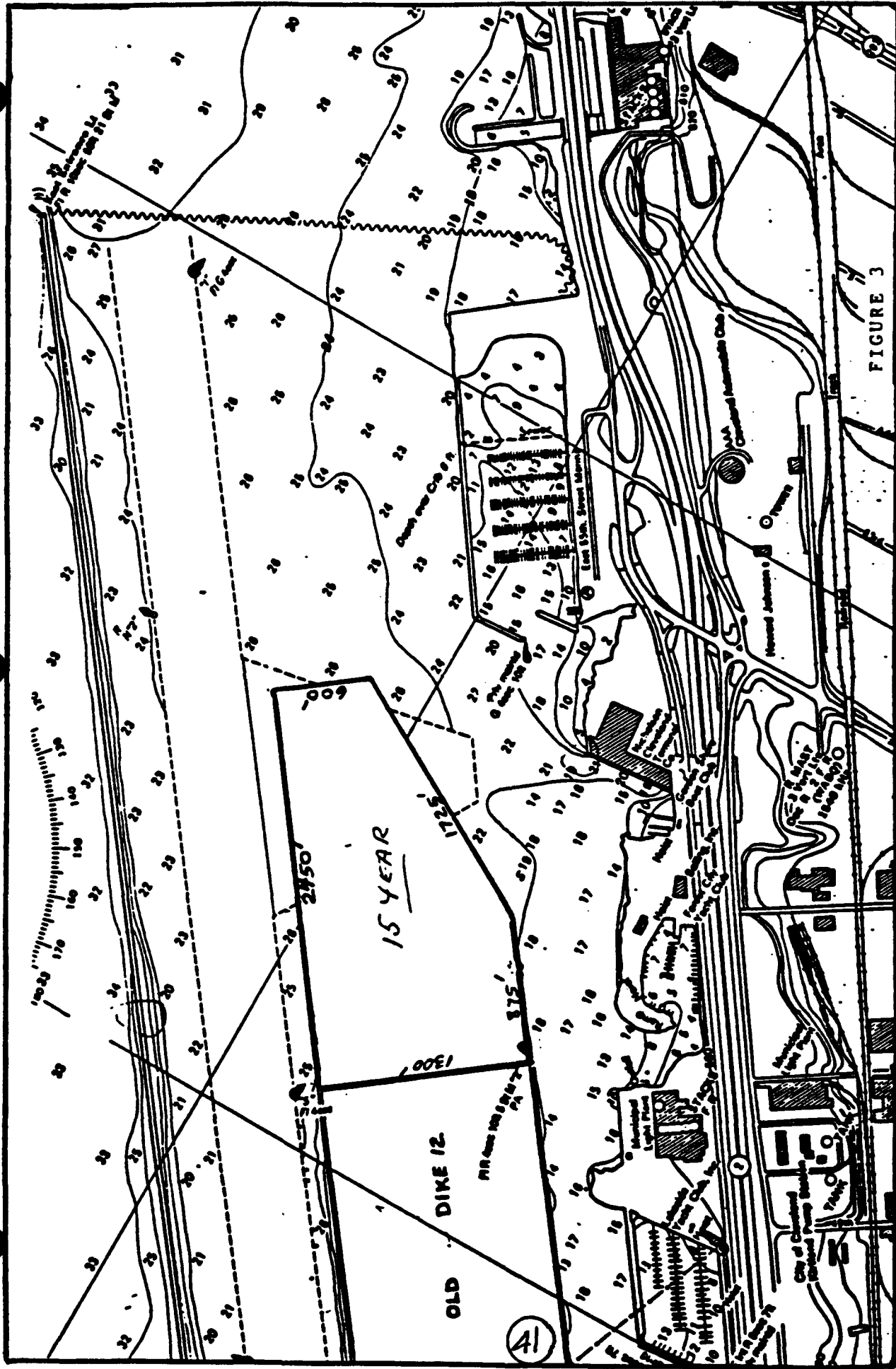


FIGURE 3

CLEVELAND HARBOR, OHIO  
 CONFINED DISPOSAL FACILITY  
 PLAN SCHEME  
 USA CORPS OF ENGINEERS  
 BUFFALO DISTRICT



This letter was sent to the following: \*

\* Ms. Sheila Minor Huff  
Regional Environmental Officer  
U.S. Department of the Interior  
Office of Environmental Project Review  
230 South Dearborn Street, Suite 3422  
Chicago, Illinois 60604

\* Director  
Federal Maritime Commission  
U.S. Department of Transportation  
668 Euclid Avenue  
Cleveland, Ohio 44114

Mr. Kent Kroonemeyer  
Field Supervisor  
U.S. Fish and Wildlife Service  
Division of Ecological Service  
6950-H Americana Parkway  
Reynoldsburg, Ohio 43068-4115

(Prev. Proj. Env. Coord.)

\* Mr. William J. Franz  
Chief, Environmental Review Branch  
Planning and Management Division  
U.S. Environmental Protection Agency  
Region V  
230 South Dearborn Street  
Chicago, Illinois 60604

\* Mr. Harry W. Oneth  
State Conservationist  
U.S. Soil Conservation Service  
200 N. High Street, Room 522  
Columbus, Ohio 43215

\* Mr. Don H. Castleberry  
Regional Director  
Midwest Region  
National Park Service  
1709 Jackson Street  
Omaha, Nebraska 68102

\* Capt. D. H. Ramsden  
Chief of Staff  
U.S. Coast Guard, 9TH District  
1240 East Ninth Street  
Cleveland, Ohio 44199

This letter was sent to the following (Cont'd): \*

\* Mr. Dwight Adams  
Environmental Clearance Officer  
U.S. Department of Housing and  
Urban Development  
200 North High Street - 7th Floor  
Columbus, Ohio 43215

Mr. Peter A. Serini  
Manager, Airports District Office  
U.S. Department of Transportation - FAA  
Willow Run Airport, East  
8820 Beck Road  
Belleville, Michigan 48111

(Prev. Proj. Man. Coord.)

\* State Clearinghouse  
State of Ohio - Office of  
Budget and Management  
30 East Broad Street - 39th Floor  
Columbus, Ohio 43266-0411

\* Northeast Ohio Areawide  
Coordinating Agency  
668 Euclid Avenue, 4th Floor  
Cleveland, Ohio 44114-3000

Mr. Robert L. Lucas  
Corps of Engineers Liaison  
Ohio Department of Natural Resources  
Fountain Square, Building D-2  
Columbus, Ohio 43224

(Prev. Proj. Man. Coord.)

Mr. Michael Colvin  
Environmental Review Administrator  
Ohio Department of Natural Resources  
Fountain Square, Building A-3  
Columbus, Ohio 43224

(Prev. Proj. Man. Coord.)

\* Mr. Doug Hasbruck  
District Chief  
Ohio Environmental Protection Agency  
Northeast Division Office  
2110 East Aurora Road  
Twinsboro, Ohio 44087

\* Dr. Richard Shank  
Director  
State of Ohio Environmental  
Protection Agency  
P.O. Box 1049  
1800 Watermark Drive  
Columbus, Ohio 43266-0149

This letter was sent to the following (Cont'd): \*

Mr. W. Ray Luce (Prev. Proj. CR Coord.)  
State Historic Preservation Officer  
Ohio Historic Preservation Office  
1985 Velma Avenue  
Columbus, Ohio 43211

Mr. Bernard B. Hurst, P.E. (Prev. Proj. Man. Coord.)  
Director  
Ohio Department of Transportation  
25 South Front Street  
P.O. Box 899  
Columbus, Ohio 43216-0899

\* Ohio Environmental Council  
22 East Gay Street, Suite 300  
Columbus, Ohio 43215-3113

Mr. Erwin J. Odeal (Prev. Proj. Man. Coord.)  
Director  
Northeast Ohio Regional Sewer District  
3826 Euclid Avenue  
Cleveland, Ohio 44115-2504

\* Board of County Commissioners  
County of Cuyahoga  
County Administration Building  
1219 Ontario Street  
Cleveland, Ohio 44114

\* Mr. Carl S. Bohm  
Director  
Cuyahoga County Regional Planning  
415 The Arcade  
Cleveland, Ohio 44114

Ms. Jacqueline L. Shuck (Prev. Proj. Man. Coord.)  
Director  
Department of Port Control  
Second Floor - Passenger Terminal Building  
Cleveland Hopkins International Airport  
5300 Riverside Drive  
Cleveland, Ohio 44135-3193

Mr. Anthony F. Fugaro (Prev. Proj. Man. Coord.)  
Executive Director  
Cleveland Cuyahoga County Port Authority  
101 Erieside Avenue  
Cleveland, Ohio 44114

This letter was sent to the following (Cont'd): \*

- Mr. Hunter Morrison (Prev. Proj. Man. Coord.)  
City Planner  
City of Cleveland  
City Hall, Room 501  
601 Lakeside Avenue  
Cleveland, Ohio 44114
- Mr. Paul Sverdersky (Prev. Proj. Man. Coord.)  
Executive Director  
Cleveland Waterfront Coalition  
The Arcade - Room 346  
401 Euclid Avenue  
Cleveland, Ohio 44114
- \* Mr. Stephen D. Coles  
Chief of Park Planning  
Cleveland Metroparks System  
4101 Fulton Parkway  
Cleveland, Ohio 44114
- \* Ms. Sook C. Reid (Information Copy)  
Cleveland Project Office  
U.S. Army Corps of Engineers  
Foot of East 9th Street  
Cleveland, Ohio 44114
- \* Mr. John Beeker  
Secretary  
Cuyahoga Coordinating Committee  
c/o NOACA, 4th Flood  
Atrium Office Plaza  
668 Euclid Avenue  
Cleveland, Ohio 44114-3000
- Mr. Gordon D. Hall (Prev. Proj. Man. Coord.)  
Vice President/Treasurer  
Lake Carriers Association  
614 Superior Avenue, NW  
915 Rockefeller Building  
Cleveland, Ohio 44113-1306
- Ms. Kathryn Jaksic (Prev. Proj. Man. Coord.)  
President  
St. Clair - Superior Coalition  
6408 St. Clair Avenue  
Cleveland, Ohio 44103



This letter was sent to the following (Cont'd): \*

- \* Lakeside Yacht Basin  
4851 North Marginal Drive  
Cleveland, Ohio 44114
- \* Forest City Yacht Club Basin  
5301 North Marginal Drive  
Cleveland, Ohio 44114
- \* Gordon Shore Boat Club  
5401 Cleveland Memorial  
Shoreway, NE  
Cleveland, Ohio 44102

MR. DARNELL BROWN  
COMMISSIONER  
WATER POLLUTION CONTROL  
PUBLIC UTILITIES COMMISSION  
1201 LAKESIDE  
CLEVELAND, OHIO 44114

— Sent copy  
2 Feb 90  
per request  
by Northwest  
Ohio Regional  
San. District  
General



# STATE CLEARINGHOUSE

## State of Ohio - Office of Budget and Management

30 EAST BROAD STREET • 34TH FLOOR • COLUMBUS, OHIO 43266-0411 • (614) 466-0697 / 0695

U.S. DEPT OF THE ARMY, ENVIRONMENTAL ANALYSIS  
1776 NIAGARA STREET, CORPS OF ENGINEERS  
BUFFALO NY 14207-3199

Attention: TOD SMITH

PHONE: (716)879-4173

RE: State Clearinghouse Intergovernmental Review-Application Receipt Letter

Project Title: ENVIRONMENTAL ASSESSMENT  
Project Description: CLEVELAND HARBOR, CUYAHOGA COUNTY, OHIO, CONTINUED  
SCOPING PERTAINING TO NEW CONFINED DISPOSAL FACILITY  
(CDF), BURKE EAST

State Application Identification (SAI) Number: OH900122-N044-36422  
Proposed Federal Funding: \$00

Dear Applicant:

The State Clearinghouse has received your notification for either a direct federal development project, environmental assessment/impact statement, or, an application for federal funds. The review process has begun at the State level and will be completed on 90-02-11.

A State Application Identification (SAI) number has been assigned to your project. Please refer to this number in all future contacts with the State Clearinghouse and the Area Clearinghouse(s). This number should also be forwarded to the funding agency, to become part of your application.

A copy of your application should have been submitted simultaneously to your Area Clearinghouse(s), which is(are):

CLEARINGHOUSE:  
NORTHEAST OHIO AREAWIDE COORDINATING AGENCY (NOACA)

Failure to do so could result in a negative review of your application.

Sincerely,

*Quila Wise*  
Project Coordinator



U.S. Department of Housing and Urban Development  
Columbus Office, Region V  
200 North High Street  
Columbus, Ohio 43215-2499

January 30, 1990

Mr. John Zorich, P.E.  
Chief, Planning Division  
Buffalo District, Corps of Engineers  
Department of the Army  
1776 Niagara Street  
Buffalo, New York 14207-3199

Dear Mr. Zorich:

This is in response to your letter of January 11, 1990, regarding the Corp of Engineers' study for a new dredged material disposal facility identified as "Burke East" in Cleveland Harbor, Cuyahoga County, Ohio.

The U.S. Department of Housing and Urban Development has concluded that neither the study, or the proposed "Burke East" facility, present any special interests and/or concerns to HUD.

Thank you for the opportunity to comment. If you should require any additional input from HUD, I may be reached at FTS 943-5617.

Sincerely,

Ross S. Carlson  
Environmental Officer



NOV 11 1989  
U.S. DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS

February 12, 1990

14 FEB 30 1990

Mr. John Zorich, P.E.  
Chief, Planning Division  
Department of the Army  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, NY 14207-3199

Dear Mr. Zorich:

RE: CLEVELAND HARBOR/BURKE EAST CDF

This letter responds to your letter of January 11, 1990 requesting comment on the above-captioned project. Please note that we commented previously on August 25, 1989 (see attached letter). Our comments are as follows:

- (1) It is not clear at what stage in the NEPA-environmental review process the Burke East CDF proposal currently stands. Please clarify this for us and in particular, identify the timetable for future CDF decision points, what NEPA requirements will apply at those decision points, and at what future stages in the process there will be opportunities for substantive public comment.
- (2) It is unclear what will be the water quality impacts of project implementation. We would appreciate an opportunity to review the data, analyses, and evaluation employed by the Corps to ascertain water quality impacts of Burke East.
- (3) It would appear that construction of a CDF at Burke East may exacerbate already poor water quality. Will the economic analyses of alternatives take into account the cost of mitigating this impact, such as the cost of relocating CSO's?
- (4) The Cuyahoga RAP Coordinating Committee appreciates the opportunity to comment on this project. As a public planning body appointed by the Ohio Environmental Protection Agency to develop a Great Lakes Water Quality Agreement mandated Remedial Action Plan for the Cuyahoga Area of Concern, we are responsible for addressing the issue of restoring beneficial uses in the area of concern including dredging operations. For this reason we look forward to the opportunity to continue to participate in the Burke East CDF study.

Mr. John Zorich, P.E.  
February 12, 1990  
Page -2-

I can be reached at (216) 241-2414, Extension 250, if you have any questions.

Very truly yours,



John Beeker, Secretary  
Cuyahoga RAP Coordinating Committee

JB/jy/1479E

Attachment

August 25, 1989

Mr. Steve Yaksich  
U.S. Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, NY 14202

Dear Mr. Yaksich:

I am writing to acknowledge the Corps' effort in its informative and thought-provoking presentation at the June meeting of the Cuyahoga Remedial Action Plan Coordinating Committee regarding the dredging operations and the proposed confined sediment disposal facility in the Cleveland Harbor area. As a follow-up on your offer, the Committee would like to review the data used in determining the impacts of each of the presented alternatives and upon which the presentees based their general environmental statements.

You could be most helpful to us if you could supply information in the following areas. First, we would like to receive the written documentation, including data, for the proposed disposal options. This would include capacity, location, benefits and costs of the current containment facilities, and of those alternatives most likely to be chosen for future use. Secondly, we are interested in learning more about the technical basis for the Corps' conclusions on water quality in the river and harbor areas both as it is now and with the preferred alternative constructed. The technical information requested includes qualitative samples, quality projections and any modeling results. These data would allow the RAP Committee to better understand the current situation and the values assigned to the various alternatives as presented by Messrs. Dick Leonard and Richard Mammoser on June 22, 1989. The requested information can be sent to Mr. John Beeker, Secretary, Cuyahoga Coordinating Committee, c/o NOACA, 4th Floor Atrium Office Plaza, 668 Euclid Avenue, Cleveland, Ohio 44114-3000.

As you know, one of the major goals of the RAP is to improve the water quality in the Cuyahoga basin and Cleveland Harbor areas. The RAP Committee is striving to educate itself on all aspects of the various projects proposed for the river/harbor area, to guard against any project that is a set-back to the restoration of clean water, to promote any project that aids in that restoration, and to be actively involved in decision-making processes. Therefore, the RAP Committee has a keen interest in participating in the Environmental Assessment and/or Environmental Impact Statement processes for the dredging and disposal operation proposed by the Corps.

In closing, we thank you for the effort you have made in the past to keep us updated and informed on your projects, and we hope that this can continue.

Very truly yours,



Greg Studen  
Chairman, Cuyahoga Coordinating Committee

GS/mal/1308E

52



**NORTHEAST OHIO REGIONAL SEWER DISTRICT**  
3826 EUCLID AVENUE • CLEVELAND, OHIO 44115-2504 • 216-231-2300

February 12, 1990

Mr. Tod Smith  
Environmental Analysis Branch  
U. S. Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, N.Y. 14207

Dear Mr. Smith:

This letter is written in response to your solicitation of issues to be considered in an EIS study for the Cleveland Harbor New Confined Disposal Facility at the Burke East site. Although we had requested to be kept apprised of developments for this project, we did not receive a copy of your letter directly. We request again that we be added to your mailing list for such notices. We do appreciate your flexibility in allowing us, and others in this area, extra time to provide comment (i.e., your phone conversation of 2/2/90 with Betsy Yingling).

We are enclosing a previous letter of August 2, 1990 (Attachment A) which expresses some of our concerns about the proposed CDF site. As mentioned in this letter, there are three major discharges which carry combined sewage and which empty into the harbor area to be enclosed by the CDF dike. We feel that the construction of this dike will restrict water circulation and reduce the natural seiche effect of the lake. This may have a detrimental effect on both the water quality and the rate of sediment deposition within the basin. Enclosed is a map showing the location of the outfalls in the harbor area (Attachment B).

We are concerned that the modeling done to date by the Corps of Engineers has only looked at water circulation, and the model itself has not been calibrated by any on-site validation. We are also concerned with the use of a permeable rubble mound structure for the dike, without the sheet pile core which is currently used at Site 14. A permeable structure will allow water infiltration, which may create further adverse impacts on the water quality.

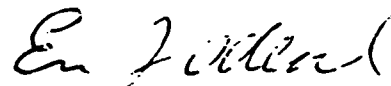
Following our August 2 suggestion that water quality modeling should address the impact of these discharges, we performed initial discharge quantification studies. The data from these studies is included as Attachment C. While this data represents a limited time period, it does demonstrate that these discharges can carry a substantial pollutant load.

We believe that a study of the feasibility for developing the Burke East site should begin with a base line study of existing water quality in the area that would be enclosed. Water quality modeling should then be performed to determine what impact new proposed facilities would have. Your study should investigate a range of measures which may have to be applied at any of the sites under consideration to mitigate water quality impacts. For instance, in some cases the relocation of discharge outfall pipes may be required.

