

**APPENDIX P**

**DRAFT RECONNAISSANCE REPORT  
COMMENTS BY STEERING COMMITTEE  
MEMBERS**



State of Ohio Environmental Protection Agency

STREET ADDRESS:

1800 WaterMark Drive  
Columbus, OH 43215-1099

TELE: (614) 644-3020 FAX: (614) 644-2329

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P.O. Box 1049  
Columbus, OH 43216-1049

January 7, 1999

Mr. Jeff Benedict, P.E.  
Pittsburgh District - Plan Formulation Branch  
U.S. Army Corps of Engineers  
William S. Moorhead Federal Building  
1000 Liberty Avenue  
Pittsburgh, Pennsylvania 15222-4186

Dear Mr. Benedict:

As requested, members of my staff on the Mahoning River Project Steering Committee have reviewed the December 1998 U.S. Army Corps of Engineers/Pittsburgh District's report titled "Mahoning River Environmental Dredging Reconnaissance Study, Trumbull and Mahoning Counties, Ohio."

This study was conducted in accordance with Section 312(b) of the Energy and Water Development Appropriations Act of 1996 and funded under the Energy and Water Development Appropriations Act of 1998. The purpose of the project is the ecosystem restoration and removal of the Ohio Department of Health human contact advisory for the lower Mahoning River from Warren, Ohio to the Ohio/Pennsylvania state line. The general findings of the study are that the currently degraded aquatic ecosystem can be restored by the removal of contaminated stream and bank sediment and the modification of five low head dams. The study also concludes that "there is a good possibility that the proposed remediation of the Mahoning River would allow the human health advisory to be lifted..." Ohio EPA concurs with the general conclusions of this report. We are withholding judgement about which combination of specific remedial measures will be required in any final proposed remediation alternative until the results of the Feasibility Study are completed.

Specific comments of Drs. John Estenik (614) 644-2866 and Robert Davic (330) 963-1132 of my staff follow. Please contact them with any questions.

Sincerely,

John J. Sadzewicz, P.E.  
Acting Deputy Director, Water Programs

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cc: Robert Wysenski, Ohio EPA/Northeast District Office  
Robert Davic, Ohio EPA/Northeast District Office  
Dr. Ying Feng, Ohio Department of Health  
George Elmaraghy, Division of Surface Water  
John Estenik, Division of Surface Water

George V. Voinovich, Governor  
Nancy P. Hollister, Lt. Governor  
Donald R. Schregardus, Director

Ohio EPA Comments on the December 1998 Report:  
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U.S. Army Corps of Engineers, Pittsburgh District

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The Biological Criteria listed should be  $\geq$  cited number, not only  $>$  as currently shown.

27. Appendix A.

Add updated and revised 1997 Ohio Department of Health fish consumption advisory for Mahoning River.

28. Appendix B.

Add to the Steering Committee the names of Dr. John Estenik, Ohio EPA (614) 644-2866 and Dr. Ying Feng, (614) 466-6447, Ohio Department of Health. Change Pat Natali's phone number to (330) 963-1279. Change area code for Robert Davic to (330) and add Dr. title to his name.

29. Appendix C.

Add addresses and phone numbers of each entity in front box. Add citation for American Fishery Society, 1992 on page 11.

30. Appendix E.

Page 11--put space between text and Table 1. Page 28--put space between text and Table 5.  
Page 32, first para.--the change in QHEI with replacement of substrates would increase QHEI from 64 to 69, a 8% change, not 5% as cited (see Table 5). Any change in QHEI of 4 or more points is considered to be ecologically significant by Ohio EPA biologists.

31. Appendix E, Figs. 2-7.

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32. Appendix G.

It is not possible to determine from the figures provided the exact locations of the sample data presented in the table.

33. Appendix J.

There is a wording correction needed for the September 4, 1998 letter from Dr. Estenik. On the second page, item D, change [5,000 ppt to 10,000 ppt] to [500 ppt to 1,000 ppt].

34. Appendix L.

A complete literature citation for the New York sediment standards should be added for those who would want to study the original document.

35. A copy of all previous Steering Committee minutes (e.g., Memorandum for Record) should be included as an Appendix to the Reconnaissance Report to serve as a public record of Steering Committee involvement in the project.

