

**FILE**

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**BEFORE  
THE OHIO POWER SITING BOARD**

2008 OCT 27 AM 10:31

In the Matter of the Application of )  
American Municipal Power-Ohio, Inc., for a )  
Certificate of Environmental Compatibility )  
And Public Need for an Electric )  
Power Transmission Line and )  
Related Facilities. )

**PUCO**

Case No. 06-1357-EL-BTX

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**JOINT STIPULATION  
AND  
RECOMMENDED FINDINGS OF FACT  
AND  
CONCLUSIONS OF LAW**

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American Municipal Power-Ohio, Inc. ("AMP-Ohio" or "Applicant"), on behalf of its members, and the Staff of the Ohio Power Siting Board (collectively referred to as "the Parties") submit this Joint Stipulation and Recommended Findings of Fact and Conclusions of Law ("Joint Stipulation") for adoption by the Ohio Power Siting Board ("Board"). This Joint Stipulation is intended by the Parties to resolve all matters pertinent to AMP-Ohio's proposed 345 kilovolt ("kV") American Municipal Power Generating Station transmission line and related facilities ("AMPGS Transmission Line").

**I. Introduction**

AMP-Ohio proposes to construct the 345 kV AMPGS Transmission Line in southern Meigs County, Ohio. The purpose of the project is to transmit the electricity generated by the proposed 960 megawatt ("MW") American Municipal Power Generating Station ("AMPGS"). The transmission project will consist of an approximately 5-mile long, double circuit 345 kV transmission line, with a right-of-way ("r-o-w") of 150 feet. The line will be supported by single shaft, self-supporting tubular steel pole structures. The transmission project will begin at the

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AMPGS and will interconnect with the existing 345 kV Sporn-Muskingum River transmission line located north of the AMPGS. The AMPGS Transmission Line project is more fully described in AMP-Ohio's Application for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities ("Application"), which was filed with the Board on October 31, 2007 and supplemented by a filing on December 27, 2007. AMP-Ohio also submitted data in response to Staff requests on July 18, 2008 and September 25, 2008.

This Joint Stipulation results from discussions between the Parties, who agree that this Joint Stipulation is supported by the record and is, therefore, entitled to careful consideration by the Board. Accordingly, the Parties recommend that the Board issue a Certificate of Environmental Compatibility and Public Need ("Certificate") for the AMPGS Transmission Line as identified in the Application, subject to the conditions contained herein.

## **II. Stipulations**

### **A. Recommended Findings of Fact**

The Parties agree that the record in this case contains sufficient probative evidence for the Board to find and determine, as findings of fact, that:

- 1) AMP-Ohio is an Ohio, nonprofit corporation doing business in Ohio and is considered a "person" as defined in Revised Code ("R.C.") 4906.01(A).
- 2) The proposed AMPGS Transmission Line is a "major utility facility" as defined in R.C. 4906.01(B)(2).
- 3) On December 5, 2006, the Applicant held a public informational meeting in Meigs County, Ohio regarding the proposed AMPGS Transmission Line.
- 4) On October 31, 2007, AMP-Ohio filed its Application for the AMPGS

Transmission Line project with the Board under docket number 06-1357-EL-BTX.

- 5) On December 27, 2007, the Applicant filed supplemental information to the Application.
- 6) On July 18, 2008 and September 25, 2008, the Applicant submitted data to the Staff in response to Staff requests.
- 7) On December 27, 2007, the Chairman of the Board issued a letter to the Applicant stating that the Application, filed on October 31, 2007, had been found to comply with the requirements of Ohio Administrative Code ("O.A.C.") Chapter 4906-01, *et seq.*
- 8) On January 18, 2008, the Applicant filed proof of service of the Application on local officials and libraries in accordance with O.A.C. 4906-5-08.
- 9) On July 25, 2008, the Administrative Law Judge issued an Entry scheduling a local public hearing for this case to take place on October 22, 2008 at 6:00 p.m. at Southern High School, 920 Elm Street, Racine, Ohio 45771. The adjudicatory hearing was scheduled to take place on October 27, 2008 at 10:00 a.m. in Hearing Room 11-C at the offices of the Public Utilities Commission of Ohio, 180 East Broad Street, Columbus, Ohio 43215.
- 10) On August 20, 2008, the Applicant filed proof of publication of the first newspaper notice of the AMPGS Transmission Line project, as required by O.A.C. 4906-5-08. The first notice was published on August 8, 2007 in The Daily Sentinel, Pomeroy, Ohio.
- 11) On September 22, 2008, the Applicant filed a list of persons who received letters

describing the AMPGS Transmission Line project and the certification process, as required by O.A.C. 4906-5-08. The letters were sent via first class mail on September 19, 2008.