Our concern about the potential of the proposed project to cause water quality violations has been substantially increased as a result of action on February 2, 1990 by Ohio EPA to upgrade Water Quality Standards for the area in question. Previously the area which will be affected by this project was a Lake Erie "excepted area" and had a special designation status. This recent action by the Ohio EPA upgrades the use designation in several ways. Exceptional Warm Water Habitat criteria are now applicable in place of the previous Warm Water Habitat criteria and Bathing Water criteria now apply in place of Primary Contact Recreation criteria. The designation of "State Resource Water" was also added. This latter designation may regulate any action which would cause any further degradation to water quality or the aquatic community. Enclosed are relevant sections of the revised Water Quality Standards (Attachment D).

In closing, we would like to reiterate our offer of our August 2, 1989 letter to meet with you to discuss these concerns in detail. Further, we believe that there is enough substantial concern about the water quality impacts of this project to warrant holding a general local meeting on the issue. Please contact Lester Stumpe, Planning Manager, in this regard.

Sincerely,



Erwin J. Odeal  
Director

EJO:mm.  
Enclosures  
Q282COMM

cc: D. Wegrich, City of Cleveland  
S. Yacksich (COE)  
G. Studen, Cuy. Coordinating Committee  
J. Sommers (ODNR)  
L. Stumpe (NEORS)





# City of Cleveland

MICHAEL R. WHITE, MAYOR



ALL-AMERICA CITY

7 MAR 90 09 56

MAIL ROOM - NC81M-S

DIVISION OF WATER POLLUTION CONTROL  
1825 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114

DEPARTMENT OF PUBLIC UTILITIES

W. DALE WEGRICH  
DIRECTOR

DARNELL BROWN  
COMMISSIONER

February 28, 1990

Mr. Todd Smith  
Environmental Analysis Branch  
U.S. Corp. of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, NY 14207

Dear Mr. Smith:

I am writing to you as a result of your invitation to comment on issues relative to the proposed Confined Disposal Facility (CDF) at the Burke East site. This proposed CDF site is necessitated as a result of the existing CDF, identified as dike 14, approaching full capacity.

I am concerned that the proposed project will further enclose the Cleveland Harbor and possibly further contribute to degradation of water quality in that area. As you know, there are three major combined sewer overflow outfalls in the vicinity of the proposed project. There is a serious question as to whether the site, as it now exists, lends itself to adequate circulation of lake water. I cannot convey strongly enough my concern that further enclosure will have a debilitating affect on the natural seiching effect of the lake. With the water quality issues we are presently facing, as a result of the re-authorization of the Clean Water Act (1987), leading to the advent of New Stormwater Quality Regulations and the Combined Sewer Overflow legislation pending, I am concerned that further enclosure of this area may prove environmentally and eventually economically more costly to comply with related mandates.

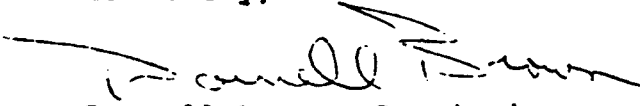
It is my understanding that some modeling has been done to review water circulation patterns. Did this modeling take into account the impact upon the water quality caused upon the receiving waters as a result of overflow events. To do so would mean that the Corps would have done some extensive flow monitoring of those outfalls, or relied upon flow monitoring data for the three outfalls that Northeast Ohio Regional Sewer District (NEORS) has in its possession. Not taking into account, this data would be a critical mistake in the modeling process.

Mr. Todd Smith  
February 28, 1990  
Page 2

There are some additional concerns which I think are noteworthy regarding this issue. For instance, the Ohio EPA has upgraded the water quality standards for the area in question, effective February 2, 1990. The criteria for exceptional warm water habitat and bathing water, are now applicable. Assuming a position that there is little or no additional environmental impact should not be acceptable. All alternatives, relative to a CDF site that will eliminate, or at the very least mitigate negative water quality impacts, ought to be pursued.

Finally, I do appreciate your extending this opportunity for me to comment on the proposed disposal site, and request that this office continue to be notified of any progress in this area. This is by virtue of the fact we are the entity within the City of Cleveland's municipal government whose responsibilities are clearly associated with this proposed project as an environmental issue.

Sincerely,



Darnell Brown, Commissioner  
Water Pollution Control

cc: W. Dale Wegrich, Director  
Erwin Odeal, Director, NEORS  
Lester Stumpe, NEORS  
Francis Toldy, Consulting Engineer  
File



United States Department of the Interior

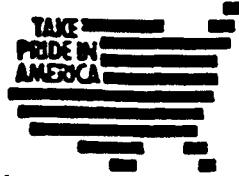
FISH AND WILDLIFE SERVICE

6950-H Americana Parkway  
Reynoldsburg, OH 43068  
614/469-6923

March 8, 1990

IN REPLY REFER TO:

BE



Colonel Hugh F. Boyd III  
District Engineer  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

12 MAR 90 10 35

MAILROOM-NCBIM-9

Dear Colonel Boyd:

This supplements our August 4, 1989 Draft Fish and Wildlife Coordination Act Report on the proposed Burke East Confined Disposal Facility (CDF) at Cleveland, Cuyahoga County, Ohio. This supplement is necessary since the size and life expectancy of the proposed CDF has been changed. Our draft report and recommendations was based on the proposed 81 acre, 20 year CDF located at the east end of Burke Lakefront Airport. The CDF is now proposed to be 60 acres and have a life expectancy of 15 years, at the same location. All of the recommendations contained in our draft report are still applicable to the currently proposed CDF.

This supplement has been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973, as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy.

We appreciate this opportunity to provide the above comments.

Sincerely yours,

*Kent E. Kroonemeyer*  
Kent E. Kroonemeyer  
Supervisor

cc: Chief, Ohio Division of Wildlife, Columbus, OH  
ODNR, Outdoor Recreation Service, Attn: M. Colvin, Columbus, OH  
Ohio EPA, Water Quality Monitoring (L. Merchant), Columbus, OH  
U.S.EPA, Office of Environmental Review, Chicago, IL

REC'D  
MAR 12 11 21 AM '90



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-3020 Fax (614) 644-2329

MAILROOM-NCBIM-S

Richard F. Celeste  
Governor

12 MAR 90 10 44

March 8, 1990

Mr. Tod Smith  
Environmental Analysis Branch  
Buffalo District  
Army Corps of Engineers  
1776 Niagara St.  
Buffalo, N.Y. 14207-3199

RE:C.D.F. at Burke East, Cleveland Harbor

Dear Mr. Smith:

Per your letter dated January 11, 1990, the Ohio EPA offers the following comments regarding the continued planning for the Burke East C.D.F. project. The Ohio EPA Division of Water Quality Planning and Assessment has historically approved the use of Confined Disposal Facilities (C.D.F.) for the disposal of contaminated dredged material from Cleveland harbor as part of the Army Corps of Engineers' annual harbor dredging activities. Most of the sediment material in Cleveland harbor is unsuitable for open lake disposal. In the absence of other reuse alternatives, a new C.D.F. is an acceptable solution to providing more confined disposal space for contaminated material. However, like the Ohio Department of Natural Resources, Ohio EPA is concerned about the proliferation of disposal facilities that take up shallow water habitat along the Lake Erie coast.

Ohio EPA would like to see the complete rationale, in particular the environmental reasoning for choosing the proposed site over the other alternatives. We have some concerns about water quality that may be degraded as a result of a CDF development in this particular area. Water circulation may be hindered, and obstruction of sewer overflow is possible. These concerns should be addressed and solved before location plans are finalized.

Once an acceptable site is chosen, the C.D.F. should be designed to minimize area, and maximize height to lessen environmental impact. With increasing height and slope, special consideration must be given to stabilization to prevent any material from reentering the water.

Water quality in ponded areas during and between spoiling operations should be carefully monitored for Clostridium botulinum toxin, and mobility of metals and other contaminants. Steps should be taken to minimize the availability of these toxic contaminants to transient and endemic bird populations.

Thank you for the opportunity to comment on this matter.

Sincerely,

Richard L. Shank, Ph.D.  
Director

58

# ODNR

OHIO DEPARTMENT OF  
NATURAL RESOURCES

Fountain Square  
Columbus, Ohio 43224

12 MAR 90 10 35  
MAIL ROOM - NC81M-S

March 5, 1990

John Zorich, P.E., Chief,  
Planning Section  
U.S. Department of the Army  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, NY 14206-3199

RE: Cleveland Harbor, Cuyahoga County, Ohio  
Continued Scoping - New Confined Disposal Facility

Dear Mr. Zorich:

The Ohio Department of Natural Resources (ODNR) has reviewed your continued scoping request on the above referenced proposal to construct a new Confined Disposal Facility (CDF) identified as "Burke East" in Cleveland Harbor, Cuyahoga County, Ohio. The new CDF would encompass 70 acres and would be able to accommodate approximately 3,510,000 cubic yards of dredged material. The new CDF would be adjacent to the current site 12 CDF. The perimeter of the new facility would be a dike constructed from about 507,000 cubic yards of stone material.

These comments were generated by an inter-disciplinary review in consultation with the Divisions of Geological Survey, Parks and Recreation, Water, Watercraft, and Wildlife. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the National Environmental Policy Act and other applicable laws and regulations.

In previous correspondence ODNR has indicated concurrence with your recommendation of the Burke East 15-year CDF. This concurrence is based upon the Corps' willingness to recommend an estimated 15-year capacity site and on the determination that water circulation patterns will not be adversely affected in the area enclosed by the new structure. However, we recommend that the following concerns be addressed in the final studies and environmental document which should be sent to the resource agencies and local interests for review.

City storm sewer water enters the harbor and any slack water created by the extension of Burke East could cause higher concentrations of pollutants and increased bacteria rates in the harbor than are currently being found. ODNR wants to ensure that water stagnation on our properties as well as degradation of water quality along this section of the Cleveland waterfront will not become a problem.

As you know, a Remedial Action Plan (RAP) is being prepared for the Cuyahoga River Area of Concern (AOC). Baseline water quality data and modeling developed by the Corps may be useful in the development of the RAP which, when completed, will direct remedial actions for correcting point and nonpoint sources of pollution. Bob Wysenski is the RAP Coordinator for Ohio EPA. (Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087).

59

Richard F. Celeste, Governor

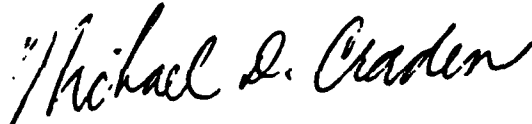
Mr. John Zorich  
March 5, 1990  
Page Two

In the mid-1980's one of our properties, Forest City Yacht Club, sustained considerable damage when storm waves generated by northeast winds overtopped and eroded the club's breakwater. While the new CDF could provide additional protection for our facilities from storms out of the north and northwest, there appears to be no added protection for storms coming from the northeast.

The loss of 70+ acres of open water within Cleveland Harbor represents a significant impact on the availability of recreational resources and on the aquatic resource itself. The construction of Burke East could result in the loss of safe water refuge space within the harbor basin. These losses should be mitigated on or off-site depending on the mitigative measure(s) selected. It is our recommendation that all mitigative measures be developed through coordination with state and federal resource agencies and local interests.

Thank you for the opportunity to provide these comments. If you have any questions or need additional information, please contact Mr. Dave Bergman, Environmental Review Coordinator at (614)265-6410.

Sincerely,



Michael D. Craden, Chief  
Office of Outdoor Recreation Services

MDC/DB:ag

cc: Linda Wise, State Clearinghouse (w/attach)  
Kent Kroonemeyer, USFWS  
Linda Merchant, Ohio EPA  
USEPA, Chicago  
Bob Lucas, Office of the Chief Engineer  
Wayne Warren, Lake Erie Office  
Stan Spaulding, Chief, Division of Parks & Recreation  
Eric Metzler, Division of Watercraft  
Don Guy, Division of Geological Survey  
Bill Mattox, Division of Water  
David Bitters, State Lands Planning, Office of Outdoor Recreation Services  
Division of Wildlife Environmental Section



## THE FOREST CITY YACHT CLUB

5301 NORTH MARGINAL ROAD  
CLEVELAND, OHIO 44114

17 SEP 90 13 01  
MAIL ROOM  
CENCB-INT-S

Col. Hugh F. Boyd  
Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, New York 14207

Dear Colonel Boyd:

As a member of Forest City Yacht Club, I am strongly opposed to the proposed dike expansion at the east end of Burke Lakefront Airport for use as a dump-site facility.

My reasons for opposing this plan include concern for water quality within the basin, the potential toxic seepage, and the overall unsightly appearance this would present.

Sincerely,

*Sherald A. Kille*  
Forest City Yacht Club Member

18/90

SEP 11 2 30 PM '90

(62) dup of (61)

28 Nov 90

## MEMORANDUM FOR RECORD

*Probably of interest to you.*  
*John Z. 12/14*

SUBJECT: Review of Harbor Circulation Evaluation for Cleveland Harbor, Ohio, Confined Disposal Facility (CDF)

1. The U.S. Army Engineer Waterways Experiment Station (WES) was requested through the Dredging Operations Technical Support (DOTS) Program to review a study of the subject conducted by CENCB and an evaluation of the study by Dr. Bedford of Ohio State University. This MFR contains WES' comments and recommendations. These review comments are general and brief and do not go into the detail that was provided by Dr. Bedford in his review.
2. We agree with Dr. Bedford that the study conducted by CENCB does not adequately address the potential impacts on water quality of the proposed project. It is also our opinion that the proposed project may have a detrimental impact on water quality within the harbor between the CDF and the shore. This potential impact is due to the reduced circulation imposed by the proposed CDF and the presence of wastewater discharges within this area. The study did not adequately address circulation and avoided the issue of water quality, which also should have been addressed through modeling.
3. Specific comments to reinforce Dr. Bedford's review include:
  - a. Grid structures for both CDF 20 and CDF 15 applications are inadequate for proper representation of horizontal circulation within the harbor and, particularly, for project conditions. This adopted grid structure will not permit valid calculation of flushing characteristics.
  - b. Wind and seiche forcing are important components to the circulation and flushing of the harbor. A proper analysis with these effects should be made.
  - c. Processes occurring in the harbor are three-dimensional, especially with the project in place since flushing will most likely be reduced and stratification could intensify. Circulation and flushing will be dominated by two-layer flow under wind/seiche forcing. A two-dimensional, vertically-averaged model is inappropriate for analyzing these processes.
  - d. Water quality must be modeled. The water quality model should use the same grid as the hydrodynamic model and can be indirectly linked (e.g., hydrodynamics are processed and saved for subsequent use in water quality model simulations). Update intervals for the hydrodynamics used in the water quality model should be frequent enough (e.g., one hour intervals) to preserve transport processes.
4. It appears that this proposed CDF site will have to be properly evaluated before local sponsorship will be granted. Therefore, sufficient funding will have to be made available for proper restudy or an alternate CDF site might have to be considered. If this site is retained, it is our recommendation



CEWES-ES-Q (70-1r)

28 Nov 90

SUBJECT: Review of Harbor Circulation Evaluation for Cleveland Harbor, Ohio  
Confined Disposal Facility (CDF)

that the project be restudied incorporating as many of Dr. Bedford's suggestions as economically feasible. The technology now exists for three-dimensional, time-varying hydrodynamic and water quality modeling. This site may be data limited, thus limiting the utility of models. If this is the case, it may be advisable to collect a synoptic data set next summer.

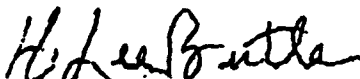
5. These steps should be taken if this site is to be restudied:
- a. Assess existing data;
  - b. Form an interagency technical review panel (TRP) to guide the study;
  - c. Have the TRP write a scope of work for restudy;
  - d. Plan and conduct data collection effort if required; and
  - e. Conduct model studies in an open arena where progress is reported to the TRP.

The procedure outlined above is the approach being taken by CENCE for the Kidney Island CDF expansion in lower Green Bay with assistance from WES. The Green Bay project was studied previously, but strong environmental opposition to the project has delayed permitting and construction. The open forum approach and TRP committee will go a long way in providing hard evidence on potential impacts from the expanded CDF and will facilitate the permitting process.

6. Costs of a restudy are difficult to assess because of the possibility of data collection. It is not possible to estimate data collection needs without reviewing existing data and site characteristics. For further assistance or discussion, we can be reached at FTS 542-3517 (commercial 601/634-3517) and FTS 542-2405 (commercial 601/634-2405), respectively.



Mark S. Dortch, PhD, PE  
Chief, Water Quality Modeling Group  
Environmental Laboratory



H. Lee Butler  
Chief, Research Division  
Coastal Engineering Research Center

(64)



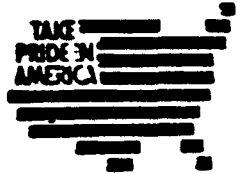
IN REPLY REFER TO:

# United States Department of the Interior

FISH AND WILDLIFE SERVICE

Reynoldsburg Field Office  
6950-H Americana Parkway  
Reynoldsburg, Ohio 43068-4115  
(614) 469-6923

March 25, 1991



BE

Colonel John W. Morris  
District Engineer  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

Dear Colonel Morris:

This is our final Fish and Wildlife Coordination Act report for the Burke East Confined Disposal Facility (CDF) in Cleveland Harbor, Cuyahoga County, Ohio. This report is provided per Agreement No. NCB-1A-88-44JS and concludes our obligation under that agreement. This report has been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973, as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy.

The location of the proposed facility is near the eastern end of Cleveland Harbor, is rectangular shaped and would abut the filled Dike 12 CDF east of Burke Lakefront Airport. The original size of the proposed CDF was 37 acres. On March 9, 1989 we were informed by the Corps staff that the site had been expanded to cover an area of approximately 81 acres. In March 1990 we were informed by the Corps that the site was reduced to a 60-acre site with a life expectancy of 15 years. In early 1991 we were informed that this site was no longer under consideration and the Corps would reconsider Site 10 which is adjacent to the north side of Burke Lakefront Airport.

## Fish and Wildlife Resources

The fish and wildlife resources of the project area are discussed in our August 4, 1989 Draft Fish and Wildlife Coordination Act Report and in the May 26, 1989 Biological Report.

## Discussion and Recommendations

The development of plans and alternatives for the future disposal of dredged materials at Cleveland was initiated at a meeting on February 26, 1985 in Cleveland. At that time numerous options were examined. The alternatives included: (1) raising the height of the currently used CDF (Site 14); (2) upland site near Cuyahoga Heights; (3) Site 10, adjacent to Burke Lakefront Airport; and (4) Site 1, outside of Cleveland Harbor

65

breakwater. Since then, sites have also been considered at Edgewater Park, 55th Street Marina, and Gordon Park. For one reason or another (usually economical), all other sites have been dropped from consideration except the "Burke East" site. But now Site 10 is under further consideration.

In the spring of 1988 we agreed to do limited biological study (primarily benthos and fish) of the Burke East proposed CDF site. At that time, we were looking at a 37-acre site. On March 9, 1989, we were informed that the site had been expanded to cover 81 acres. We took some sediment samples in the expanded area and the sediments appeared to be similar to sediment samples taken from the 37-acre site which were processed and reported in our May 26, 1989 Biological Report. Therefore, we believe the benthic organisms in the entire 81 or 60-acre site are similar to those we found in the 37-acre site. We also believe that fish use in the 81 or 60-acre site is similar to what we found in the 37-acre site.