*Jeff Benedict*



**Hull & Associates, Inc.**

6130 Wilcox Road  
Dublin, Ohio 43016  
(614) 793-8777  
Fax (614) 793-9070

January 14, 1999

Mr. John N. Goga, P.E.  
Chief, Planning Division  
Department of the Army  
Pittsburgh District, Corps of Engineers  
William S. Moorhead Federal Building  
1000 Liberty Avenue  
Pittsburgh, Pennsylvania 15222-4186

Re: Comments to Mahoning River Environmental Dredging Reconnaissance Study, U.S. Army Corps of Engineers, December 1998; 3000.300.0768.DOC.

Dear Mr. Goga:

This letter presents Hull & Associates Inc. (HAI) comments to the Mahoning River Environmental Dredging Reconnaissance study, dated December 1998, and prepared by the U.S. Army Corps of Engineers, Pittsburgh District. The study recommends a \$91,000,000 dredging alternative to address the problem of contaminated river sediments. Our comments on the study are directed to the consideration of the in-situ sediment-capping technology called AquaBlok™.

Hull & Associates Inc. is a member of the Mahoning River Dredging Study Steering Committee. We joined the committee to offer additional expertise in sediment remediation and the use of remedial alternatives. HAI is a technical representative for AquaBlok™, and provided the U.S. Army Corps of Engineers with information early in the process pertaining to AquaBlok™ and its potential ability to provide a cost-effective solution for remediating portions of the Mahoning River.

We believe that remediating contaminated sediments in the 30-mile stretch of the Mahoning River study area is a complex issue, and warrants consideration of a number of alternatives, with potentially a combination of technologies to be used during the final remediation of the river. Therefore, we would like to address the statements made in the study which recommend the dredging alternative over sediment capping "because of the lack of prior experience in the use of AquaBlok™ in this type of environment..." by offering to present additional information to the steering committee and the Army Corps of Engineers. HAI believes that it is in the best interest of the project that this sediment capping technology, which can be very cost effective, be seriously considered not necessarily as a stand alone solution, but potentially used in combination with dredging.



Mr. John N. Goga, P.E.  
January 14, 1999  
3000.300.0768.DOC  
Page 2

We encourage the Army Corps of Engineers to further study additional information on the use of AquaBlok™ sediment-capping technology as a component in their upcoming feasibility study, which we understand will be a more detailed and broad-based evaluation of remedial alternatives. We are prepared to provide more information, specific to the documented attributes of AquaBlok™ and its use in the laboratory and field and how it might be a beneficial alternative for use in this project.

The following provides an overview of benefits not considered in the study, as well as responses to comments raised by the Army Corps of Engineers regarding the AquaBlok™ technology.

#### Minimal Disruption of the Ecosystem

One substantial benefit that in-situ sediment capping has over dredging is that dredging can severely disrupt deepwater as well as wetland ecosystems. Potential environmental problems associated with dredging, but not with in-situ capping, include: (1) degradation of water-column quality through resuspension of contaminated sediments and associated dissolved contaminants during the dredging process; (2) the need for disposal of dredged sediments either through their transfer to open-water areas or placement into confined disposal facilities; (3) the potential for secondary water- and/or air-quality impacts associated with release of contaminants from confined sediments, and (4) the physical destruction of the ecosystem, which is contrary to the objective of cleaning up the Mahoning River.

In contrast, applying the AquaBlok™ sediment cap will minimize disruption to deepwater and/or wetland ecosystems and also minimize re-suspension of the contaminated sediments. In addition, the natural generation and deposition of clean sediments (overtop contaminated sediments) which currently appears to be taking place in the Mahoning River will build up atop the sediment cap, thus helping to re-establish a health riverbed habitat.

#### Applicability in Fluvial Environments

One apparent concern noted by the Study was that AquaBlok™ has not been used in a fluvial environment such as the Mahoning River. While it is true that AquaBlok™ has not been field-tested in river environments, large-scale flume studies have in fact been conducted to approximate river velocities, in order to determine resistance of the material to significant and long-term fluvial-like erosive forces. Results of these flume studies demonstrate that AquaBlok™ effectively isolates sediments through the formation of a continuous and relatively erosion-resistant, hydrated capping layer atop the sediments. To date, flume tests have been conducted for extended periods at flow velocities of up to 6 feet per second – velocities which are likely much higher than normal flows in the Mahoning River and which are probably comparable to (or even greater than) 100-year storm-event flows. In addition, cost effective armoring systems can be used in conjunction with AquaBlok™ if deemed necessary.