- 12) On October 7, 2008, the Staff issued and filed its "Staff Report of Investigation" for the AMPGS project, recommending that the Certificate of Environmental Compatibility and Public Need be issued as described in the Certificate Application and the supplemental information, subject to certain specified conditions.
- 13) On October 15, 2008, the Applicant filed proof of publication of the second newspaper notice of the AMPGS Transmission Line project, as required by O.A.C. 4906-5-08. The second notice was published on October 9, 2008 in The Daily Sentinel, Pomeroy, Ohio.
- 14) A public hearing was held on October 22, 2008 at Southern High School in Racine, Ohio.
- 15) The adjudicatory hearing was convened on October 27, 2008 at the offices of the Public Utilities Commission of Ohio in Columbus, Ohio.
- 16) Adequate data on the proposed AMPGS Transmission Line project has been provided to the Board and its Staff to determine the basis of need for the AMPGS Transmission Line, as required by R.C. 4906.10(A)(1).
- 17) Adequate data on the proposed AMPGS Transmission Line project has been provided to the Board and its Staff to determine the nature of the probable environmental impact of the AMPGS Transmission Line, as required by R.C. 4906.10(A)(2).

- 18) Adequate data on the proposed AMPGS Transmission Line project has been provided on the record to the Board and its Staff to determine that, with the required conditions, the AMPGS Transmission Line represents the minimum adverse environmental impact, considering the available technology and nature and economics of the various alternatives, and other pertinent considerations, as required by R.C. 4906.10(A)(3).
- 19) Adequate data on the proposed AMPGS Transmission Line project has been provided on the record to the Board and its Staff to determine that, with the required conditions, the AMPGS Transmission Line is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the AMPGS Transmission Line will serve the interests of electric system economy and reliability, as required by R.C. 4906.10(A)(4).
- 20) Adequate data on the proposed AMPGS Transmission Line project has been provided on the record to the Board and its Staff to determine that the AMPGS Transmission Line will comply with R.C. Chapters 3704, 3734, and 6111, R.C. Sections 1501.33, 1501.34, and 4561.32, and all applicable regulations adopted thereunder, as required by R.C. 4906.10(A)(5).
- 21) Adequate data on the proposed AMPGS Transmission Line project has been provided on the record to the Board and its Staff to determine that, with the required conditions, the AMPGS Transmission Line will serve the public interest, convenience, and necessity, as required by R.C. 4906.10(A)(6).
- 22) Adequate data on the proposed AMPGS Transmission Line project has been

provided on the record to the Board and its Staff to determine the AMPGS Transmission Line's impact on the viability as agricultural land of any land in an existing agricultural district established under R.C. Chapter 929 that is located within the AMPGS site, as required by R.C. 4906.10(A)(7).

- 23) Adequate data on the proposed AMPGS Transmission Line project has been provided on the record to the Board and its Staff to determine that the AMPGS Transmission Line incorporates maximum feasible water conservation practices, considering available technology and the nature and economics of various alternatives, as required by R.C. 4906.10(A)(8).
- 24) The information, data, and evidence in the record of this proceeding provide substantial and adequate evidence and information to enable the Board to make an informed decision on the Application for the AMPGS Transmission Line.

**B. Recommended Conclusions of Law**

The Parties further agree that the record in this case contains sufficient probative evidence, if conditions in the Certificate are adopted as recommended by the Parties, for the Board to find and determine, as conclusions of law, that:

- 1) The Applicant is a "person" under R.C. 4906.01(A).
- 2) The AMPGS Transmission Line is a "major utility facility" as defined in R.C. 4906.01(B)(2).
- 3) The Applicant's Certificate Application, as supplemented and further clarified by data submissions, complies with the requirements of O.A.C. 4906-15-01, *et seq.*
- 4) The record establishes the basis of need for the AMPGS Transmission Line, as required by R.C. 4906.10(A)(1).