Since the site does not provide any shallow water area, the spawning use of the area would be limited primarily to the riprap dike at the east end of Dike 12. The bottom material (silt-clay) is probably not used as a spawning area for fish species we found in the area. Thus, the primary value of the area is the 22 to 26-foot water column which produces phytoplankton and zooplankton earlier than in the open lake due to the higher water temperature in the harbor area. This primary and secondary productivity becomes a food source for an assortment of aquatic invertebrates such as oostrocods, cladocerans, copopods, amphipods, and chironomed larvae. These small invertebrates and the plankton community are a food source for larger aquatic insects found primarily on the riprap and certain fish species such as gizzard shad, troutperch, and minnow specie (Notropis). These fish species in turn become prey for game fish such as yellow perch, walleye, rock bass, and smallmouth bass. Thus, these protected waters in the harbor are an important location for early aquatic productivity in the lake. The CDF will also eliminate 60+ acres of open water habitat used by waterfowl, gulls, and other water associated birds. The CDF will also eliminate 60+ acres of protected waters used by recreational boaters, wind surfers, and fishermen.

The size and configuration of the proposed CDF reduces the opening between the CDF and the breakwater for the East 55th Street Marina. We believe this will have an adverse effect on water circulation conditions for the area west of the East 55th Street Marina and south of the existing and proposed CDF. We recommend that the Corps investigate this possible water circulation problem.

Since it would not be practical to replace the loss of 60+ acres of open water habitat (in-kind) in Cleveland Harbor, it will be necessary to mitigate the impacts out-of-kind. The dike of the CDF could provide shoreline fishery opportunity in Cleveland Harbor if access and parking were provided. Since the proposed CDF abuts an existing, filled CDF, we request that a portion of proposed and/or filled CDF dike be developed for shoreline fishing opportunity. We have several recommendations for mitigation which are out-of-kind and may be located on-site or off-site. One type of mitigation could be the construction of spawning shelves in the protected area between the proposed CDF and the shoreline. These spawning shelves would be 2 to 4 feet below low water datum 568.6. The surface of the spawning shelves would consist of a gravel substrate placed over larger stone adjacent to the CDF dike or in existing shallow water areas along the shoreline. A variety of fish species would use them, including walleye, smallmouth bass, rock bass, bluegill sunfish, pumpkinseed sunfish, white suckers, yellow perch, and white perch. We have not surveyed the area between the proposed CDF and the shoreline for possible spawning shelf sites, but are confident some could be found.

(66)

An off-site, out-of-kind mitigation measure could be the correction of some serious bank erosion problems along the Cuyahoga River or tributary streams. Erosion control practices could also be implemented on some areas adjacent to the Cuyahoga River in upstream areas which have been identified as providing significant sedimentation in the Cuyahoga River. The CDF is being constructed to contain polluted dredged material. If the amount of material moving into the maintained channels can be reduced, this would reduce needed dredging and the size of the CDF could also be reduced or the life-expectancy extended.

In this same vein, another mitigation recommendation would be for the Corps of Engineers to construct some sediment traps upstream of the navigation channel in the Cuyahoga River. These sediment traps would need to be substantial in size due to the amount of sediments that are carried in the Cuyahoga River. However, if these sediment traps were constructed upstream of the major industrial users, the sediments may be non-polluted or only slightly polluted. The sediments would also consist (we assume) of primarily coarse and fine sands. These sediments could then be dredged and reused, maybe on a commercial basis. The dredging could take place on a yearly basis or on a continuous basis if several sediment traps are constructed. With these sediment traps, the amount of polluted dredged material coming from the navigation channels could be substantially reduced, thus decreasing the need for a 60-acre CDF or extending the life past 15 years for the proposed site.

We are somewhat concerned with the proposed stone construction of the containment dike for the Burke East CDF. It would appear that the dike would be very porous and thus allow the passage of toxic and/or carcinogenic material from the CDF to surrounding waters. It would seem that a more impermeable dike should be constructed to contain the contaminated material being placed in the CDF. Would it be practical or possible to incorporate some type of filter cloth within the core of the dike where the smallest stone is placed? A clay core dike would be another possible solution. Was a clay core dike considered?

**ENDANGERED SPECIES COMMENTS:** The proposed project lies within the range of the piping plover and the Indiana bat, Federally listed endangered species. Due to the project type and location, the project, as proposed, will have no effect on these species. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended. Should the project be modified or new information become available that indicates listed or proposed species may be affected, consultation should be initiated.

We appreciate this opportunity to provide the above comments.

Sincerely,

*William J. Kurev*

W. J. Kurev  
Acting Supervisor

cc: Chief, Ohio Division of Wildlife, Columbus, OH  
ODNR, Outdoor Recreation Service, Attn: M. Colvin, Columbus, OH  
Ohio EPA, Water Quality Monitoring, (L. Merchant), Columbus, OH  
U.S.EPA, Office of Environmental Review, Chicago, IL



ROOM 106 • CITY HALL  
601 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
(216) 664-2800

# City of Cleveland

MICHAEL R. WHITE, MAYOR

DEPARTMENT OF LAW  
CRAIG S. MILLER  
DIRECTOR

14 Aug 91 09 06  
CRAIG S. MILLER  
DIRECTOR

August 9, 1991

Colonel John W. Morris  
Department of the Army  
Buffalo District - Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207-3199

Attention: Mr. Richard Mammoser

Re: New Confined Disposal Facility  
at Cleveland, Ohio

Dear Colonel Morris:

The City of Cleveland will agree to act as the Local Sponsor for a Confined Disposal Facility ("CDF") to be constructed and filled by the Army Corps of Engineers, at a site located along the northern shoreline of Burke Lakefront Airport in Cleveland, Ohio. This new site is a modified version of the previously studied Sites 10 and 10A, which the City will denominate as site 10B for purposes of this notice. Attached is an Exhibit A to this letter describing this new site.

The City will bear the cost of the sewer extensions needed to complete this project.

The City will enter into a Local Cooperation Agreement ("L.C.A.") with the Army Corps of Engineers for the construction, maintenance and filling of the Dike, provided that the City and Corps can reach agreement on the terms of the L.C.A., and provided that such an agreement is authorized by Cleveland City Council.

Director Cynthia D. Rich, of the Department of Port Control of the City, has administrative authority over Burke Lakefront Airport and the City Harbor. She will act on behalf of the City as the official contact throughout the project.

68

Colonel John W. Morris  
July 29, 1991  
Page 2

She may be contacted at the following address:

Cynthia D. Rich, Director  
Department of Port Control  
Second Floor - Passenger Terminal Building  
Cleveland Hopkins International Airport  
5300 Riverside Drive  
Cleveland, Ohio 44135-3193  
(216) 265-6022.

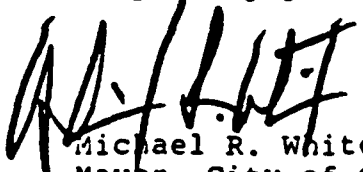
The City's Law Department will coordinate the discussions concerning the L.C.A. The contact person is William M. Ondrey Gruber, who can be contacted at the following address:

William M. Ondrey Gruber  
Chief Assistant Director of Law  
Room 106 - City Hall  
601 Lakeside Avenue  
Cleveland, Ohio 44114  
(216) 664-2693.

If you have any questions, please contact Joseph Zalenski, the City's CDF Project Manager at (216) 664-3671, or Bill Gruber at the telephone number listed above.

I appreciate the Corps' cooperation in determining the location of a new CDF, and I hope that the new site can be constructed and brought into service as soon as possible.

Very truly yours,



Michael R. White  
Mayor, City of Cleveland

MRW:lls

cc: Cynthia D. Rich  
Joseph A. Marinucci  
Lawrence Kassouf  
David Fleshler  
Ron Toth  
Michael Barth  
Hunter Morrison  
Joseph Zalenski  
Barbara J. Danforth  
William M. Ondrey Gruber  
Admiral Fugaro



DEPARTMENT OF THE ARMY  
BUFFALO DISTRICT, CORPS OF ENGINEERS  
1776 NIAGARA STREET  
BUFFALO, NEW YORK 14207-3188

*Sample  
Coord.*

REPLY TO  
ATTENTION OF

Environmental Analysis Section

JAN 20 1993

SUBJECT: Cleveland Harbor - New CDF, Cuyahoga County, Ohio,  
Draft Letter Report and Draft Environmental Impact Statement.

TO ALL INTERESTED PARTIES:

Enclosed for your review are copies of the Cleveland Harbor - New Confined Disposal Facility (CDF), Draft Letter Report and Draft Environmental Impact Statement (DEIS) and Environmental Appendices. These reports pertain to potential construction and use of a new CDF along Burke Lakefront Airport and the Outer Harbor at Cleveland Harbor, Ohio.

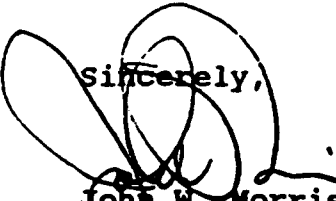
The DEIS has been prepared in accordance with the Council on Environmental Quality's "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)" 40 CFR 1500-1508, as promulgated in Corps of Engineers Regulation ER 200-2-2 "Environmental Quality: Policies and Procedures for Implementing NEPA."

A Clean Water Act, Public Notice and Section 404(b)(1) Evaluation Report are included in the DEIS Environmental Appendices.

These reports have been filed with the U.S. Environmental Protection Agency and are being coordinated for planning and NEPA 45-day agency and public draft review. If you have any comments on these reports, correspondence should be directed to the Buffalo District Office within 45 days of the date of the Notice of Availability (NOA) in the Federal Register. The date of the NOA should be several days later than the date of this letter. Public review comments on these reports will be addressed and incorporated into the subsequent final reports.

My points of contact pertaining to this matter are Mr. James Karsten of my Plan Formulation and Technical Management Section and Mr. Tod Smith of my Environmental Analysis Section, who can be contacted by calling 716-879-4245 or 716-879-4173, respectively, or by writing to their attention at the above address.

Sincerely,

  
John W. Morris  
Colonel, U.S. Army  
Commanding

Enclosures

CLEVELAND HARBOR  
HARBOR MAINTENANCE AND  
CONFINED DISPOSAL FACILITY [Site 10B (15-Year)]  
CUYAHOGA COUNTY, OHIO

ENVIRONMENTAL IMPACT STATEMENT

APPENDIX EIS-H

COMMENT/RESPONSE ON THE  
DRAFT LETTER REPORT AND DRAFT  
ENVIRONMENTAL IMPACT STATEMENT

U.S. ARMY CORPS OF ENGINEERS  
BUFFALO DISTRICT

1994



Cleveland Harbor - New CDF  
Cleveland, Ohio

Comments received on the Draft Letter Report and Draft Environmental  
Impact Statement and U.S. Army Corps of Engineers, Buffalo District Responses.

Letter Date	Comment Letter From:	Page
<b>Federal</b>		
1/26/93	U.S. Department of Transportation Federal Highway Administration	1
3/4/93	U.S. Department of the Interior Office of the Secretary Office of Environmental Affairs	2
3/15/93	U.S. Department of Transportation Federal Aviation Administration	3
3/31/93	U.S. Department of the Interior Fish and Wildlife Service	6
4/15/93	U.S. Environmental Protection Agency Region V	11
4/28/93	U.S. Department of Housing and Urban Development - Region V	19
<b>State</b>		
1/ /93	Ohio State Clearinghouse Office of Budget and Management	20
3/2/93	Ohio Historic Preservation        e	21
3/8/93	Ohio State Clearinghouse Office of Budget and Management	22
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<b>Local</b>		
2/5/93	City of Cleveland Department of Public Health	26
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2/5/93	Lake Carrier's Association	37



U.S. Department  
of Transportation  
Federal Highway  
Administration

Page 2  
Buck, Ohio, 12/18/93  
14207-3199

14207-3199  
14207-3199

U.S. Department of Transportation  
Federal Highway Administration

Letter Dated:  
January 26, 1993

January 26, 1993

HPP-05

Mr. Tod Smith  
Environmental Analysis Section  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207-3199

Dear Mr. Smith:

The summary of the Draft Environmental Impact Statement for Cleveland Harbor - New Confined Disposal Facility, Cleveland Harbor, Ohio has been reviewed. From the review it does not appear there will be any impacts to the highway systems in the area of the proposed facility. We, therefore, have no comments to offer on the proposed activities covered by the draft EIS.

Sincerely yours,

Lionel M. Wood, Director  
Office of Planning & Program Development

By: Paul D. Quinn  
Regional Environmental Specialist

1. Thank you for your review and comments.  
No further response necessary at this time.

cc: Ohio Division



United States Department of the Interior

OFFICE OF THE SECRETARY

OFFICE OF ENVIRONMENTAL AFFAIRS  
230 S. DEARBORN, SUITE 3412  
CHICAGO, ILLINOIS 60604

U.S. Department of the Interior  
Office of the Secretary

Letter Dated:  
March 4, 1993

ER-93/55

March 4, 1993

*J. Morris*  
Colonel John W. Morris  
District Commander  
U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, New York 14207-3199

Dear Colonel Morris:

The Department of the Interior (Department) has reviewed the Draft Letter Report and Draft Environmental Impact Statement for the Cleveland Harbor, Confined Disposal Facility, Cuyahoga County, Ohio. We offer the following comments for your consideration.

The subject documents for the proposed project adequately address the concerns of the Department relative to recreational resources, and fish and wildlife resources. Specific comments concerning mineral resources are provided below.

Mineral Resources

The major users of Cleveland Harbor are the mineral industries (i.e., iron ore, salt, limestone, and cement). The proposed project will benefit these industries by providing for the continued maintenance of commercial navigation in the harbor. Discontinuance of dredging would likely result in the closure of many harbor-dependent businesses, including many of the mineral-dependent ones, and would have significant short- and long-term adverse effects on both Cleveland and the regional economy. The subject documents have noted the above facts and the importance of both the mineral commodities shipped through the port and those that will be used in the construction of the disposal facility. Therefore, the Department finds that the documents, as written, have adequately described mineral resources and the potential impacts of the proposed project upon these resources.

We appreciate the opportunity to review the subject documents and provide these comments.

Sincerely,

*Shelia Minor Huff*  
Shelia Minor Huff  
Regional Environmental Officer

1. Thank you for your review and comments.  
No further response necessary at this time.



U.S. Department  
of Transportation  
Federal Aviation  
Administration

March 15, 1993

Mr. Tod Smith  
U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, N.Y. 14207 3199

DRAFT Environmental Impact Statement  
Confined Disposal Facility, Cleveland Harbor Site 108

Dear Mr. Smith:

This letter is in response to the DRAFT Environmental Impact Statement (DEIS) for the above referenced site. Our Detroit Airports District Office has reviewed the document and have the following comments:

1. **ABSTRACT** The second last sentence should be revised to delete "...waterfront recreational access development. ...", and add development of Burke Lakefront Airport. Based on current standards for development of airports, public access into or through the airports' runway approach surfaces would not be allowed.
  2. Page EIS-28 Par. 2.46 Add after "...July 1978) and Federal Aviation Regulations, Part 77 Notice of Proposed Construction or Alteration pertaining... (Enclosed is referenced FAA Form 7460-1).
  3. Page EIS-37 Recreational resources for Site 108 should not state pedestrian/fisherman accesses as long term use.
  4. Page EIS-38 Noise and Aesthetics for Site 108 should state possible replacement runway for existing runway 6R-24L at Burke Lakefront Airport, not long term use as pedestrian/fisherman access.
  5. Page EIS-68 Par. 4.88 The intended use of the CDF land is to construct a replacement runway for existing runway 6R-24L, subject to environmental approval.
  6. Page EIS-78 Item 3. The FAA objects to the establishment of raised bench areas for increasing possible spawning habitat. Since such areas would result in attracting birds, which would impair the safety of aircraft operations to the existing, as well as the future, runway approaches.
- The FAA supports the CDF project for landfill adjacent to Burke Lakefront Airport to allow for airport expansion should the need arise.

Sincerely,

*Robert L. Conrad*  
Robert L. Conrad,  
Airport Engineer

Enclosure

U.S. Department of Transportation  
Federal Aviation Administration

Letter Dated:  
March 15, 1993

Thank you for your review and comments. The following respond to your comment items. We wish to coordinate fully to assure the safety of aircraft operations at the existing, as well as future airport developments.

1. The "potential future waterfront recreational access developments" refer to schemes being considered adjacent/peripheral to the existing or future airport (understandably not into or through the airport or runway approach surfaces) which may be facilitated/accommodated by CDF related future airport facility relocation or expansion. Recreational developments would not pertain to Site 108 proper or the airport, but adjacent/periphery and/or secondary effects/considerations. For example, previous correspondence and "The Cleveland Civic Vision 2000 Downtown Plan - Downtown Lakefront Development Plan - North Coast Harbor" project envisions such development adjacent to the southwest corner of the existing airport. See Figures. Also, fishermen would likely fish (where allowable) from boats and/or shore along the dike stone. The statement has been revised/clarified in this regard. However, such statements need to be retained in order to demonstrate some potential trade-off between recreational losses and gains. Of course any such future developments are subject to further planning, development, environmental, FAA, etc. reviews.

We have included the statement that: "The CDF would likely eventually be utilized to expand or relocate facilities at Burke Lakefront Airport".

2. We have included the statement, as requested, as well as statements in the REQUIRED COORDINATION sections of the EIS.

3. Reference response to comment item 1. Also reference statements for Community and Regional Growth and more detailed discussion in SECTION 4. ENVIRONMENTAL EFFECTS of the EIS. Recreational developments would not pertain to Site 108 proper or the airport, but peripheral/adjacent and/or secondary effects/considerations. We added a clarification phrase "... (peripheral) possibly facilitated/accommodated by CDF related future airport facility relocation or expansion."

4. Reference responses to comment items 1 and 3. We have included a phrase "Probable long-term land use to expand or relocate airport facilities," and a clarification phrase "... development... (peripheral) possibly facilitated/accommodated by CDF related future airport facility relocation or expansion."

5. The paragraph has been revised/clarified. "... the Burke Lakefront Airport." has been revised to "... Burke Lakefront Airport facilities. The current thought is to eventually use the CDF land to construct a replacement runway for existing runway 6R-24L, subject to environmental approval." The last sentence has been modified for clarification to include "... (peripheral) possibly facilitated/accommodated by CDF related future airport facility relocation or expansion."





6. The elimination of the raised bench area is being coordinated with the environmental agencies due to dike stability, cost, potential avian attraction and air traffic safety, and operation and maintenance considerations/concerns.

The Corps of Engineers, Buffalo District wishes to continue coordination pertaining to CDF design, construction, and utilization relative to avian activity to minimize potential hazards to existing and future aircraft operations.