#### Ability to Support a Benthic Community

A concern was also raised in the Study regarding the ability of AquaBlok™ to support a healthy benthic community. AquaBlok™ has proven to be a viable substrate for recolonization by some

Mr. John N. Goga, P.E.  
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Page 3

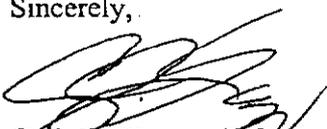
benthic fauna. The United States Department of Agriculture (USDA) researchers working with AquaBlok™ at an Alaska site (discussed in enclosed documentation) not only observed lush regrowth of wetland flora in the AquaBlok™ substrate within one year of its placement, but also observed the presence of small red worms within the capping material. Although not yet tested within Lake Erie tributaries such as the Mahoning River, AquaBlok™ should prove to be a viable habitat for benthic species because it is comprised mainly of naturally occurring clay minerals - fine-grained material that is not substantially different from the silt-rich substrates found in the Mahoning River.

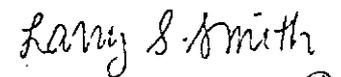
Closing

The remediation of contaminated sediments in over 30 miles of the Mahoning River is an overwhelming and expensive process. Dredging the river, containing the sediments, dewatering the sediments, and then disposing of the sediments is one alternative. But this alternative may not be the whole answer for 30 miles of river. Dredging has its place in a number of scenarios, such as removing hot spots or maintaining navigable waters, but may not be cost effective or appropriate in all circumstances. Sediment capping can be another viable alternative, and in some applications, has advantages over dredging, such as minimizing the disruption of the ecosystem, and in many cases having a significant overall lower cost. Therefore, based on the information presented above, and the enclosed information which presents results of AquaBlok™ testing, we encourage the Army Corps of Engineers to seriously consider the sediment-capping technology during the feasibility evaluation as a tandem approach to cleaning up the Mahoning River.

We appreciate your consideration of our comments, and have sent a copy of this letter to the members of the steering committee. We would be happy to make a detailed presentation to the committee, and also invite the committee to visit the laboratory and testing facilities for AquaBlok™. If you have any questions, please call us at (614) 793-8777.

Sincerely,

  
Craig A. Kasper, P.E.  
Senior Project Manager

  
Larry S. Smith, P.E.   
Senior Project Manager

cc: Jeff Benedict, U.S. Army Corps of Engineers



State of Ohio Environmental Protection Agency

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28. Appendix B.

Add to the Steering Committee the names of Dr. John Estenik, Ohio EPA (614) 644-2866 and Dr. Ying Feng, (614) 466-6447, Ohio Department of Health. Change Pat Natali's phone number to (330) 963-1279. Change area code for Robert Davic to (330) and add Dr. title to his name.

29. Appendix C.

Add addresses and phone numbers of each entity in front box. Add citation for American Fishery Society, 1992 on page 11.

30. Appendix E.

Page 11--put space between text and Table 1. Page 28--put space between text and Table 5. Page 32, first para.--the change in QHEI with replacement of substrates would increase QHEI from 64 to 69, a 8% change, not 5% as cited (see Table 5). Any change in QHEI of 4 or more points is considered to be ecologically significant by Ohio EPA biologists.

31. Appendix E, Figs. 2-7.

The Biological Criteria listed should be >or = cited number, not only > as currently shown.

32. Appendix G.

It is not possible to determine from the figures provided the exact locations of the sample data presented in the table.

33. Appendix J.

There is a wording correction needed for the September 4, 1998 letter from Dr. Estenik. On the second page, item D, change [5,000 ppt to 10,000 ppt] to [500 ppt to 1,000 ppt].

34. Appendix L.

A complete literature citation for the New York sediment standards should be added for those who would want to study the original document.

35. A copy of all previous Steering Committee minutes (e.g., Memorandum for Record) should be included as an Appendix to the Reconnaissance Report to serve as a public record of Steering Committee involvement in the project.