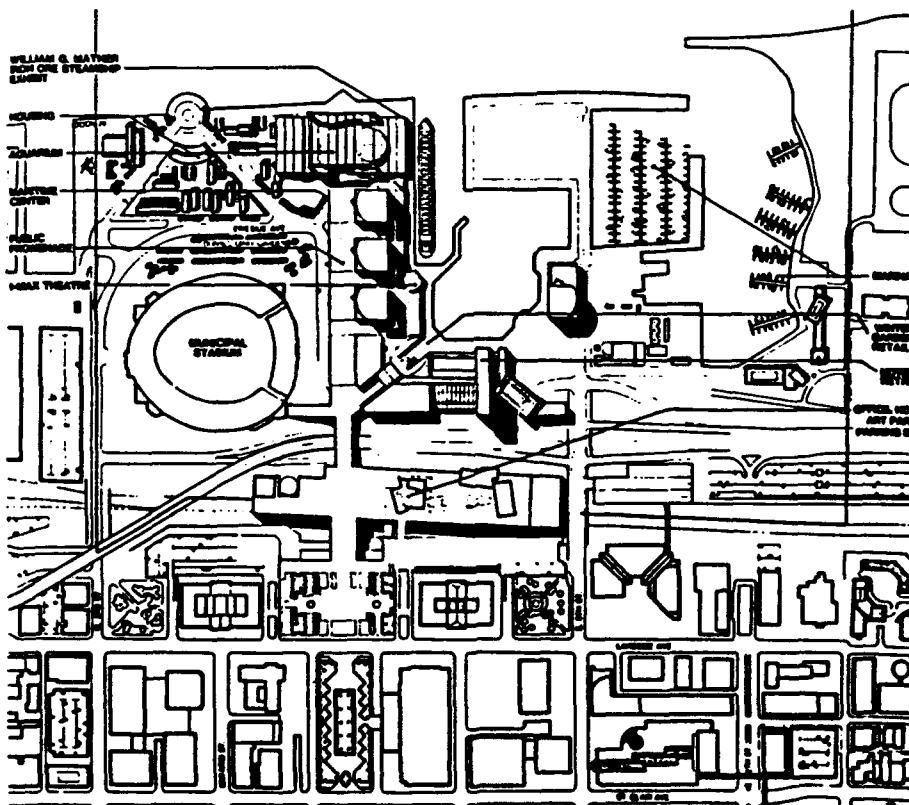
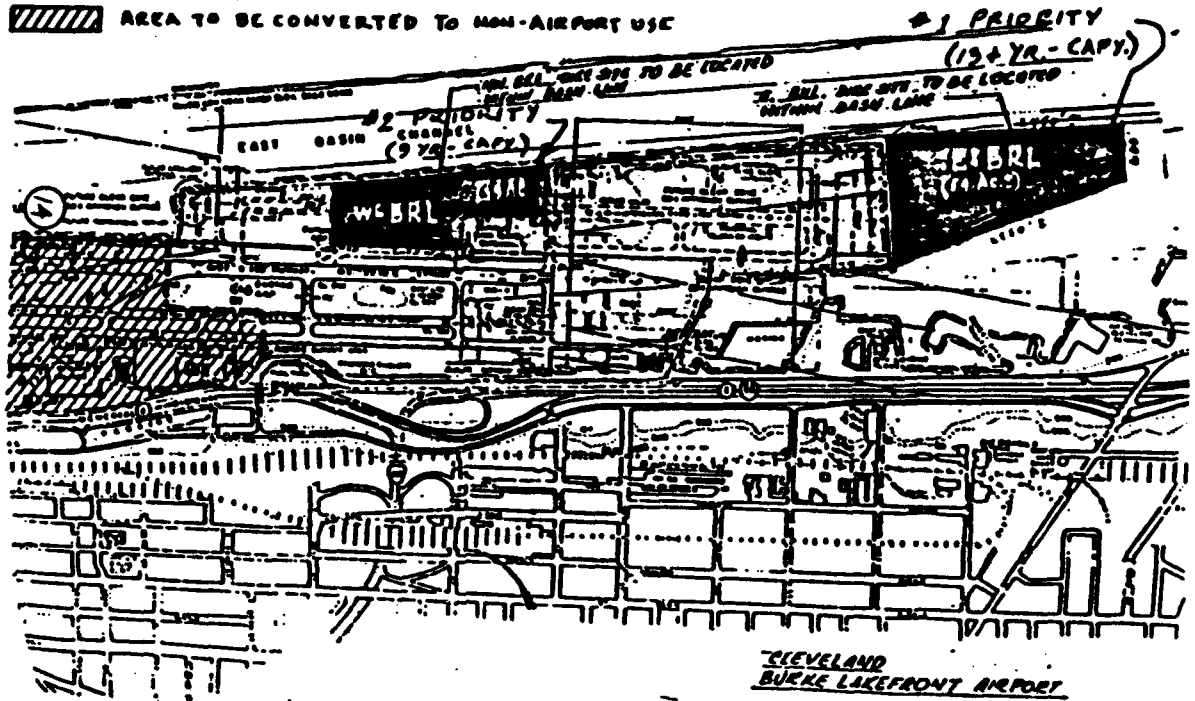
We thank you for your review, comment, coordination, and support pertaining to this project.

# PROPOSED DREDGINGS DISPO. SITES

## CITY PLANNING COMMISSION

-  EXISTING BURKE AIRPORT
-  EXISTING UNDEVELOPED FILL
-  PROPOSED FILL SITES
-  AREA TO BE CONVERTED TO NON-AIRPORT USE

Nov. 1988



### Development Trends

The North Coast Harbor development program encompasses a large scale mixed-use development encompassing major public attractions, public open space, retail, office, hotel, parking and residential facilities. Collectively, this combination of elements will work together to create a recreational, vibrant environment where people can live, work, shop, and enjoy cultural and recreational activities.

The North Coast Harbor project is intended to serve as a major catalyst for Cleveland's economic and community development into the next century. The explicit objectives of the project are to promote public enjoyment of Cleveland's Lake Erie shoreline and to enhance the economic vitality of the city and region by:

1. Establishing public access to, and enjoyment of, the water's edge;
2. Preserving existing waterfront views;
3. Creating a strong visual and pedestrian linkage between the Downtown Lakefront District and the rest of downtown;
4. Establishing in the district world-class, people-oriented facilities accessible to the entire Cleveland community;
5. Establishing the district as a significant regional and national destination for tourism and other visitors;
6. Creating outstanding high quality public amenities, providing opportunities for self-education and fostering interest in science, technology, history, and the natural environment; and
7. Developing the district as a major enhancement of the quality of Cleveland's built environment.

CIVIC VISION  
DOWNTOWN  
PLAN

2 DOWNTOWN LAKEFRONT  
DEVELOPMENT PLAN



**United States Department of the Interior**

Fish and Wildlife Service  
Reno, Nevada Field Office  
6950-H Americana Parkway  
Reno, Nevada 89501



5 APR 5 09 15

In Reply Refer to:

COOH: 614/469-6923 FAX: 614/469-6919  
March 31, 1993

U.S. Department of the Interior  
Fish and Wildlife Service

Letter Dated:  
March 31, 1993

Colonel John W. Morris  
District Engineer  
Buffalo District, Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

Attention: Len Bryniarski

Dear Colonel Morris:

This is our Final Fish and Wildlife Coordination Act Report on a proposed confined disposal facility (CDF) Site 10B at Cleveland, Cuyahoga County, Ohio. The report has been prepared under authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended 16 U.S.C. 661 et seq.), for the Buffalo District Corps of Engineers per agreement No. HCB-IA-92-02EG, dated December 12, 1991.

This report has been reviewed by the Ohio Division of Wildlife. Their concurrence letter dated March 23, 1993, is attached.

The Cleveland Harbor area, protected by breakwaters, is five miles long and 1,600 to 2,400 feet wide for a total area of approximately 1,300 acres. Improved and dredged channels are maintained in the lower 5.8 miles of the Cuyahoga River, the Old River Channel, and the Outer Harbor. The Lake Approach Channel is maintained at a depth of 29 feet. The Outer Harbor is 28 feet deep up to the mouth of the Cuyahoga River. The Lower Cuyahoga River Channel is 27 feet deep up to the junction of Old River and 23 feet deep upstream to mile 5.8. In general, water quality has been improving over the last 15 years; but most of the sediments are still highly to moderately polluted and unsuitable for open lake disposal.

The proposed CDF (Site 10B) will be attached to a former disposal facility on the east and existing Burke Airport fill on the south (see Plate 1). A rubblemound dike will be constructed on the north side (4,500 feet) and west side (550 feet) to encompass an area of approximately 68 acres. The dike wall will be constructed with various sizes of rock ranging from that passing through a #20 sieve to 2.5 ton. A clay closure wall, approximately 5 feet high, will be constructed along the adjacent length of Burke Lakefront Airport. This wall will be removed when the CDF is full and the fill has

1. GENERAL - Thank you for your coordination, review, and comments. The numbered response paragraphs correspond to your numbered discussion and recommendation paragraphs.

consolidated. The water depths in the area of the proposed CDF vary from about 18 feet to 25 feet.

The navigation channel which will be adjacent to the north dike wall is maintained at a depth of 28 feet. Sediments in the proposed disposal area are probably fine sands, clay, gravel and some organic material. This assumption is based on sediments we found at the proposed CDF site (Burke East) just to the east of existing filled disposal facility (Dike 12).

#### FISH AND WILDLIFE RESOURCES

Aquatic resources of Cleveland Harbor are many and varied. Species composition has changed over the years towards more pollution tolerant species due to the overall reduction in water quality. However in recent years, this trend may have stabilized or improved slightly from conditions in the mid 1970's.

Approximately 50 species of benthic microinvertebrates (primarily oligochaetes) have been reported in the Cleveland nearshore zone (Pledisinas, 1978). We have not conducted any benthic studies at the proposed site. However, we collected sediment samples at the proposed east basin CDF (Burke East) site in 1988 and the results of that study were provided to the Buffalo District Corps of Engineers in our Biological Report dated May 26, 1989. The location of the sampling sites is indicated on Plate 2 while the results of that benthic study are provided in Table 1. More details are contained in the Biological Report. We believe that many of these organisms would also be found at Site 10B. Also in 1986, the Buffalo District Corps of Engineers contracted a study of sediments and macroinvertebrates at Edgewater Park and Burke Lakefront Airport. The contractor was Aqua Tech Environmental Consultants Incorporated and their report "The Analysis of Sediments from Cleveland Harbor", Technical Report #C0176-11, was provided in August, 1986. Table III from that report and the location of the Burke Lakefront sampling sites is attached as Appendix 1.

Fish species in and adjacent to Cleveland Harbor consist of numerous forage and game species. The forage base is dominated by shad, spottail shiner and emerald shiner. Sport fish include white bass, yellow perch, walleye, rock bass and catfish. In recent years, the number of white perch in Cleveland, as well as Lake Erie, has greatly increased to a point where they may be one of the most abundant species.

In the early 1970's Dr. Andrew White conducted various surveys in the Cleveland area (White et al.). Table 2 lists those species collected as fry or young-of-year in Cleveland Harbor during the years 1972-74. Table 3 provides a list of fish species collected in Cleveland Harbor and adjacent marinas from 1972 to 1974.

In 1986 we set two variable mesh gill nets adjacent to Burke Lakefront Airport at the proposed "Site 10" CDF, which is the same location as the currently proposed Site 10B. The results of that survey are presented in Table 4. Also in 1988 and 1989, we conducted gill net surveys at the Burke East proposed CDF. The results of those surveys are also presented in Table 4. We present this data because we believe that fish populations at Site 10B would be comparable to those found at Site 10 in 1986 and at Burke East in 1988 and



1989. White et al. collected a total of 47 species in Cleveland Harbor and adjacent marinas. Our surveys at Burke East and Site 10 found only about half as many species. Part of the difference can be attributed to the fact that we only used gill nets while White used a variety of sampling methods.

Vegetation in the project area of Site 10B is limited. There are a few small trees along the edge of Burke Lakefront Airport, but most of the area contains grasses and herbs. There is also some algae attached to the riprap along Burke Lakefront Airport. Wildlife resources in the project area consist primarily of avian species. In April 1989 we observed the following birds: Bonaparte's, herring and ring-billed gulls, common merganser, scaup, mallards, bufflehead, woodcock and common tern. On the edge of the filled CDP, we observed Canada geese, common flicker, American robin, red-winged blackbird and great blue heron. In May 1989 we also observed black crowned night heron, barn swallows, and chimney swifts. We have made no surveys in the area for upland species, although we expect to find small mammals, and reptiles and probably pheasants and rabbits on the Burke Lakefront Airport property.

**UNTHREATENED SPECIES CONCERNS:** The proposed project lies within the range of the Indiana bat and piping plover, Federally listed endangered species. Due to type of habitat in the project area, the project, as proposed, will have no impact on these species. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended. Should the project be modified or new information become available that indicates listed or proposed species may be affected, consultation should be initiated.

#### DISCUSSION AND RECOMMENDATIONS

We have been discussing, commenting, and preparing reports on various proposed CDP's in the Cleveland area since the currently used CDP (Dike 14) was constructed. The Corps has borrowed some time for the need for a new CDP by raising the dike walls of Dike 14. By raising these dike walls, Dike 14 will be capable of holding an additional 3-5 years of dredged material. This is the second time we have looked at a proposed CDP at Burke Lakefront Airport. The first proposal was known as Site 10. We prepared an April 23, 1987 draft Fish and Wildlife Coordination Act Report on this and other proposed sites in the Cleveland Harbor area.

Over the years, we have requested that the Corps consider using upland disposal sites for dredged material. We have also recommended use of dredged material as fill for industrial, transportation or commercial projects in the Cleveland area. For the last few years, some of the material dredged from the upstream portion of the navigation channel has been clean enough to use as beach nourishment or introduced into the littoral drift.

In our opinion, the most economical and environmentally sound solution to maintenance dredging and disposal of dredged material is to keep the sediments out of the Cuyahoga River navigation channel. To this end, we are willing to advise the Corps or any other Federal, state or local agency in upland erosion control programs or projects.

#### DISCUSSION AND RECOMMENDATION

3. Upland confined disposal facilities and/or alternate use measures are discussed in EIS paragraphs 2.14 through 2.18.

The Corps has given consideration to upland areas as disposal sites. There are numerous problems with upland sites. First, the local sponsor is required to provide the disposal site and due to the heavy industrial and commercial use of the land areas adjacent to the Federal navigation channel there simply is no suitable available nearby site. Second, more distant sites would probably have to be outside the Cleveland harbor or city area because of the high degree of urbanization. Even if such a site were available, it's unlikely that other communities would be willing to have the dredged polluted spoil "dumped" in their backyard as they derive little, if any, direct benefit from the harbor. Third, the transport of large quantities of saturated dredged material would pose considerable problems and, in itself, may have considerable impacts. Fourth, the potential use of an upland site generates an array of engineering, economic, environmental, and social concerns equal to or greater than potential use of a shoreline open-water CDP site.

The Corps has and will continue to beneficially use the clean, sandy fraction of the Cuyahoga River sediments as nourishment for Stratenahi Beach by placement in the nearshore littoral zone. An item of note is that the Buffalo District is one of several entities engaged in developing a Long Term Management Strategy (LTMS) Action Plan for Toledo Harbor, Ohio. This study may serve as a pilot study to further advance consideration and feasibility of alternative measures.

4. Pollution control and upstream erosion control measures are discussed in EIS paragraphs 2.06 and 2.07 through 2.12.

In our opinion, the implementation of an upland and floodplain erosion control program are the type of long range planning which should be implemented. By implementation of such a program, the need for costly, habitat destroying winter CDP's could be eliminated or greatly reduced in the future. By investing some time and money now, the government could eliminate or reduce the unnecessary dredging cost in future years. Along with stricter pollution control standards, the sediments which would remain and need to be dredged could be classified as non-polluted or moderately polluted and open lake disposal would be appropriate. If action is not taken in the near future, the cost of controlling the erosion and confining the polluted sediments will only increase. Also, if the source of erosion is not controlled, at least partially, the immediate problem of removing sediments is perpetuated.

The construction of the proposed CDP in Cleveland Harbor would require mitigation for the loss of 68 acres of deep water aquatic habitat. Replacement of the loss of deeper habitat with in-kind mitigation would not be practical. Therefore, we recommend out-of-kind mitigation measures to enhance spawning habitat in Cleveland Harbor be initiated. One spawning habitat technique would consist of designing into the proposed CDP dike a spawning shelf. This shelf constructed on the waterward side of the dike should be 4-7 feet wide and be located about 4-8 feet below normal water level. Preferably, portions of the shelf would be constructed at 4-6 and 6-8 feet to allow various species spawning sites at various water levels. We envision the shelf being constructed of larger stone and then capped with a layer of gravel. The gravel may have to be replenished, if ice conditions or wave action across the gravel. Another mitigation measure to consider would be to locate shallow water areas in or near Cleveland Harbor that could be developed into spawning areas with the addition of gravel substrate. In both cases, the mitigation spawning areas would need to be maintained for the life of the project.

We appreciate this opportunity to provide this report and look forward to additional discussion and planning meetings regarding the proposed mitigation measures discussed above.

Sincerely,

*Kent E. Koenenmeyer*  
 Kent E. Koenenmeyer  
 Supervisor

cc: DOW, Wildlife Environmental Section, Columbus, OH  
 OHM, Office of Realty and Land Management, Columbus, OH  
 Ohio EPA, Water Quality Monitoring, Attn: G. Reese, Columbus, OH  
 US EPA, Office of Environmental Review, Chicago, IL

While we agree that the ideal situation would be to eliminate/limit the amount of sediment entering the channel, the Corps has specific, limited authorities which do not include any sediment management activities. The Buffalo District did look at reducing the sediment load of the river under the authority of and as part of the Cuyahoga River Restoration Study conducted in the 1970's and 1980's. The recommendations in the report were for local interests to: implement Best Management Practices (BMP's) to reduce sheet and rill erosion in critically eroding areas; based on U.S. Soil Conservation Service experience with similar projects; and implement BMP's for non-point sediment sources. Many study recommendations have/been or are being implemented to some degree. The study estimated that the two BMP actions could reduce the volume of sediment entering the harbor by approximately 50 percent. Some progress in this regard may be evident over the last few decades via erosion reduction programs, land use change, or probably both. Over the last few decades, the amount of material dredged from Cleveland Harbor has been reduced from about 500,000 cubic yards to 300,000 cubic yards on an average annual basis.

The two suggestions made are valid ones that could be implemented by other local, State, and Federal agencies, as the Corps has no authority to work on upland and non-point erosion control or pollution control. An item of note is that the Buffalo District is one of several entities engaged in developing a Long Term Management Strategy (LTMS) Action Plan for Toledo Harbor, Ohio. In the development of this strategic plan watershed sediment management will be reviewed along with other alternatives. This Action Plan is scheduled for completion in October 1993 and its recommendations may have future applicability for the Cuyahoga River watershed.

5. Although creation of a "gravel shelf to improve spawning habitat" could improve fisheries habitat, the Buffalo District also recognizes that the submerged stone of the CDP dike would provide an estimated 9 acres of stable long-term fish habitat - some of which would likely be used by fish species as spawning, nursery, and/or feeding habitat. This habitat would probably be of more value to the fishery than the very soft much bottom (estimated to be about 7 feet deep in chickness) containing silt and clay material at the deep water CDP site. Additionally, the project would facilitate dredging removal and CDP containment of sediments dredged from the harbor that are considered to be "not suitable for unrestricted open-lake disposal," restricting movement of such material into the open water and sediments (environments) of the Harbor and Lake.

In light of the overall project mandate, costs, objectives/accomplishments, and assessment evaluation or trade-offs, the Corps of Engineers can not warrant "mitigation" (as it is defined by or as it pertains to the Corps planning criteria) for the project.

Lesser environmental design, consideration, or compensation measures may be considered and may be feasible if: a) they are incidental to the base project, b) they may be implemented at no additional or minor cost, and c) such measures further avoid, minimize, or compensate for lesser adverse impacts or improve environmental conditions.

Unfortunately, a number of serious problems have surfaced pertaining to consideration and implementation of the proposed measures. Considering the previous statements, the predominant problem is that raising the dike berm to the proposed elevation would require significant structural modification and associated costs which are not acceptable. The revised dike cross-section has a berm on both sides for stability reasons. The bottom material is very soft, unconsolidated silt and clay which will be displaced to some extent by dike construction. The underlying material also has a low bearing capacity and the berms are required to provide the factor of safety necessary to prevent any failure. These berms are at 18.0 to 20.0 feet on the lakeward side and

20.0 feet on the containment side (all referenced to LWD). A four foot wide shelf extending up to 6.0 feet on the lakeward side would require counterbalancing on the containment side which not only adds to the cross-sectional area of the dike and its cost, but also reduces the available space in the CDF for dredged material - requiring us to make the containment area larger - and again more costly. We conservatively estimate the cost of the additional stone to construct the shelf and the counterweight to be hundreds of thousands of dollars. This does not include the placement of gravel on top of the armor stone. The shelf is also likely to require annual replacement of gravel sized stone on the submerged berm due to scouring by wave action which would be costly and would require the local sponsor to assume that responsibility once the CDF site is filled. It is unlikely that the sponsor would agree to such a stipulation. Also, recent comments received by the Corps from the FAA (letter dated March 15, 1993) and the City of Cleveland (letter dated April 15, 1993), indicated strong opposition to the spawning shelf because of their concern that, if the CDF when filled was converted to an airport runway area, the fisheries improvement measure may contribute toward further attracting birds to the area that feed on juvenile fish, thereby posing an increased potential safety hazard to pilots and aircraft utilizing the runway.

Placement of gravel in shallow unprotected coastal water areas in the general vicinity of the airport or harbor would probably not be acceptable for similar reasons. Additionally, Corp's mitigation and compensation policy (rule of thumb) directs compensation (as necessary) in kind, in time, and in place. Measures would need to be in proximity to the site. In view of the factors addressed in the above paragraphs, it is the Buffalo District's conclusion that the proposed measures are not feasible for the proposed project.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3890

U.S. Environmental Protection Agency  
Region 5

Letter Dated:  
March 15, 1993

ENVIRONMENTAL  
MS-154

Colonel John W. Morris  
Department of the Army  
Buffalo District  
Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207

Dear Colonel Morris:

In accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act, we have reviewed the Draft Environmental Impact Statement (DEIS) on the proposed construction of a Confined Disposal Facility (CDF) to contain maintenance dredged material from the Cleveland Harbor Federal Navigation channels in Cuyahoga County, Ohio.

Several alternatives were reviewed in the DEIS, the preferred site being approximately 68 acres in size, with a capacity of 3,840,000 cubic yards of dredged material, and a lifespan of about 15 years. Based upon our review of the DEIS, we have environmental concerns with the project as proposed. Furthermore, we have identified information which should be included in the Final EIS regarding potential water quality impacts, recreation impacts, and sediment loading.

We appreciate the opportunity to provide comments on the DEIS. Based upon our review, we have assigned a rating of "EC-2" which will be published in the Federal Register. The "EC" indicates that we have environmental concerns with the preferred alternative, and the "2" means that additional information should be provided. Our concerns will be resolved when the requested information regarding water quality, recreation impacts and sediment load reduction is submitted. If you have any questions on our comments, please contact Molly Wirick of my staff at (312) 353-6704.

Sincerely yours,

*William D. Frans*  
William D. Frans, Acting Chief  
Planning and Assessment Branch  
Planning and Management Division

Enclosure

cc: Gwen Whitt, OPA, Washington, D.C.  
Amy Hashimoto, OPA, Washington, D.C.

1. General

Thank you for your review and comments. The following numbered response paragraphs correspond to your numbered comment paragraphs. We hope that this and report revisions will resolve requested additional information needs.

U.S. Environmental Protection Agency  
Region V Comments  
Draft Environmental Impact Statement  
Confined Disposal Facility  
Cleveland Harbor, Cuyahoga County, Ohio

**SUMMARY**

The U.S. Army Corps of Engineers has proposed to construct a 88 acre, in-water confined disposal facility (CDF) to contain dredged material from the Cleveland Harbor Federal Navigation channels in Cuyahoga County, Ohio. The Federal navigation channels include those in the Outer Harbor, the Old River Channel, and the Cuyahoga River Channel. Most sediments dredged from these channels are classified as polluted and are not suitable for open-lake discharge. A new CDF is necessary because the existing CDF will be filled to capacity in three years.

Several disposal alternatives were evaluated in the DEIS, including no action, upstream erosion control, open-lake discharge, upland CDFs, and several in-water CDF sites. The preferred alternative is an in-water CDF located in the East Basin of the Harbor, approximately two miles east of the mouth of the Cuyahoga River (site 10B). The CDF would have an area of approximately 68 acres, with a usable volume of 3,840,000 cubic yards, and would provide approximately 15 years of capacity for consolidated dredged material at a rate of 300,000 cubic yards per year.

Site 10B runs adjacent to, and north of, the Burke airfield within Cleveland Harbor Lakefront Airport. The site attaches to former CDFs located east of the airport, and extends 4,500 feet westward, parallel to the east entrance channel. Construction would consist of building a 9,050 foot-long rubblemound dike with a top elevation of +14 feet LWD placed in water with a depth of -23 feet LWD. A concrete control weir with sliding boards would be installed in the new dike wall for discharge of water from the facility (if necessary) after sediments and their adsorbed pollutants have settled out from the discharged material. Our Agency has several concerns with the project as proposed, including potential water quality impacts, recreation impacts and sediment loading. These concerns are discussed below.

**Water Quality**

Sediments from Cleveland Harbor were tested in 1986. The results indicated that sediments from the harbor and most of the river channel sediments are polluted with heavy metals, oil and grease. Disruption of the water column and bottom substrate during construction of the CDF would cause increased turbidity due to the resuspension of sediment. In this regard, we recommend that measures be taken to minimize the migration of contaminants from the project area. Such measures may include the use of contain-

2. Summary  
No response necessary.

**3a. Water Quality**

Although placement of CDF dike stone would disturb bottom sediments causing associated resuspension and turbidity in the water column, as indicated in the EIS, this would be expected to be only a localized relatively minor short-term adverse impact. This would occur primarily during initial placement of the dike (cross-section) B stone and dissipate with placement of upper and outer layers of stone. Some fines may be temporarily suspended in the water column with placement of the dike (cross-section) F stone and filter fabric, however, this would primarily be contained along the dike perimeter within the CDF area by the previously placed dike B stone and immediately placed filter fabric.

Most associated water column turbidity problems would occur during channel maintenance dredging (not specifically addressed by this study) and the turbidity within the CDF caused by placement/dischage of the dredged material within the CDF.

ment devices, such as silt screens or partial coffer dams, prior to the initiation of project activities. Also, we request that Tables 1 and 2 of the DEIS be modified to include numerical summaries of the sediment data collected in 1986 and 1990.

Water quality issues including actions taken to minimize impacts may be discussed in some further detail in Appendix EIS-B Public Notice and Section 404 Evaluation of this EIS.

As indicated in the EIS (paragraph 2.50) and sections of the Section 404 Evaluation (Appendix):

Project contractors would be required to comply with the Corps of Engineers Civil Works Construction Specification entitled "Environmental Protection" (CW-01430, dated July 1978) pertaining to measures to be applied during construction/operations to protect significant water and associated land environmental resources (i.e., noise, dust, erosion, turbidity, etc.).

These requirements are included in project plans and specifications and would invoke use of practical measures to address such concerns, particularly if a problem may be or becomes evident. However, different contractors may use different equipment, which may require different protection measures, which makes directed use of specific measures difficult in most cases. A number of measures may be considered relative to the referenced situation however. As examples: (1) initial stone placement and placement of stone containing fines may be scheduled during calmer lake conditions, (2) stone material may be lowered before release to better direct placement and to reduce impact and associated disturbance. Additionally, Federal, State, and local personnel periodically inspect construction for evidence of and/or measures to address such problems. Silt curtains would not be practical in this situation in 20 feet (plus) water depth. A coffer dam would be more applicable to in-stream construction, and would not be applicable in this case in 20 feet (plus) water.

Tables 1 and 2 will be modified to numerical summaries of the sediment data collected in 1986 and 1990. The initial intent was to generally summarize the last testing results to provide a (Problems and Needs) overview for the EIS. More specific data has been and is coordinated via our on-going harbor sediment sampling and analysis program. The next sediment sampling, analysis, and associated coordination for Cleveland Harbor is scheduled for this year (1993).

The Final EIS should discuss how the attainment of water quality standards will be assured, as the DEIS mentions only that a mixing zone will be sought from the Ohio EPA for the effluent discharge, and that a concentration of 100 mg/L total suspended solids will try to be achieved in the effluent. The Final EIS should identify measures that will be taken to minimize suspended solids. The request for a mixing zone should be done after other opportunities have been shown to be lacking.

36. The EIS SECTION 2 subsection entitled THE CONFINED DISPOSAL FACILITY (CDF) AND DIKE FILTRATION PROCESS (paragraph 2.62-2.75) generally describes the CDF containment process. Paragraphs 2.64, 2.67, 2.70 and 2.71 discuss testing program results pertaining to CDF processes and water and sediment quality issues. These pertain to measures identified to contain sediments and pollutants, to minimize suspended solids, and to satisfy water quality issues. These items are discussed in some further detail in EIS APPENDIX EIS-B SECTION 404(a) Public Notice and SECTION 404(b)(1) EVALUATION. For example reference paragraphs 2.2, 2.3, 2.4, 2.5.5, 2.6, (CDF Processes), 3.1.5, 3.2.1.2.1, 3.2.5.1, 3.3.2.1, 3.3.4, 3.5.8, 3.6.2, 3.6.3, 3.6.4, and 4.6...

...Therefore, extensive measures are taken and identified to contain sediments and pollutants, to minimize suspended solids, and to satisfy water quality issues prior to weir discharge and request for a small mixing zone (if necessary).

THE CONFINED DISPOSAL FACILITY (CDF) AND DIKE FILTRATION PROCESS section and ENVIRONMENTAL EFFECTS - NATURAL ENVIRONMENT (RESOURCES), WATER QUALITY section of the EIS; and sections of the EIS: APPENDIX EIS-B - SECTION 404(b)(1) EVALUATION REPORT have been somewhat expanded in this regard.

Additionally, and more specifically, paragraph 3.6.2 Determination of Compliance with Applicable Water Quality and following paragraphs of the 404 Evaluation Report (APPENDIX-EIS-B) have been revised to provide a brief more comprehensive summary pertaining to water quality compliance and mixing zone including incorporation of a comparison table (Attachment 10 (table)). The 404 Evaluation Report (APPENDIX-EIS-B) is referenced in numerous and appropriate sections of the EIS.

3c. The plan location of the CDF overflow weir has been included with the RECOMMENDED PLAN section of the EIS and associated sections of the Letter Report and Section 404 Evaluation Report (EIS Appendix). The plan location of the CDF overflow weir is at the northern corner of the CDF while pumpout into the CDF would likely be initiated along the northeastern dike vicinity and possibly migrate along the dike toward the CDF overflow weir. This arrangement would provide a shorter distance from the dredging area to the pumpout site (into the CDF) and reduce discharge turbidity by maximizing settling distance between the pumpout site and the CDF overflow weir.

The actual dredging operation is not specific but only general to this report. The intent of this Letter Report and EIS is to specifically address the need for, development of, and utilization of the NEW CDF FACILITY (the major proposed harbor operations and maintenance feature change); however, since the development of the new CDF is an integral feature with other harbor operations and maintenance features, they are presented generally to provide a general overview of harbor operation and maintenance and to depict the general interrelationship. Other harbor operations and maintenance features were initially specifically addressed in other harbor operations and maintenance key cross-reference documentation including: Final Letter Report and Final Environmental Impact Statement, Operations and Maintenance, Cleveland Harbor, Ohio, 1974, and amendments; Final Letter Report and Final Environmental Impact Statement, Construction and Utilization of a Confined Disposal Facility, CDF 14, Cleveland Harbor, Ohio, 1975, and amendments; and Supplemental Information Report, and Environmental Assessment and Finding of No Significant Impact (EA-FONSI) and 404 Evaluation Report, Lake Erie Littoral Drift Nourishment at Bratenahi and Perkins Beach, Cuyahoga County, Ohio, 1985 and amendments. These key cross-reference reports are amended periodically, as necessary, particularly with reference to periodic sediment sampling, testing, and coordination (about every five years) and associated amending operation and maintenance Public Notices, Environmental Assessments, 404 Evaluation Reports and requests for annual dredging and disposal 401 Certification. These serve to: continually amend various operations and maintenance key cross-reference documentation; to determine sediment and associated effluent quality and characteristics; and, if noticeable changes in quality and characteristics or procedural guidelines, to indicate additional testing needs and possibly

The DEIS states that during filling operations, when the desired suspended solids concentration is reached in overlying water, the effluent would be slowly discharged over the weir by successive weir board removal. The Final EIS should identify the location of the proposed discharge site. In addition, a discussion should be included on how the Corps intends to reduce the amount of sediment resuspended or spilled into the water column during dredging and transportation of the materials to the CDF. This discussion should include both operational control and turbidity containment technologies. Proposed monitoring activities for the quantity and quality of effluent being released should also be discussed as well as what measures would be taken if the effluent is highly contaminated.

modification to operation and maintenance procedures. Since the currently utilized CDP 14 will be filled within the next few years, this Letter Report and EIS will serve specifically to replace the previously referenced harbor operations and maintenance key cross-reference reports pertaining to CDP 14. However, even though not considered specific to this report, dredging operations and considerations have been discussed in some further detail, as requested.

As indicated previously, operations and maintenance dredging and disposal activities are coordinated on almost an annual basis while requesting State 401 Certification. The most recent 401 Certification for operations and maintenance dredging and disposal (12/31/92) indicates that certification is issued subject to the following condition:

"Extreme care must be employed throughout the course of this project to avoid the creation of unnecessary turbidity which may degrade water quality or adversely affect aquatic life outside of the project area."

There are no additional specific restrictions pertaining to barge/hopper overflow, dredging equipment, and/or water quality parameters and monitoring, at this time, other than normal operating and monitoring (testing program) procedures/considerations. Some considerations follow...

...As mentioned previously and indicated in the EIS (paragraph 2.50 and 2.57) and sections of the Section 404 Evaluation (Appendix):

Project contractors would be required to comply with the Corps of Engineers Civil Works Construction Specification entitled "Environmental Protection" (CW-01430, dated July 1978) pertaining to measures to be applied during construction/operations to protect significant water and associated land environmental resources (i.e., noise, dust, erosion, turbidity, etc.).

These requirements are included in project plans and specifications and would invoke use of practical measures to address such concerns, particularly if a problem may be or becomes evident. However, different contractors may use different equipment, which may require different protection measures, which makes directed use of specific measures difficult in most cases. A number of measures may be considered relative to the referenced situation however. Reference the following paragraphs. Generally, protected resources and measure effectiveness must reasonably justify measure implementation. Additionally, Federal, State, and local personnel periodically inspect construction operations for evidence of and/or measures to address such concerns.

Some water column turbidity (resuspension of sediments) will be unavoidable during dredging operations regardless of the method (equipment) utilized. Of note, testing in the vicinity of dredging operations at other harbors generally indicate only temporary minor adverse impacts to water quality in the immediate vicinity of the dredging operations due to the adsorption factor.

While hydraulic or mechanical hopper dredging may minimize initial surface water column turbidity, eventual filled hopper overflow will generate some



turbidity from the surface. Considered measures to minimize water column turbidity in this situation (as necessary) may include: reasonable rate of operation, overflow considerations (i.e., amount/settling/filtration), and possibly downstream (i.e., sft) silt curtains. Of note, specific testing in the vicinity of hopper overflow dredging (i.e., Buffalo Harbor, 1984 and Rochester Harbor, 1986; Aqua Tech) indicate only temporary minor adverse impacts to water quality in the immediate vicinity of the dredging operation.

Mechanical dredging primarily causes turbidity when the bucket and dredged material is dragged up through the sediment and water column. Considered measures to minimize water column turbidity in this situation may include: reasonable rate of operation, monitoring to make sure the equipment is working properly (i.e., fully closed bucket), minimizing bucket to barge spillage (i.e., proximity, possibly spill troughs), if barge overflow (amount/settling/filtration considerations), and possibly downstream (sft) silt curtains.

Associated considered measures for transporting and discharging dredged materials into the CDP may include: reasonable fill and transport rate to avoid spillage, monitoring vessel containment items and measures, splash boards, monitoring discharge equipment containment items and measures, and spill troughs.

These last few paragraph items have been incorporated in the CONTINUED HARBOR OPERATION AND MAINTENANCE section of the EIS.

Of note, the USEPA Assessment and Remediation of Contaminated Sediment (ARCS) program, in coordination with the Corps and others, includes more specific investigation and comparison of effects of various dredging methods and associated environmental protection measures.

#### Sediment Load Reduction

It is stated in the DEIS that such of the sediment deposited in Cleveland Harbor originates from land erosion/runoff, and that some reduction in the quantity of sediments can be achieved through more effective erosion-abatement procedures in agriculture, forestry, and construction in the Cuyahoga River Watershed. However, it is also stated that this measure involves several agencies, it will require continued and long-term efforts, and that an effective program of erosion control and the necessary education program to implement such a plan will require new or revised legislation, time, and funding which are not now available.

The implementation of erosion control measures is supported by Senator John Glenn who, in 1991, introduced the Great Lakes Sediment Reduction Act. The Act was developed to promote effective and efficient source reduction of sedimentation in Federally authorized commercial harbors, channel maintenance project sites, and areas of environmental concern in the Great Lakes basin. This position is also supported by the U.S. Fish and Wildlife Service, as indicated in their letter of

#### 4. Sediment Load Reduction

The intent of the PLANS ELIMINATED FROM FURTHER STUDY section of the EIS is to briefly discuss considered measures/alternatives, how they relate to this study/project, and why they were reasonably eliminated from further consideration for this study/project. Therefore, they were not discussed in significant detail in the draft report. Extensive discussion, in fact full reports, could be generated pertaining to considered programs/measures (i.e., sediment load reduction, pollution control, AOC-RAP programs, etc.) but study scope and authority, practicality, and an increasingly critical time constraint, significantly limits extensive consideration/discussion of potential long-term measures for this study/project. We have, however, expanded our discussion of this measure to some degree, as requested.

As indicated in EIS paragraphs 2.07, 2.11 and 6.19, some progress in this regard has been accomplished and continues to be pursued. A number of cooperative effort water resources basin studies were coordinated by the Corps of Engineers, primarily in the 1970s and early 1980s. Two which include the Cuyahoga River Basin area were the Lake Erie Basin Resource Management Study (1979) and the Cuyahoga River Basin Restoration Study (Interim, 1971). These studies investigated various water resource problems and needs in the basins in order to develop a long-term framework plan. Many of the considered measures and recommendations have been pursued, to the extent possible, by the

February 11, 1992 which stated, "In our opinion, the most economical and environmentally sound solution to maintenance dredging and disposal of dredged material is to keep the sediments out of the Cuyahoga River navigation channel. The implementation of the upland and floodplain erosion control management plans are the type of long range planning which should be implemented."