**COMMENTS BY THE CASTLO COMMUNITY IMPROVEMENT CORPORATION  
ON THE DECEMBER, 1998, DRAFT OF THE MAHONING RIVER  
ENVIRONMENTAL DREDGING RECONNAISSANCE STUDY PREPARED BY THE  
PITTSBURGH DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS**

**EXECUTIVE SUMMARY**

- ◆ The Executive Summary should contain subheadings that correspond with all sections listed in the Table of Contents.
- ◆ All remedial options should be briefly identified in the Executive Summary with justification given as to why the preferred option was selected.

**1.0 INTRODUCTION**

- ◆ No comments.

**2.0 DESCRIPTION OF STUDY RESEARCHES**

- ◆ After the Mahoning River passes through Warren, in sequential order from northwest to southeast it flows through Niles, McDonald, Girard, Youngstown, Campbell, Struthers and Lowellville.
- ◆ The comment that the Mahoning River banks in Struthers are 30 to 60 feet high is exaggerated.
- ◆ To emphasize the decline of the region's basic steel industry, more than 65,000 were employed in Mahoning and Trumbull Counties in SIC 33 category during its peak compared to about 6,000 today.
- ◆ The Struthers-Bridge Street dam no longer supplies water to LTV.
- ◆ Additional emphasis should be placed on the lack of municipal waste water treatment plants alongside the Mahoning River until well into the twentieth century.
- ◆ A total volume estimate of 461,999 cubic yards of sediment in the river should be rounded off to 462,000 cubic yards.

**3.0 PROBLEMS & OPPORTUNITIES**

- ◆ Additional emphasis should be placed on how restoration of the Mahoning River and its ecosystem could further economic development in the Mahoning Valley.
- ◆ Additional cost/benefit information would be helpful in this section
- ◆ In general, implementation of the project would undoubtedly improve the quality of life throughout the entire Mahoning Valley thus enhancing its economy.

**4.0 REMEDIAL ALTERNATIVES**

- ◆ No comments.

## **5.0 ENVIRONMENTAL & CULTURAL RESOURCES**

- ♦ The final paragraph on Page 5.1 should be deleted with the following substituted: “Large sections of abandoned industrial property dominate the river banks from downtown Youngstown, through Campbell to Struthers. However, considerable evidence exists that portions of this major brownfield site are being restored to economic health through the refurbishing of existing and the construction of new industrial buildings.
- ♦ In Section 5.3, new “industrial” development is also likely to occur, especially on existing brownfield sites.

## **6.0 SUMMARY & CONCLUSIONS**

- ♦ Reference to EDATA should only be made in Section 6.3.3 and deleted from Section 6.3.4.

## **7.0 RECOMMENDATIONS**

- ♦ No comments.

## **TABLES**

- ♦ No comments.

## **FIGURES**

- ♦ Figure 1 should be replaced with a better map which emphasizes the Mahoning River, its tributaries and the communities between river miles 12 and 46.

## **APPENDICES**

- ♦ No comments.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
6950 Americana Parkway, Suite H  
Reynoldsburg, Ohio 43068-4132

(614) 469-6923/FAX (614) 469-6919  
January 15, 1999

Colonel Stephen Massey  
District Engineer, Pittsburgh District  
U.S. Army Corps of Engineers  
Federal Building, 1000 Liberty Avenue  
Pittsburgh, PA 15222

Attn: Planning Division, Jeff Benedict

Dear Colonel Massey:

We have reviewed the draft copy of the Mahoning River Environmental Dredging Reconnaissance Study, Trumbull and Mahoning Counties, Ohio.

We believe the removal of the sediments from this aquatic system is the first step in restoring the river to its full biological potential. The second step would be the removal of all the dams in this section of the river. Without the removal of the dams, aquatic species will not be able to move freely up and down the river which is critical for aquatic health of a riverine system. Recreational usage such as canoeing, kayaking, boating, etc. will also be limited.

Two alternatives (removal and stabilization) are considered for remediation of contaminated bank material found within the study area. As with the river sediments, our preference is to remove the contaminated bank material. If an attempt is made to stabilize the contaminated bank material in place, we believe maintenance will be a constant financial burden on the local sponsor. Also, the potential for bank contaminants to migrate to the river will always exist. Has there been an investigation of technology that might be available to treat oil soaked banks in place? For instance, would it be feasible to inject oil eating bacteria and a fertilizer into the banks and expect acceptable results?

We look forward to continued coordination.

Sincerely

  
Kent E. Kroonemeyer  
Supervisor



Youngstown State University / One University Plaza / Youngstown, Ohio 44555-3027  
The William Rayen College of Engineering & Technology  
Department of Civil & Environmental Engineering  
(330) 742-3027  
FAX (330) 742-1567

January 19, 1999

Jeff Benedict  
U.S. Army Corps of Engineers, Pittsburgh District  
William S. Moorhead Federal Building  
1000 Liberty Avenue  
Pittsburgh, PA 15222-4186

Dear Jeff,

I received and reviewed the Draft Reconnaissance Phase Report for the Mahoning River Environmental Dredging Study. I realize it is past the January 15 deadline, but I thought I would send along my comments anyhow:

- Overall, I think this is a nice piece of work. The report presents a concise summary that answers several important questions related to remediation of the river ecosystem.
- Dewatering basin volumes equal to 125% of sediment volume for hydraulic dredging, and 110% for mechanical dredging, are proposed. My gut feeling is that this is very optimistic, unless the basins are cleaned out once or twice during the course of the project. I think we need to do some studies of the settling properties of the bottom sediments. Also, my feeling is that the underdrains would quickly become plugged or coated with fine solids and would be virtually useless. If this is the case, most of the dewatering would have to be accomplished by drawing supernatant off the top of the basins. Again, settling experiments could be used to investigate these possibilities and would be relatively cheap and easy to perform.
- Removal of bank sediments will wreak havoc with the riparian zone. I think the logistical difficulties and extent of damage to the riparian zone are being underestimated. Although trees are a renewable resource, it would take nearly 100 years for the riparian zone to return to its present condition after removal of bank sediments. I feel that more consideration should be given to dredging sediment within the stream channel, and then using AquaBlok to seal off the bank sediments. Currents are very slow next to the banks, which might make application of AquaBlok feasible. It could then be covered with gravel to protect it and provide a substrate for benthic critters. A conceptual sketch is attached. A trial application of this approach could be tested on a short, representative stretch of the river during the Feasibility Phase study.

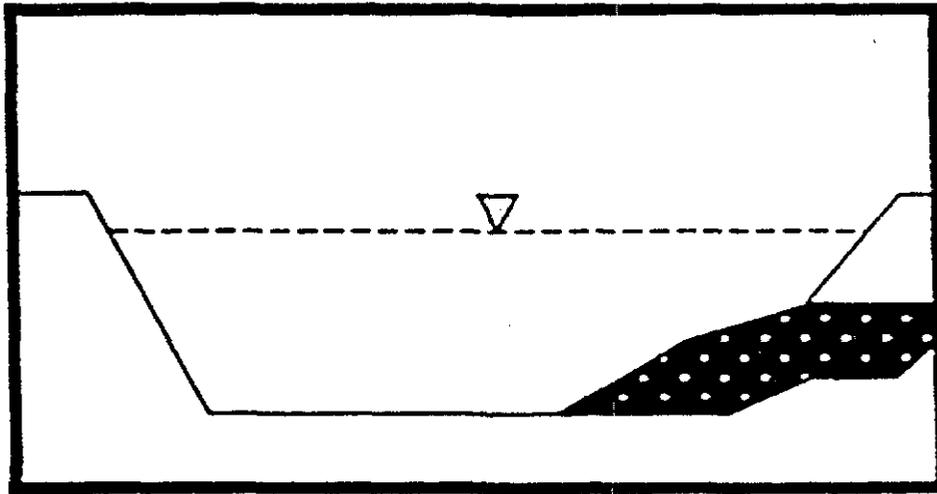
I look forward to continuing to work with you on restoration of the Mahoning River.