Our Agency concurs that measures should be taken to reduce the amount of material entering the Cuyahoga River Watershed so that the volume of sediments reaching the navigation channel may be greatly reduced. The implementation of well-targeted upstream erosion and run-off prevention measures would be economically feasible because they could pay for themselves in dredging savings. Such measures may include bank stabilization, to protect against scour and erosion, the use of sediment basins to trap material, and changes to farm techniques (i.e., the use of filter strips and crop residue). Information should be provided in the Final EIS on the types of erosion control measures that are proposed to be implemented, or the steps that your agency is taking to work with other agencies, Federal, State and local, to implement these measures.

various agencies within their authority, mission, and available resources (funding) (i.e., soil conservation, erosion protection, flood damage reduction, navigation, conservation, recreation, land use planning, water quality, etc.). There is also a limiting factor to full implementation, however, in that, while study funding and accomplishment may be one thing, accomplishment of actual programs/measures/projects within available agency authority, mission, and available resources (funding) is much more complicated and difficult, and is becoming increasingly difficult.

As mentioned in EIS paragraph 6.19, the Cuyahoga River Basin Restoration Study identified potential erosion protection measures for the watershed. Pursuit of the considered streambank protection measures could not be approved by the Corps higher authority because the measure purpose is considered to be outside the authority, mission, and resources of the Corps and would not meet Corps erosion protection project criteria. The measures were considered (possibly) to be more within the authority and mission of the Department of Agriculture, Soil Conservation Service. Unless Corps erosion protection authority is expanded or a special exception is directed (within other legal limits) from higher authority, implementation of such measures by the Corps is not possible.

On a more positive note, a number of on-going and potential future programs contribute toward this effort. For example: We understand that the U.S. Department of Agriculture - Soil Conservation Service is working with farmers/land owners to implement a "Best Management Plan" program (by 1996), which in part would include land management measures which would help reduce soil loss/run-off. The (PEMA) National Flood Insurance Program floodplain management measures will continue to contribute toward this effort. The (USEPA) National Pollutant Discharge Elimination System for Storm Water Discharges program will contribute toward this effort. The Corps River and Harbors Act and Clean Water Act permit authority pertaining to construction or fill in navigable waters and U.S. Waters (respectively) will continue to contribute toward this effort. Of note, the Corps of Engineers, Buffalo District is coordinating (in conjunction with numerous other agencies and interests) a specially authorized pilot study for long-term management of dredged material for Toledo Harbor, Ohio. This more extensively pursued alternative measures other than construction and use of new confined disposal facilities (CDFs), including consideration of Sediment Load Reduction measures (i.e., Non-Structural: crop residue management, conservation cropping sequence, alternative crops; Structural: streambank erosion protection, filter strips, grassed waterway, wetland creation/sedimentation ponds, agricultural run-off retention reservoir). Findings will likely further advance consolidation and feasibility of potential alternative measures for other areas.

Similar statements have been included to expand EIS paragraphs 2.07 - 2.11 and 6.19, etc.

#### 5. Recreation Impacts

As indicated in EIS paragraphs 4.77 - 4.79 and associated Table 5 - Comparative Impacts of Detailed Plans and Summary Table A, overall net impacts to recreation due to project implementation would not be expected to be significant. No special mitigation measures are proposed. The "harbor-of-refuge" area remaining after project implementation should remain sufficient

#### Recreation Impacts

In addition to commercial activities, Cleveland Harbor is used by a large number of recreational boaters. The DEIS states that major marinas are located along the Lakeshore Harbor, East Basin, immediately west of the west breakwater, and at the upper end of the Old River. These facilities accommodate many recreational vessels. Implementation of the preferred alternative would result in the loss of about 68 acres of harbor area that is protected by the Cleveland off-shore breakwater. This area is used by boaters as an area of refuge from the high energy wave-prone areas of Lake Erie and is also used for such activities as water skiing. Indicate in the EIS that...

proposed to compensate for this loss of protected harbor area. A potential mitigative measure might be the construction of a new area of refuge in Lake Erie to replace the lost harbor area used for various recreational activities.

to provide protection to small vessels during severe storm conditions. Other recreational trade-off (compensation) items include the following.

The dike shoreline fishing area lost inside the new CDP would be replaced and possibly improved by the new dike shoreline fishing area.

Boating and waterskiing activities which could not occur in the 68 acre project area with implementation of the project, could occur in adjacent harbor areas and outside the harbor breakwaters (except probably waterskiing during moderate to severe lake conditions and some boating during severe lake conditions).

Dredging removal and disposal and confinement of polluted sediments in the CDP will enable continued maintenance of navigation channels (including recreational) and protect and gradually improve water, sediment, and aquatic habitat, and the associated recreational environment in the harbor and Lake Erie.

The city of Cleveland is developing waterfront recreational developments in the waterfront area including marina facilities in the near project vicinity. Eventual filling and use of the CDP area to expand and/or relocate Burke Lakefront airport facilities, can eventually make other areas available for completion of planned recreational developments.

The recreational impacts section (paragraph 4.77 ect.) has been modified slightly and accordingly.

#### 6. Pollution Prevention

This is an interesting consideration, and we would like to review further information on these projects and potential C/D sources. We are aware of several Federal, State, and local (including private) resource recovery programs and/or projects which are increasing with such program emphasis. This is an unprecedented measure for CDP construction, however, and will not be acceptable until substantial testing and guidelines can be established. Immediate concerns pertain to consistent and acceptable quality standards to meet/equal project design criteria. Additionally, this would require coordination of supplemental planning documentation and Section 404 Evaluation.

#### Pollution Prevention

The Ditz states that the dike wall will be built with various sizes of rock ranging from material passing through a #200 sieve to 2.5 ton armor stone, and that the construction material would be obtained from a permitted/licensed source. In accordance with our Agency's pollution prevention strategy, we recommend that your agency consider the use of uncontaminated construction/demolition (C/D) debris as project materials. C/D debris is currently being used in a variety of road construction and airport development projects to increase the lifespan of the road/runway surface and to reduce the volume of material being deposited in landfills. Please feel free to contact our Agency for information on these projects and/or potential C/D sources.

U.S. Department of Housing and Urban Development  
Columbus Office, Region V  
200 North High Street  
Columbus, Ohio 43215 2499

Letter Dated:  
April 28, 1993

U.S. Department of Housing and Urban  
Development - Region V

PAM



28 APR 1993

COMMUNICATIONS

April 26, 1993

Colonel John V. Morris  
District Commander  
Buffalo District, Corps of Engineers  
Department of the Army  
1776 Niagara Street  
Buffalo, New York 14207-3199

Dear Major Morris:

This is in response to your letter concerning the Draft Letter Report and Draft Environmental Impact Statement (DEIS) and Environmental Agencies for the Modifications of the New Confined Disposal Facility (CDF) for the Cleveland Harbor.

The CDF project does not present any special interests and/or concerns to the U.S. Department of Housing and Urban Development.

Thank you for the opportunity to comment. If you should require any further input from HUD, I may be reached at (614) 469-5617.

Sincerely,

Ross S. Carlson  
Environmental Officer

1. Thank you for your review and comments.  
No further response necessary at this time.



**STATE CLEARINGHOUSE**  
State of Ohio - Office of Budget and Management

30 EAST BROAD STREET • 34TH FLOOR • COLUMBUS, OHIO 43266-0411 • (614) 456-0697 / 0698

U.S. DEPT OF THE ARMY, CORPS OF ENGINEERS  
1776 NIAGARA STREET, ENVIRONMENTAL ANALYSIS  
BUFFALO NY 14207-3199

Attention: ROD SHITW/JAMES KAUSTEN PHONE: (716)879-4173

RE: State Clearinghouse Intergovernmental Review-Application Receipt Letter

Project Title: DRAFT ENVIRONMENTAL IMPACTS STATEMENT  
Project Description: CLEVELAND HARBOR, NEW COMBINED DISPOSAL FACILITY  
(CDF), IMPACTS CUYAHOGA COUNTY, OHIO, DRAFT LETTER &  
EIS (SEE OH950127-8044-56422 FOR PREVIOUS REVIEW)

State Application Identification (SAI) Number: OH950129-4173-56422  
Proposed Federal Funding: \$00

Dear Applicant:

The State Clearinghouse has received your notification for either a direct federal development project, environmental assessment/impact statement, or, an application for federal funds. The review process has begun at the State level and will be completed on 93-05-08.

A State Application Identification (SAI) number has been assigned to your project. Please refer to this number in all future contacts with the State Clearinghouse and the Area Clearinghouse(s). This number should also be forwarded to the funding agency, to become part of your application.

Sincerely,  
*Richard W. Wain*  
Project Coordinator

Letter Dated:  
January 1993

State Clearinghouse - State of Ohio  
Office of Budget and Management

1. Thank you for your review and comments.  
No further response necessary at this time.

SENT BY: Xerox Telecopier: 7020 : 4-23-89 : 15:32 : 01628741 : USAED: BFO--ENG/E: A: B 2

OFFICE OF BUDGET AND MANAGEMENT  
STATE CLEARINGHOUSE TRANSMITTAL

30 E. Broad St., 34th Floor  
Columbus, Ohio, 43266-0411  
Phone (614) 465-0697 / 0698

Ohio Historic Preservation Office

Letter Dated:  
March 2, 1993

STATE APPLICATION IDENTIFIER NO: 0493079-1173-3642Z  
RESPONSE ON 60 DAY REVIEW SHOULD BE RETURNED 15 DAYS PRIOR TO CLEARANCE DATE OF: 93-03-08  
FOR FULL APPLICATION CALL BY :

RECEIVED FEB 04 1993

APPLICANT: U.S. DEPT OF THE ARMY, CORPS OF ENGINEERS  
ADDRESS: 1776 BIRMGHAM STREET, ENVIRONMENTAL ANALYSIS  
CITY: BUFFALO STATE: NY ZIP: 14207-3199  
ATTENTION: TUD SMITH/JAMES KASBITER PHONE: (716) 879-4173

PROPOSED FEDERAL FUND: \$00  
PROPOSED TOTAL FUND: \$00

PROJECT: BRAFT ENVIRONMENTAL IMPACTS STATEMENT

PROJECT USE: CLEVELAND HARBOR, NEW COMBINED DISPOSAL FACILITY (CDF), IMPACTS CUYAHOGA COUNTY, OHIO, BRAFT LETTERS 8  
EIS (SEE 0493079-1173-3642Z FOR PREVIOUS REVIEW)

REVIEW AGENCY: DEPARTMENT OF AGRICULTURE - FC  
DEPARTMENT OF NATURAL RESOURCES - FC  
DEPARTMENT OF HEALTH - FC  
DEPARTMENT OF TRANSPORTATION - A FC  
ON ENVIRONMENTAL PROTECTION AG - 3 FC  
CONSUMER - CLASSIFIED OFFICE - FC  
SUBCOMMISSIONER PRESERVATION OF FC

1. Thank you for your review.  
No further response necessary at this time.

CLEARINGHOUSE:  
NORTHEAST OHIO AERIALSIDE COORDINATING AGENCY (NOCA) - FC

Cleveland Harbor

SHPO

Reviewing Agency must complete this section.  
 COMMENTS: (1) which another sheet Comments cited in the Section must include (1) Report Letter of Issuance Agency's Report or specific plan or program used in the project; (2) Director of project of the proposed or approved plan or program; (3) Reviewer's recommendation (checked for or addressed to the project) and type of comments; and include SAH number on your comment sheet.

REVIEWING AGENCY POSITION ON PROJECT (Mark one only)  
 No comment  
 Clearance of the project should be granted.  
 Clearance of the project should not be delayed, but applicant should answer the reviewer's questions or concerns. See enclosed comments.  
 Clearance of the project should only be granted on the condition that the applicant use the recommendations in the enclosed comments. (Executive or Deputy Director Signature Needed)  
 Clearance of the project should be delayed until the applicant has satisfactorily addressed the concerns stated in the enclosed comments. (Executive or Deputy Director Signature Needed)

New County Disp.

PLEASE TYPE THE FOLLOWING INFORMATION

Agency Name: Ohio Historic Preservation Office  
Ohio Historical Center  
1885 Tolson Avenue  
Columbus, OH 43261

David [Signature]  
Marilyn J. [Signature]  
Date: 6/11/93

State: OH  
Zip Code: 43261

DATE: MAR 02 1993

OHIO HISTORIC PRESERVATION OFFICE  
FORM 1000 (Rev. 8/89)



**STATE CLEARINGHOUSE**  
State of Ohio - Office of Budget and Management

30 EAST BROAD STREET • 34TH FLOOR • COLUMBUS OHIO 43266-0411 • (614) 466-0697, 0696

State Clearinghouse - State of Ohio  
Office of Budget and Management

Letter Dated:  
March 8, 1993

Date: 03-08-93

U.S. DEPT OF THE ARMY, CORPS OF ENGINEERS  
1776 WILKINSON STREET, ENVIRONMENTAL ANALYSIS  
DIVISION BUFFALO NY 14207-5199

Attention: ROD SMITH/JAMES KANSTEN Phone: (716) 879-4173

RE: Intergovernmental Review, Environmental Assessment/Impact Statement Completion Letter

Project Description: CLEVELAND HARBOR, WEN COMBINED DISPOSAL FACILITY  
(CDWF), IMPACTS CUYAHOGA COUNTY, OHIO, DRAFT LETTER &  
EIS (SEE 09/00122-0044-36422 FOR PREVIOUS REVIEW)

State Application Identification (SAI) Number: 09/30129-0173-36422

The State Clearinghouse (Single Point of Contact) has reviewed the Environmental Assessment/Impact Statement for the above identified project that is covered by the National Environmental Policy Act of 1969, and any amendments; Intergovernmental Review Process (Presidential Executive Order 12572); Subministerial Executive Order authorized under Ohio Revised Code, Section 107.10(A); and/or other pertinent regulations and guidelines.

This document has been simultaneously reviewed by interested state agencies, with a notice to the impacted area clearinghouse(s). Our office may have attached comments for your consideration and/or response.

You should be advised that some of the reviewing state agencies may respond directly to you without submitting their comments through the State Single Point of Contact. We encourage our reviewing agencies to keep in direct contact with issuing agencies on all environmental assessment/impact statement reviews. Therefore, consider their directly generated comments as valid responses.

It is recommended that contact be made with all the commenting agencies. Addresses and phone are available on Individual Transmittal Forms and/or contained in a letter received by our agency. The comments which have been generated should become part of the proposal and responded to before a final decision is made regarding this assessment/impact statement.

Should this be a draft proposal, please provide our office with fourteen (14) copies of the final product.

Sincerely,

Larry W. Weaver, State Federal Funds Coordinator  
Office of Budget & Management

1. Thank you for your review and comments.  
No further response necessary at this time.



Ohio Department of Natural Resources

Letter Dated:  
March 23, 1993

ROUTING SLIP

KROONMEYER

WALTERS

KUREY

HEGE

LANNERS

BAZZO

BAKER

ALL STAFF

FILE

RETURN TO

RECEIVED

MAR 29 1993

U.S. Fish & Wildlife Service  
Reynoldsburg, Ohio

George V. Vohnovich - Governor  
Frances S. Buchholzer - Director

Division of Wildlife  
1840 Belcher Drive  
Columbus, OH 43224  
614/263-6300  
FAX 614/262-1143

March 23, 1993

Mr. Kent E. Kroonmeyer  
U.S. Fish & Wildlife Service  
Reynoldsburg Field Office  
6950-N Americana Parkway  
Reynoldsburg, Ohio 43068-4115

Dear Mr. Kroonmeyer:

The final Fish and Wildlife Coordination Act report for the proposed confined disposal facility (CDF) Site 10B at Cleveland Harbor has been reviewed and the Division of Wildlife (DOW) concurs with the report.

The DOW would also like to reemphasize two concerns raised in the final report. The first concern regards the upland disposal of dredged material versus construction of confined disposal sites. The utilization of the various upland disposal methods as referenced in the report would be highly favored over the loss and/or alteration of shore line and deep water habitat. Second, is the need to shift more attention to the source of the dredging disposal problem, i.e. upland erosion. The maintenance dredging of navigational channels and the disposal of the resulting dredge material is merely treating the symptoms of the real problem.

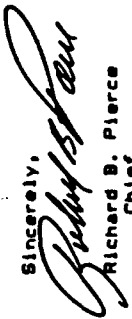
There is one additional concern the DOW has with the proposed CDF. Page 57, Item 4.17 of the Draft EIS states that efforts would be made, if possible, to live trap fish that are caught within the CDF once the dike is completed. The DOW believes, from past experience, that the cost to live trap far exceeds the value of the fish involved and would only remove a very small proportion of the fish actually caught within the enclosure. The loss of said fish would have an extremely marginal effect on the fishery of Lake Erie. Based on these factors the DOW recommends that a meeting be held to estimate the number of fish to be caught in the enclosure and derive a compensatory figure to be paid in lieu of the proposed trapping. The DOW believes that this would be a much more practical, economical, and efficient solution to the problem.

1. Thank you for your review and comments. These numbered response paragraphs correspond to your numbered comment paragraphs. Reference the U.S. Fish and Wildlife Service letter (dated March 31, 1993) and associated comments and responses.
2. The Corps of Engineers has no authority which would allow it to provide a cash contribution as compensation for fish lost as a result of dike closure. As indicated, the cost to live trap generally exceeds the value of the fish involved. In light of these factors, the Corps of Engineers must consider measures to increase the efficiency of the capture and/or release and pursue the measure on a very limited (very low cost) basis, or abandon the measure.



The DOW appreciates the opportunity to review and comment on the final report.

Sincerely,



Richard B. Pierce  
Chief

FEB 01 '94 10:56



State of Ohio Environmental Protection Agency

P.O. Box 1000, 1000 Westwood Dr.  
Columbus, Ohio 43260-1000  
(614) 644-6000  
FAX (614) 644-6000

P.2/2

George V. Valerich  
Governor  
Donald R. Schragardus  
Director

February 1, 1994

Re: Cuyahoga County / Cleveland  
Grant of 401 Certification  
Project to construct a confined disposal facility  
Public Notice No. (B) RCOS-24600

U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, New York 14207-3199

Gentlemen:

Pursuant to Section 401 of the Federal Water Pollution Control Act, Public Law 98-217, the Director of Ohio Environmental Protection Agency hereby certifies that the above-referenced project will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act. This certification is specifically limited to a 401 certification with respect to water pollution and does not relieve the applicant of further certifications or permits as may be necessary under the law. This Certification is issued subject to the following conditions:

Fill used in this project shall consist of suitable material free from toxic contaminants in other than trace quantities.  
Extreme care must be employed throughout the course of this project to avoid the creation of unnecessary turbidity which may degrade water quality or adversely affect aquatic life outside of the project area.

A permit to install may be required for C1 and C2 sewerline consolidation. Please contact Ken Bell at the Ohio EPA Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44097 (telephone: 216-963-1200).

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code by any person who was a party to this proceeding. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after the notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Law Division of the Office of the Attorney General within three (3) days of the filing with the Board. An appeal may be filed with the Environmental Board of Review, 216 East Tenth Street, Room 30, Columbus, Ohio 43266-0997.

Sincerely,

*Donald R. Schragardus*

Donald R. Schragardus  
Director

cc: Ted Smith, Buffalo U.S. Army Corps of Engineers  
Wayne Corrali, U.S. EPA, Region V  
Kent Krommeyer, U.S. Fish & Wildlife Service  
John Rupert, Comm. Office of Real Estate & Land Management  
Ken Bell, Ohio EPA Northeast District Office  
Annex-Marchant, Ohio EPA, RSW  
401 5110

I copy this to my file and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

*John Marchant* Date 2/1/94

OHIO E.P.A.  
FEB - 1 94  
DIRECTOR'S OFFICE

State of Ohio  
Environmental Protection Agency

Letter Dated:  
February 1, 1994

1. Thank you for your review and comments and 401 Certification. We will accommodate conditions of the 404 Evaluation and the 401 Certification. No further response necessary at this time.



# City of Cleveland

MICHAEL B. WHITE, MAYOR

DEPARTMENT OF PUBLIC HEALTH  
DAISY L. ALDRIDGE, DIRECTOR  
17253 10 23  
ASSISTANT DIRECTOR

Public Health, Commission  
Bureau of Construction  
17253 10, Ohio 44122  
919 644-3100 Fax: 944-2000

Mark E. Butler, Commissioner  
Division of Health  
919 644-3100  
John A. Stinson, Commissioner  
Division of the Environment  
919 644-3100  
100 B. Oak Avenue  
Cleveland, Ohio 44114  
919 644-3100 Fax: 944-2000

FEB 11 1993

February 5, 1993

Cleveland Local Air Agency  
9127 Miles Avenue  
Cleveland, Ohio 44105

U.S. Army Corp. of Engineers  
Buffalo District

Dear Sir or Madam:

The December 1992 Draft Impact Statement regarding the Confined Disposal Facility at the Cleveland Harbor has been received and reviewed by the City of Cleveland Division of the Environment as to impact on air quality. The Division offers the following comments:

1. Permitting - Depending on the length of the project and the activities involved, Air Permits may be required under both State and City regulations for fugitive dust control of roadways, gasoline dispensing operations, sandblasting and/or abrasive cleaning. Fugitive dust must be controlled during construction as outlined in the regulations.
2. Asbestos - Any asbestos containing material uncovered in any pre-construction demolition should be addressed in accordance with the applicable air regulations.
3. Odor Control - Unless it can be demonstrated the dredgings will be non-odorous, an odor control plan would be required with an emergency plan to immediately abate any odors in the case of a spill.
4. Air Quality Impact - Based on your report, it appears there will be no significant impact on the ambient air quality of this area as a result of this projects.

... continued ...

An Equal Opportunity Employer

City of Cleveland  
Cleveland Local Air Agency

Letter Dated:  
February 5, 1993

1. Thank you for your review and comments.

Project construction contractors will be required via plans and specifications to comply with the Corps of Engineers Civil Works Construction Specifications entitled "Environmental Protection" (CW-01430, dated July 1978) pertaining to measures to be applied during construction and operations to protect significant environmental water and associated upland resources (i.e., air quality, fugitive dust, noise control, turbidity and water quality control, storm water run-off and erosion protection, fish and wildlife considerations, trash and debris control, restoration measures, etc.). The contractor will also be required to obtain and comply with any necessary additional project permits. The Corps of Engineers and contractors are familiar with operational and longer-term measures to abate odor from deposition of dredged material should it become a potential problem.

U. S. Army corp of Engineers

February 5, 1993

Page 2

Should you have any further questions in this matter, do not hesitate to contact me or Ed Pasako at 441-7448.

Sincerely,

  
Judith A. Jinnone, Commissioner,  
Division of the Environment

cc: Director Alford, Department of Health  
Asst. Director Burnosky  
Diane Downing, E. A. to Mayor

s/cdf



**City of Cleveland**

MICHAEL R. WHITE, MAYOR

April 15, 1993



1000 PINEAPPLE DRIVE  
CLEVELAND, OHIO 44115-2118  
(216) 392-4000  
FAX (216) 392-2001

City of Cleveland  
Department of Port Control

Letter Dated:  
April 15, 1993

Mr. Tod Smith  
U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, New York 14207-3199

RE: Draft Environmental Impact Statement for the New Confined Disposal Facility at  
Barba Lakesfront Airport

Dear Mr. Smith:

Attached is a summary of the City of Cleveland's comments with regard to the above referenced matter. You will note in the comments that the City considers preparation of a Cooperation Agreement as critical at this point in the process. Thus, we ask that the Army Corps' counsel contact the City's attorney Ms. Genelle Allen, as soon as possible to discuss a Cooperation Agreement. Ms. Allen may be reached at (216) 664-2800.

The City looks forward to continue working with the Army Corps to see this project to completion.

Very truly yours,

Cynthia D. Rich, Director  
Department of Port Control

CDR:ch858

cc: Paul Patton  
Denny R. Williams  
William M. Ondrey Gruber  
Richard F. Horvath  
Genelle M. Allen  
Martha McCorbie  
Henry Cavanagh

An Equal Opportunity Employer

1. Thank you for your review and comments. The following numbered response paragraphs correspond to your numbered comment paragraphs. We hope that this and associated report revisions and discussions pertaining to LCAs will satisfactorily address your concerns for this project phase.

Please understand that the Letter Report, EIS, and Appendices are planning level documents developed for coordination to reasonably depict basic project existing and future conditions and problems and needs; coordination; alternative considerations, assessment (impacts), evaluation (accounts + & -), selection, and preliminary design. Many more specific project details are worked out during preparation of project plans and specifications after the basic project plan is identified/accepted (this process) and local cooperation agreements worked out. We can not reasonably consider every scenario and discuss every detail in these planning reports.

COMMENTS OF THE CITY OF CLEVELAND  
ON THE ARMY CORPS OF ENGINEERS  
DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)

April 15, 1993

(1) In general the City has two comments which affect the intended future use of the site once completed. The EIS should be amended to reflect this planned use as follows:

(A) that the intended use of Site 10B is to construct a replacement runway, not for fishing access or recreational use; and

(1) Site Use and Development

(1)(A) Both EIS paragraphs 2.75 and 4.79 indicate that "an completely filled and consolidated, the CDP would likely be utilized to expand or relocate Burke Lakefront Airport facilities. A misinterpretation relative to (assumed extensive) Site 10B recreational development may have occurred with the EIS abstract statement "... and potential future waterfront recreational access development." This has been revised for clarification.

The "potential future waterfront recreational access developments" refer to schemes being considered adjacent/peripheral to the existing or future airport (understandably not into or through the airport or runway approach surfaces) which may be facilitated/accommodated by CDP related future airport facility relocation or expansion. Recreation developments would not pertain to Site 10B proper or the airport, but adjacent/periphery and/or secondary effects/considerations. For example, previous coordination and the Cleveland Civic Vision 200 Downtown Plan - Downtown Lakefront Development Plan - North Coast Harbor project envisions such development adjacent to the southwest corner of the existing airport. See attached figures. Also, fishermen would likely fish (where allowable) from boat and/or shore along the dike stone. We need to retain such statements, however, in order to demonstrate some potential trade-off between recreational losses and gains. If this is not demonstrated, the city may be requested to provide/demonstrate alternative compensation measures to compensate for project related recreational losses. Reference USEPA letter. Of course, any such future developments are subject to further planning, development, environmental, FAA, etc. coordination, review, approval.

(1)(B) The elimination of the raised bench area is being coordinated with the environmental agencies due to dike stability, cost, potential avian attraction and air traffic safety, and operation and maintenance consideration/concerns.

The "raised bench areas for spawning habitat" item is more strictly related to "fisheries" rather than "wildlife". Of valid issue, in light of the proximity of the existing airport - is avian and wildlife attraction. A shoreline in itself is attractive to a variety of wildlife. The discussion on wildlife (EIS paragraph 4.37) indicates that the CDP site may also attract a diversity of wildlife during various stages of CDP fill levels. Aquatic birds ( i.e. seagulls, waterfowl) would likely be more attracted during initial fill stages when a protected calm water area exists in the facility, particularly in the spring and fall. Best management practices (ponded water, vegetation, etc.) should be utilized to minimize potential conflict with aircraft operations at the existing airport during the life of the CDP. Use of the CDP discharge weir may become more critical in this light. Best management practices should be further coordinated, formulated, formalized as project operational plans become finalized. EIS paragraph 4.37 has been modified to some extent in this regard.

(B) the plan for raised bench areas for spawning habitat should be deleted from the Site 10B plans and the EIS, since it is not necessary for the construction and operation of the disposal facility, and could seriously hamper the intended use of the site when it is completed. (See e.g., p. EIS-59, Wildlife 4-26.)

The EIS refers to "local cooperation agreements" (LCA) under the heading "Unresolved Issues" (see p. v of Draft EIS and Appendices dated December 1992).

The City agrees that such an agreement or agreement is an unresolved issue. The cooperation agreement is the most critical issue at this point in the site or planning and development process. The environmental issues raised in the EIS, for example, must be addressed in an agreement between the Army Corps and the sponsor, the City.

The City received a draft Cooperation Agreement several years ago from the Army Corps, but was told in late 1991 that a new draft would be presented to the City. To date the City has received no such draft Agreement.

In a recent conversation with Army Corps personnel the City was told that if the City entered into an LCA, the City would have to pay a portion of the construction costs apart from the sewer extensions. This contradicts the EIS and all previous information given to the City. See e.g., p. EIS-19, Section 2.22(b), which states that 100% of the construction costs, other than the sewer extensions, would be paid for with Federal funds; and an LCA is mentioned several times in the EIS, as noted above. The individual from the Army Corps informed the City that a Resolution adopted by City Council would be preferable to the Army Corps, and would allow the City to act as local sponsor without paying up to half the construction costs. This issue must be clarified.

The environmental issues raised by the EIS and the City's own concerns which the Cooperation Agreement must address are described below. In addition, Section 2(b), p. 4 of the Draft Letter Report (Second Supplement) dated December 1992, includes statements of City requirements which are not consistent with the City's understanding of its responsibilities. These provisions should be dealt with in a Cooperation Agreement, not listed in the EIS. The City has not included in these comments all of its legal objections to legal issues raised by the EIS.

Finally, the City is confused by the statements in the EIS that the Cleveland-Cuyahoga County Port Authority is also a local sponsor for Site 10B. See page EIS-24, Table 4. The City believes this statement is in error.

The Local Cooperation Agreement (LCA) requirement will be fulfilled by the passage of a resolution by the City of Cleveland regarding the requirements of the local sponsor. A suggested ordinance was provided to the city in February 1993 which detailed the assurances which must be provided by the city prior to beginning construction on the project. These assurances include furnishing all lands required for the project, providing all relocations, and local maintenance of the facility after completion of its use for disposal purposes.

The city is required to provide all costs for lands and relocations required for construction of the project. The construction of the CDF is to be funded with 100% Federal funds. The information provided in the referenced conversation was in error. As stated above, no LCA is required for the project and the EIS is correct in stating that 100% of the construction costs, other than for lands and relocations and future maintenance costs are to be provided by the Federal government.

The Cleveland-Cuyahoga County Port Authority is not also a local sponsor for Site 10B. The EIS has been revised. The paragraphs which immediately follow the PLANS CONSIDERED IN DETAIL heading (page EIS-20) of the EIS SECTION 2 ALTERNATIVE CONSIDERATIONS AND RECOMMENDED PLAN section (including paragraph 2.25(b)), simply summarize key coordination after completion and initial coordination of the proposed Site 10 CDF (1987) reports, and the initiation of (and reason for) further studies. At the time, the Cleveland-Cuyahoga County Port Authority was considered to be the primary local sponsor in cooperation with the city of Cleveland.

Planning and environmental guidelines require that the Corps of Engineers coordinate projects with a multitude of potential project interests. Additionally, the Corps must identify potential and eventually actual local sponsors for various phases of project development. During initial study coordination, several interests were identified as potential local sponsors for various alternative considerations. Since the project reports oversee planning coordination/considerations, the study/reports reference (i.e., EIS page 25, Table 4) various project interests, and potential and actual local sponsors. EIS page 25, Table 4, identifies considered likely potential local sponsors during alternative evaluation. As indicated, during alternative considerations, both the Cleveland-Cuyahoga County Port Authority and the city of Cleveland were considered likely potential local sponsors for the Burke East Site and the Site 10 alternatives. The Ohio Department of Natural Resources was considered the most likely potential local sponsor for the East 53th Street Marina site alternative. We understand that the city of Cleveland is the current primary local sponsor for Site 10B.

Of note, primary local sponsors (local point of contact to make agreements with the Federal point of contact) sometimes may make other agreements with other project interests (co-sponsors) to share in project costs and benefits.

In retrospect, the quest for a new additional dredged material disposal facility to dispose of dredged material not suitable for open-lake disposal from Cleveland Harbor has been long and difficult. Study coordination was initiated at least as far back as early 1985. The study generated several

preliminary Letter Reports and associated DEISs and Appendices, as indicated in the current EIS-ALTERNATIVE CONSIDERATIONS section. A 1987 report proposed a CDP at Site 10. This was not feasible, since no potential local sponsor would/could finance the extension of storm sewer lines through the site. A 1990 report proposed an alternative CDP at the Burke East site. The potential local sponsors withdrew support for this alternative due to water quality and water/land use issues which emerged. At this point, the need for a disposal facility for the near future became critical, and alternative 14A or the raising of the existing CDP Dike 14 to slightly increase its capacity became necessary and is being coordinated (1992-93). Finally, this 1992-93 report proposes Site 10B, a reduced version of the Site 10 proposal, but with fewer storm sewer extensions and associated reduced local sponsor responsibility costs.

Concurrently, during initial study coordination (1985), both the Cleveland/Cuyahoga County Port Authority and the city of Cleveland indicated willingness to serve as local sponsor(s) for the study/project. During the initial studies, the Cleveland/Cuyahoga County Port Authority was considered to be the primary local sponsor in cooperation with the city of Cleveland. (Reference correspondence) The 1987 reports identified the Cleveland/Cuyahoga County Port Authority as the primary local sponsor.

Therefore, the study/report reference. Apparently, after preparation and initial coordination of the Site 10 CDP (1987) reports and with initiation of continued studies (1988-89), the city of Cleveland became the primary local sponsor. [Reference correspondence: Cleveland/Cuyahoga County Port Authority letter dated October 23, 1989 (Modification to Dike 14 EIS) and city of Cleveland letter dated July 10, 1989] The Department of Port Control of the city of Cleveland was identified as having administrative authority over Burke Lakefront Airport and the city harbor and would act as the local contact. (Burke East Site, 1990 reports) This was reaffirmed (reference city of Cleveland letter dated August 9, 1991) for this most recent study phase (Site 10B CDP, 1992 reports).

### (3) Environmental Issues

#### (3)(A) Testing of Sediments

The EIS states that "Sediments from the Cleveland Harbor Federal navigation channels are periodically sampled and analyzed for pollutants (approximately every 5 years)" (page EIS-6, paragraph 1.10). The EIS indicates that the most recent full scale Outer Harbor and Cuyahoga River sediment sampling and analysis occurred in 1986, while sediment sampling and analysis for the upper most Cuyahoga River Federal navigation channel occurred in 1990. This latter area was previously sampled in 1988. This sediment sampling and analysis is accomplished and funded via the Buffalo District Operations and Maintenance program on a priority, as needed basis, relative to surveyed dredging needs, and as funding is available. Additionally, the Corps of Engineers is coordinating with the USEPA to finalize new sediment sampling and analysis procedures (relative to revised Clean Water Act agreements). This should be better established prior to implementation of a major sediment sampling and analysis program. A full scale Outer Harbor and Cuyahoga River sediment sampling and analysis program is currently scheduled for this (1993) summer. The city may see the results of this testing. We expect that most of the material dredged from Cleveland Harbor will be considered 'unsuitable for unrestricted open-lake disposal' for some time into the future.

### (3) Environmental Issues

#### (A) Testing of Sediments

The EIS states that sampling of sediment is performed at least every 5 years (Pp. EIS-6 and 7, Section 1.10). However, the sampling of sediments reflected in the EIS is more than 6 years old. The sampling of sediments in all portions of the river and harbor to be dredged must be updated to the present time. The City would like to see the results of this testing.

This updated testing is particularly needed because, as the EIS states, considerable progress in point, non-point and residual pollution control has occurred in the last few decades, and it is expected that sediments will eventually be nonpolluted. It is vital to know whether this progress has continued, slowed or reversed in the last 6 years.



The City believes the materials deposited into the Site 10B, once completed, must be tested on an ongoing basis before deposit. The City would like to see the results of this testing.

It is conceivable that all or portions of the River and Harbor will have dredgings which are not polluted within the next 18-20 years, which would be 24-26 years since the last testing of sediments. This 18-20 year period from today is the expected duration of the site 10B construction and filling.

(C) Source of Deposited Materials

The EIS states that Site 10B "may" be used for other dredgings, estimated to total 15,000 cubic yards per year. The City insists that the Army Corps agree that no permit for the deposit non-Army Corps dredgings into Site 10B be granted without City approval. The City will not approve, and strongly opposes, the deposit of dredgings from outside the Cleveland Harbor and the immediate Cleveland area. In addition, the City opposes the deposition of dredgings from any "super fund" site, or any other site (even within the Cleveland Harbor) which is considered a "hot spot" of contamination or has excessive concentrations of PCBs, radio active material or other highly toxic materials.

(3)(C) Source of Deposited Materials

Generally, during construction and use of the CDF, the facility would be considered to be a Federal public facility, funded by public funds, developed primarily to accommodate disposal of dredged material considered to be "not suitable for unrestricted open-lake disposal" dredged from Federal navigation channels (and possibly some adjacent channels) at Cleveland Harbor, as indicated in the Letter Report and EIS. As such, it would be difficult to deny reasonable public requests for use of the facility to dispose of reasonable quantities of acceptable quality material dredged from Cleveland Harbor. However, except for possibly very minor actions considered (found) to be of no significant impact (FONSI) under a nationwide permit system, substantial actions require coordination with key project interests, which would include the city of Cleveland. The city of Cleveland should reserve comment based on review of proposed actions and overall city and/or public interests.

Since this Letter Report and EIS and appendices does not address such actions, use of the CDF for disposal of materials from outside the Cleveland Harbor area, or from any "Superfund" site or other such site would need to be addressed by separate study/report. This would include coordination with the city of Cleveland. The CDF is not designed for disposal/containment of "hot spot" or "excessive concentrations" of hazardous, toxic, or radioactive waste (HTRW). Any CDF disposal considerations of such material would require testing assurances that the material to be disposed of is at, or is pretreated, to levels acceptable for CDF disposal.

(3)(D) Cover of Clean Fill

The U.S. Army Corps of Engineers will coordinate with and reasonably facilitate the local cooperators pertaining to CDF capping needs based upon a summary of analysis of the contamination levels of the contained material and any additional containment (capping) needs when the CDF approaches capacity. "Evaluating Environmental Effects of Dredged Material Management Alternatives - A Technical Framework," EPA-842-B-92-008, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, Washington, DC, 1992 provides a technical framework for this analysis...

...While the dredged material placed in this type of CDF is considered "not suitable for unrestricted open-lake disposal" relative to the Clean Water Act and associated considerations, it is usually, and considering improving quality, increasingly more acceptable as site cover. A separate cover of clean material other than last dredged material fill is usually not required for this type of CDF, although it is often a consideration and sometimes done with local site development. Quality of final discharged dredge material and proposed use of the filled site contribute to this consideration. In this case, based on present scenarios, a separate cover of clean fill material will probably not be required.

(D) Cover of Clean Fill

The City believes that a final cover of clean fill of sufficient thickness to avoid future problems with excavation for Airport purposes and environmental problems must be included in the plans for Site 10B. The EIS does not, but should, more thoroughly address this issue, particularly as it may affect the life of the site for dredgings and/or the design of the Dike structure. The cover would have to be designed and constructed by the Army Corps after review and approval by the City, and after review by Ohio EPA and any other appropriate federal or state agency. The statement in the EIS that a cover is "likely" is not sufficient. (EIS-31, Section 2.63).