Sincerely yours,

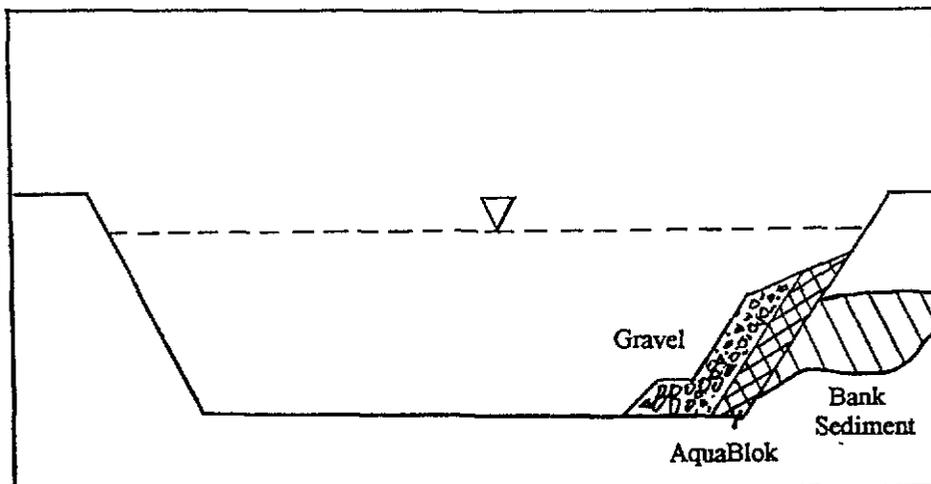
Scott C. Martin, Ph.D., P.E.  
Professor

# An Alternative to Dredging Mahoning River Bank Sediments

BEFORE



AFTER



**From:** Jeffrey M Benedict  
**To:** Trout.CROZZI, Carp.MKORYAK, Muskie.PNWANNA, Carp.R...  
**Date:** 1/20/99 1:21 pm  
**Subject:** Mahoning Report - Comments from Tom Shepkur

Team - just a note and a record of another commenter from the steering committee. Tom Shepkur of WCI Steel, Inc. called me to discuss about 8 typos and detail questions. Very briefly, the comments were:

Page 2-13, last para., CSC is referred to as an industrial wastewater treatment plant, it is actually a steel plant (formerly Copperweld, I believe). The reference may be to the wastewater treatment portion of the plant.

Page 2-26, first full para., put "to" between "order" and "interpret".

Page 2-41 first full para., "Coke mills ..." should be "Coke plants ...".

Page 4-11, last paragraph, "And important ..." should be "An important ..."

Page 4-14, 2nd paragraph, last sentence, does \$40,000 apply to one or all holding basins, it implies all, which seems low. Neither Tom nor I was sure. Indeed, checking the cost tables, the \$40,000 is for each holding basin. I will add that phrase in. (Good detective work.) One minor note, the \$40,000 does not include contingency cost, should it (Carmen)?

Page 4-25, 1st para., middle., "which measure of the health ..." should be "measure the health ..."

Page 4-34, 1st para., last sentence, "are accepted at a municipal ..." sounds funny. Indeed, I think it sounds better as "... are acceptable for disposal at a municipal ..."

Page 6-5, last bullet item, there is no Warren County, should be either Warren City or Township (Carmen, do you know??)

Tom remarked that the draft report was enjoyable reading and that it should further the cause for restoring the Mahoning River.

-Jeff

**Ohio Historic Preservation Office**

567 East Hudson Street  
Columbus, Ohio 43211-1030  
614/ 297-2470 Fax: 614/ 297-2496

Visit us at [www.ohiohistory.org/resource/histpres/](http://www.ohiohistory.org/resource/histpres/)



**OHIO  
HISTORICAL  
SOCIETY**  
SINCE 1885

February 4, 1999

Jeffrey Benedict, Planning Division  
U.S. Army Corps of Engineers, Pittsburgh  
William S. Moorhead Federal Building  
1000 Liberty Avenue  
Pittsburgh, PA 15222

Re: Draft Mahoning River Environmental Dredging Reconnaissance Report  
Mahoning and Trumbull Counties, Ohio

Dear Mr. Benedict,

This is in response to correspondence from your office dated December 22, 1998 (received December 28) regarding the above referenced project. The comments of the Ohio Historic Preservation Office (OHPO) are submitted in accordance with provisions of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 [36 CFR 800]).

We concur with the findings and recommendations presented in the report concerning the need to identify and evaluate historic properties and effects on historic properties. We are concerned that information on historic properties needs to be carefully integrated into the planning process and would urge the Corps and the other involved parties to initiate efforts to identify, evaluate, and consult on historic properties as soon as practical. We recognize that it is sometimes not feasible to establish an Area of Potential Effects or a survey area until a preferred alternative has been selected and detailed design plans are being developed.

Any questions concerning this matter should be addressed to David Snyder at (614) 297-2470, between the hours of 8 am. to 5 pm. Thank you for your cooperation.

Sincerely,

David Snyder, Archaeology Reviews Manager  
Resource Protection and Review

DMS/ds