Cover consideration analysis is best conducted during final stages of CDF use for dredged material disposal and preparation of plans for final site development. Consideration at this time is premature. More information in this regard will be known in the future.

The EIS statement phrase... covered by a layer of clean fill material... may be misinterpreted and may be inappropriate for the situation and has been eliminated from the statement.

(3)(E) Leaching and Dike Failure

The CDF dike wall is designed to meet Federal design standards which take into account the foundation conditions, wave climate and local currents, water quality considerations, and the stability of the structure itself. A Design Analysis is being prepared for this project which will document the field investigations, materials testing, design criteria and standards, and calculations of the various components of the design of the containment structure. The slope stability of the structure is designed to a factor of safety of 1.3 and construction of the structure is monitored closely by experienced Corps of Engineers construction representatives to insure that the structure is built as designed. The stone sizes are developed based upon wave and current data specific to Cleveland Harbor and past experience with several similar structures that are functioning as designed within the harbor (there are three other CDFs within the harbor). The Corps has considerable experience in rubblemound type construction and this type of structure, with proper maintenance, has proven to be very durable in the marine environment. In terms of water quality, a seven foot thick layer of stone filter material and a geomembrane are designed to contain the polluted sediments, and their effectiveness has been tested in the laboratory and in application at other similarly-designed CDF sites (see paragraphs that follow). Although there have been no known failures of CDFs in the Great Lakes that have leached polluted sediments back into the open water environment, if one were to occur the results would not be catastrophic. A localized dike failure would allow a relatively small portion of the polluted sediments contained therein to reenter the open water environment where they would create temporary turbidity problems until they have sufficient time to settle out of the water column. Because the primary pollutants are adsorbed to the sediments there would be only a short term impact on water quality. In the unlikely event of "failure" of a section of the dike, repairs could be made relatively quickly by restoring the original cross section with additional stone materials and the polluted sediments could be collected by dredging in the vicinity of the breach and returning these sediments to the CDF.

The Corps of Engineers and/or its contractors would be responsible for the facility and its operations during construction and filling of the CDF, including any leaching problems or dike failure due to settling or stability problems. The final owner/steward of the filled CDF and/or its contractors would be responsible for inspection (in conjunction with the Corps of Engineers) and maintenance of the CDF. With proper dike wall construction and maintenance, the potential for dike wall failure is expected to be minuscule.

This general summary has been included in the EIS. Specific final Federal and local short and long term agreements are best detailed in associated documentation.

In clarification, as indicated in the EIS section entitled THE COMBINED DISPOSAL FACILITY (CDF) AND DIKE FILTRATION PROCESS (paragraphs 2.62-2.75), two major processes occur when dredged material is placed into the CDF to separate sediments and associated adsorbed pollutants (most pollutants are adsorbed to sediment particulates) from the water: (1) Sediments and pollutants are filtered out while some effluent passes through the dike wall and (2) sediments and pollutants settle out from the ponded water column;

(B) Leaching and Dike Failure

The EIS does not address adequately the issues of potential leaching of dredged material into Lake Erie, the potential effect, if any, of such an occurrence, and the potential likelihood of such an occurrence.

Also, the EIS does not adequately address the potential for dike wall failure due to wave and current action. More description and clarification of the leaching threat and who is responsible to address it is needed. (See, e.g., Draft Letter Report, p. 13, Table 3, Column 3 concerning water quality).

It is unclear what will happen when sediments "fill the pores" in the dike, and how this will effect drainage, settlement of the dredgings and the future use of the site. (See p. EIS -29, Section 2.55). Finally, the City would like clarification of whether the Army Corps discharge standard is acceptable to Ohio EPA.

in the ENVIRONMENTAL IMPACT STATEMENT APPENDIX EIS-B PUBLIC NOTICE AND SECTION 404 (b)(1) EVALUATION. Reference paragraph 3.6.2 Determination of Compliance with Applicable Water Quality of APPENDIX EIS-B ALB. These processes continue to some degree during and after fill of the CDF.

While some water may continue to seep through and be filtered by the dike wall and deposited sediments; to a large extent, when sediments "fill the pores" in the dike filter material, water flow is restricted. (Reference EIS paragraph 2.64) At this point, during the dredging and disposal operation, the ponding, settling, and decanting process (see item (2) in the preceding paragraph) becomes predominant.

As would be expected, precipitation drainage down through the fill material sub-sediments and CDF is slow and fill material retains a high level of moisture. This must be a consideration in any future limited site developments. Some measures (i.e., subsurface drainage facilities) may be implemented to alleviate this, if necessary. The final surface sediments drain/dry somewhat better, being highest in the stratification and aided by evaporation.

Final surface development and drainage should maximize retention of sediments/soils within the CDF site, so that water which filters or drains from the site is relatively clean. Considered design measures may include: vegetation for sediment/soil retention; dike wall filtration; drainage settling ponds, ditches, drop culverts (periodically cleaned out), filtration material (periodically replaced); etc.

Since the Burke Lakefront Airport is built primarily on former CDF sites this should be well understood by now.

In reference to the considered 100 mg/l particulate concentration effluent weir discharge level, EIS paragraph 2.71 indicates that "this is a developed standard which the Buffalo District considers to be a reasonable achievable level that has been acceptable to other agency interests at other CDFs." Normally, the Buffalo District coordinates the Draft Letter Report and Draft EIS and Appendices and via the Clean Water Act Section 404(a) Public Notice and Section 404(b)(1) Evaluation (EIS Appendix EIS-B) requests a State Section 401 Certification. The 401 Certification certifies acceptability to Ohio EPA. However, in this case, Corps personnel, in coordination with Ohio EPA personnel indicated that the Corps personnel will be incorporating some additional information about the storm sewerline extensions into the final reports, and would not expect official 401 Certification until then. The amended reports have been coordinated with Ohio EPA and a 401 Certification for construction and utilization of the proposed CDF (Site 10B) has been obtained and is included at the end of EIS APPENDIX EIS-B PUBLIC NOTICE AND SECTION 404(b)(1) EVALUATION.

(3)(F) See response to comment item 3E(1).

The CONTINUED HARBOR OPERATION AND MAINTENANCE Section of the EIS provides a general overview of overall continued harbor operation and maintenance. This overview is included here since these documents serve to address development and use of a new disposal facility or CDF specifically and associated overall harbor operation and maintenance generally and serve to supplement previous key reference documentation (Letter Reports/EIS) in this regard. Paragraph 2.52 is discussing Federal breakwater repair/maintenance not Federal or local CDF dike repair. Maintenance of the CDF dike is a responsibility of the city after the site is completely filled and the ownership of the facility has been transferred to the city. The Draft Letter Report has been revised to clarify responsibilities.

(F) Maintenance of Dike

The EIS does not adequately address the issue of maintenance of the Dike (retaining walls during the filling period and after the site is filled completely. It is the City's understanding that the Army Corps is responsible for the maintenance during both periods. (See e.g., page EIS-28, Section 2.49). The potential adverse impacts and likelihood of a failure of the Dike should be addressed by the EIS. Also, p. 4, Section 2(b)(6) of the Draft Letter Report (Second Supplement) dated December 1992 should be changed and/or clarified to reflect the appropriate responsibilities.

37(2) The EIS states that the Army Corps will monitor the site in the "early years." (P. EIS-30, Sections 2.59 and 2.61). The City wants to receive the results of the monitoring. Also, the City expects the Army Corps to continue monitoring throughout the filling of the site and afterwards.

37(3) It is unclear who is to maintain the weir during and after the site is filled, or whether the weir is even needed after the first few years.

Reference response to comment item 3b.

Reference response to comment item (3)(E).

The Corps of Engineers and/or its contractors would maintain the weir during fill use of the site. As indicated in EIS paragraph 2.68, weir operation would occur primarily during middle to late life of the CDF. The final owners/atewards of the filled site and/or its contractors would be responsible for weir maintenance. Although the weir would probably continue to serve as a site drainage discharge site after the CDF site is filled, operation of the weir structure probably would not be required, and the weir elevation would be fixed. Periodic drainage facility maintenance (i.e., excavation to clean out settling ditches), however, would likely be required. Reference response to comment item (3)(E) pertaining to final surface development and drainage.

### (3)(G) Capacity of the CDF

The EIS summarizes identified planning criteria which is considered to be a reasonable relatively short-term future average figure. Considerations include potential for increased, as well as decreased dredging and disposal. Although it is probable that dredging and disposal will decrease in the future, it is also possible that dredging and disposal will increase in the future. We need to utilize a conservative estimate for planning purposes. In this regard, also consider the following. As indicated in EIS paragraph 2.07, 2.12 erosion and sediment control is a long-term effort which will take significant time for significant additional realization. Considering that the quantity of dredging has been reduced by 40 percent in the last few decades, how much further reduction is realistic in the next 15 to 20 years? There is a considerable amount of material in the system which will take a considerable amount of time to work its way through. If increased precipitation occurs on a high cycle over the next 15 to 20 years, increased sedimentation and associated dredging and disposal needs may increase. Potential periodic use of the disposal site by local non-Federal harbor entities would slightly increase the considered quantity of material placed in the CDF.

Therefore, although it is probable that the CDF would take longer to fill under certain future scenarios, it is possible that the CDF would take less time to fill under other future scenarios. It should be understood that the primary purpose/objective of the project and CDF is to provide a suitable disposal facility for material dredged from Cleveland Harbor that is considered "not suitable for unrestricted open-lake disposal." Continued use in this regard would take precedence over eventual use of the site to relocate/expand Burke Lakefront Airport. Projected long-term land use of the site could be affected accordingly.

Statements in this regard have been included in EIS paragraphs 2.75, 4.45, and 4.69.

If it is determined in the future that use of a CDF will no longer be necessary for disposal of material dredged from Cleveland Harbor and part of the CDF is left unfilled, it is possible that continued filling with dredged material or acceptable alternate material may be considered in order to fill the site and to facilitate best/desirable land use of the site.

### (G) Capacity of CDF

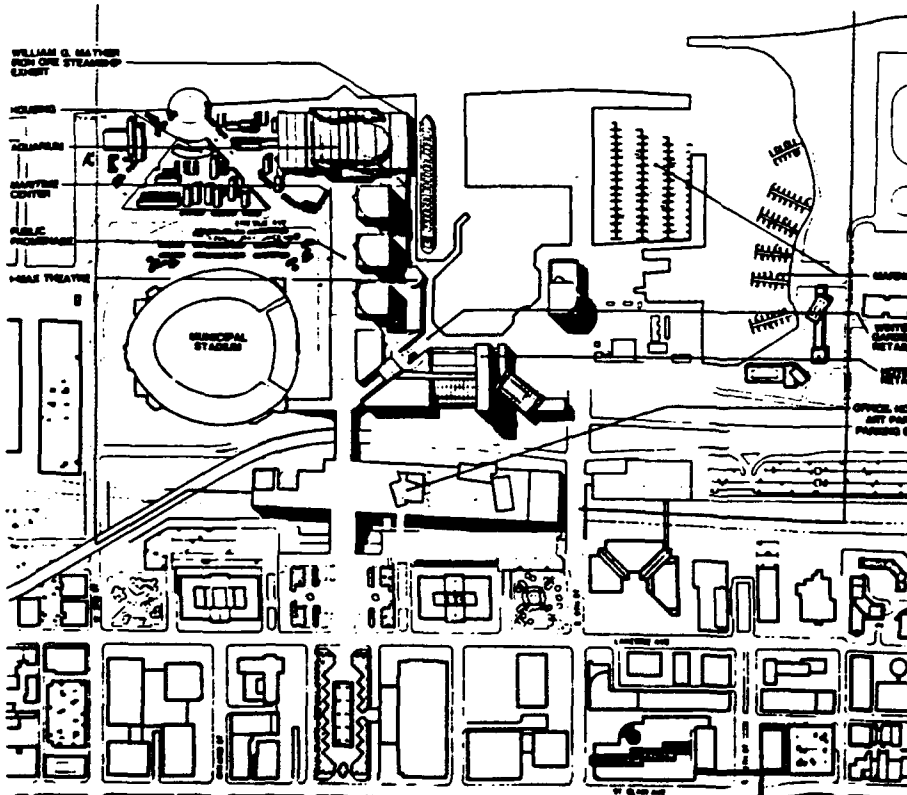
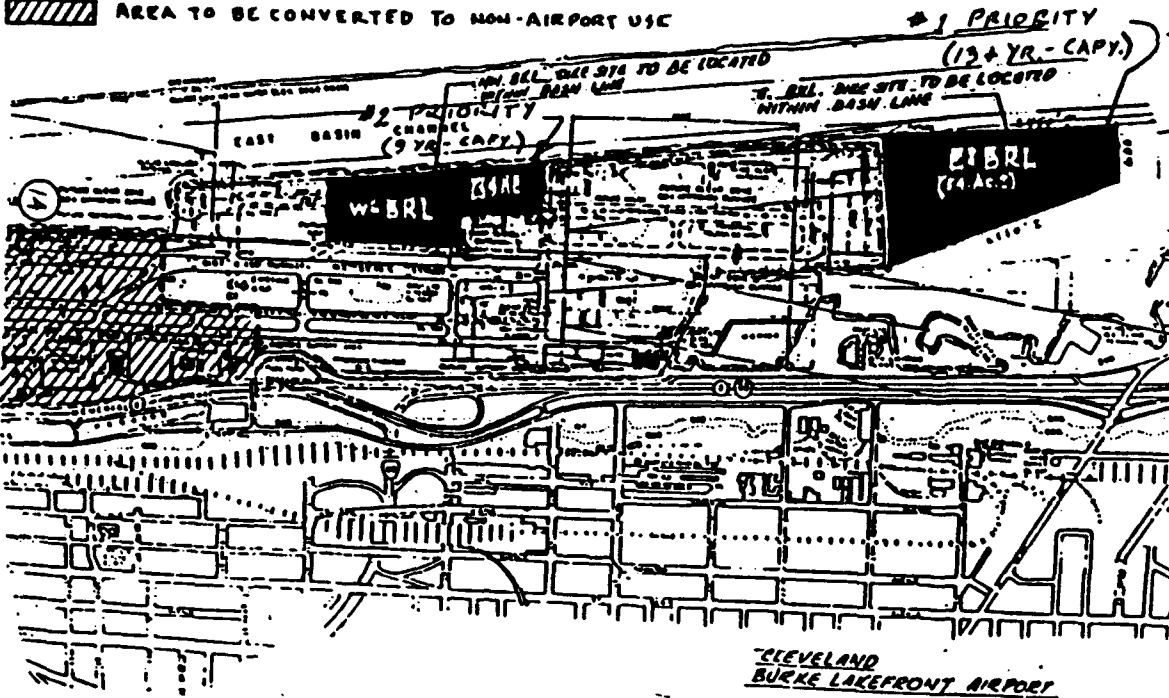
36 Site 10B is planned to have capacity for 15 years at the current rate of dredging. However, the EIS states that the quantity of dredging has reduced by 40% in the "last few decades." As noted above, the site will not be filled for 18-20 years from today, including construction and filling. The EIS fails to address the possibility of a further large reduction in the quantity of material which could significantly extend the life of the site. Such an extension of life for the CDF could significantly delay any future use of the site. (See page EIS 14, Section 2.08; also, EIS-20, Section 2.30.)

# PROPOSED DREDGINGS DISPO. SITES

## CITY PLANNING COMMISSION

-  EXISTING BURKE AIRPORT
-  EXISTING UNDEVELOPED FILL
-  PROPOSED FILL SITES
-  AREA TO BE CONVERTED TO NON-AIRPORT USE

Nov. 1988



### Development Trends

The North Coast Harbor development program anticipates a large scale mixed-use development comprised of major public attractions, public open space, retail, office, hotel, parking and residential facilities. Collectively, the combination of elements will work together to create a synergistic, vibrant environment where people can live, work, shop, and enjoy cultural and recreational recreations.

The North Coast Harbor project is intended to serve as a major catalyst for Cleveland's economic and community development into the next century. The explicit objectives of the project are to promote public enjoyment of Cleveland's Lake Erie shoreline and to enhance the economic vitality of the city and region by:

1. Establishing public access to, and enjoyment of, the water's edge;
2. Preserving existing waterfront views;
3. Creating a strong visual and pedestrian linkage between the Downtown Lakefront (harbor and the rest of downtown);
4. Establishing in the district water-related, people-oriented facilities accessible to the entire Cleveland community;
5. Establishing the district as a significant regional and national destination for tourists and other visitors;
6. Creating engaging, high quality public attractions, providing opportunities for self-education and fostering interest in science, technology, history, and the natural environment; and
7. Developing the district as a major enhancement of the quality of Cleveland's built environment.

CITY VISION  
DOWNTOWN  
PLAN

## 2 DOWNTOWN LAKEFRONT DEVELOPMENT PLAN

GEORGE E. BRYAN, President  
GORDON B. HALL, Vice President / Treasurer  
CAROL ANN LARK, Secretary

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## LAKE CARRIERS' ASSOCIATION

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Telephone: (216) 621-1107 / Fax: (216) 241-8262

February 5, 1993

District Commander  
U.S. Army Engineer District, Buffalo  
1776 Niagara St.  
Buffalo, NY 14207-3199

Dear Sir:

I am writing in response to your January 20, 1993 letter which provided the Draft Letter Report and Draft Environmental Impact Statement on Cleveland Harbor and the new CDF.

Lake Carriers' Association represents 15 U.S.-flag Great Lakes fleets which have a combined total of 62 vessels with a per-trip capacity of 1,819,383 gross tons of bulk cargo. These commercial vessels range in length from 383 to 1,013 feet and comprise more than 98 percent of the tonnage of United States Great Lakes vessels engaged in the domestic trade. These vessels can carry more than 120 million tons of cargo each year.

Our member companies are primarily concerned with the movement of iron ore pellets, stone construction aggregates, cement and petroleum products to Cleveland and the movement of salt from Cleveland.

Maintenance of Federal channels to their authorized depths is of utmost importance to our member companies. Every inch of siltation reducing a channel's depth converts to a loss of the ability of our largest vessels to carry 240 gross tons. Smaller vessels which use the Cuyahoga River lose the ability to carry roughly 100 tons for every inch of lost channel depth. Every ton of cement destined for use in northeast Ohio, every ton of stone or aggregates arriving for use by a steel mill or the construction industry, every barrel of petroleum, and every ton of iron ore pellets becomes less competitive with raw materials from other sources nationally and internationally when vessels are forced to operate at drafts less than those in the federal project. The same may be said for salt transported from Cleveland.

The impact of this loss in efficiency goes far beyond the bottom line on the Balance Sheet of a number of shipping companies. Its greatest impact is on the economic viability and competitiveness of the customers and consumers using or providing the commodities moving to and from the port. In today's global economy Ohio workers are in competition with counterparts in Japan, Mexico, Brazil, and Europe, and the nation's economy cannot thrive, and in many cases even exist, by discarding any economic advantage it should have.

Lake Carriers Association

Letter Dated:  
February 5, 1993


1. Thank you for your review and comments.  
No further response necessary at this time.

LAKE CARRIERS' ASSOCIATION

Consequently, our member companies are very pleased to see the currently recommended plan for construction of the CDF which will be required to dispose of certain sediments dredged from Federal navigation channels in Cleveland. The Association is grateful that an environmentally acceptable manner has been identified for dredged spoils disposal.

The Association commends the Corps for guiding the lengthy negotiative process evolving in the identification of Site 10B in the present plan.

Sincerely yours,

  
Gordon D. Hall  
Vice President/Treasurer

GDH:lp