- 5) The record establishes the nature of the probable environmental impact from construction, operation, and maintenance of the AMPGS Transmission Line, as required by R.C. 4906.10(A)(2).
- 6) The record establishes that the proposed AMPGS Transmission Line represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations, as required by R.C. 4906.10(A)(3).
- 7) The record establishes that the proposed AMPGS Transmission Line is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the AMPGS Transmission Line will serve the interests of electric system economy and reliability, as required by R.C. 4906.10(A)(4).
- 8) The record establishes that the AMPGS Transmission Line will comply with R.C. Chapters 3704, 3734, and 6111, R.C. Sections 1501.33, 1501.34, and 4561.32, and all applicable regulations adopted thereunder, as required by R.C. 4906.10(A)(5).
- 9) The record establishes that the AMPGS Transmission Line will serve the public interest, convenience, and necessity, as required by R.C. 4906.10(A)(6).
- 10) The record establishes that the impact of the AMPGS Transmission Line on the viability as agricultural land of any land in an existing agricultural district established under R.C. Chapter 929 that is located within the AMPGS Transmission Line site has been determined, as required by R.C. 4906.10(A)(7).
- 11) The record establishes that the proposed AMPGS Transmission Line incorporates

maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives, as required by R.C. 4906.10(A)(8).

**C. Recommended Conditions of the Certificate of Environmental Compatibility and Public Need**

The Parties stipulate and recommend to the Board that it issue a Certificate of Environmental Compatibility and Public Need, as requested by the Applicant, for the AMPGS Transmission Line, as described in the Application and supplemental information, and subject to the following conditions:

- 1) That the facility be installed following the Applicant's Preferred Route as presented in the application filed on October 31, 2007, and as further clarified by the Applicant's supplemental filings.
- 2) That the Applicant shall utilize the equipment and construction practices as described in the application and as modified in supplemental filings, replies to data requests, and recommendations Staff has included in the Staff Report of Investigation.
- 3) That the Applicant shall implement mitigative measures, described in the application, any supplemental filings, and recommendations Staff has included in the Staff Report of Investigation.
- 4) That prior to construction, Applicant shall prepare a transmission line mitigation plan for Staff's review and approval that addresses terrestrial, wetland and stream impacts. The plan shall include the following elements:
  - a) Applicant shall obtain the rights of up to 39 acres of real property, preferably wooded, in the project area, or its qualitative equivalent, to be preserved through a conservation easement. This property shall be separate from, and in addition to, any other locations previously identified by the Applicant for mitigation associated with AMPGS.
  - b) The portions of W1 and W2 within the transmission corridor r-o-w will be protected with a conservation easement that prohibits any other land use.
  - c) If trees within the r-o-w and within 50 feet on each side of any stream have to be cleared, then the area will be replanted with lower growing



native species. Species will be selected to match the allowable growth height that does not interfere with the safe operation of the facility.

- 5) That the Applicant shall prepare a detailed tree clearing plan describing how trees and shrubs along the proposed alignment will be protected from damage during construction, and, where clearing cannot be avoided, how such clearing work will be done so as to minimize removal of woody vegetation and mitigate for trees that are to be removed. Priority should be given to protecting mature trees throughout the corridor, and all woody vegetation in wetlands and riparian areas, by the use of increased pole heights, reduced width rights-of-way, and other practical methods. This tree clearing plan, which should also address the following items, shall be submitted to Staff for review and approval prior to initiation of construction.
  - a) That the Applicant shall limit tree clearing to the months of October through March unless specific pre-approval is granted by Staff. If tree clearing must be conducted outside of this period, the Applicant shall, prior to tree clearing, conduct Indiana bat surveys in areas identified as suitable habitat in coordination with Staff.
  - b) That the Applicant shall flag wetland boundaries and prohibit vehicle access to wetlands, unless otherwise preapproved by Staff. Any vegetation clearing within wetlands shall be conducted solely by hand and shall retain all low-growing plant species, particularly woody ones, unless otherwise directed by Staff.
  - c) That the Applicant shall prohibit the use of herbicides within 50 feet of streams and wetlands during initial construction and future r-o-w maintenance. Prior to construction, the Applicant shall submit a plan describing planned herbicide use for review and approval by the Staff.
  - d) That the Applicant shall retain all tree snags within the r-o-w that do not present a safety or reliability concern for the construction, operation, and maintenance of the new electric transmission line.
- 6) That the Applicant shall limit clearing in all riparian areas and, specifically, within 50 feet of any streams for the construction, operation, and maintenance of the facility. Vegetation clearing in these areas shall be selective hand clearing of taller-growing trees only, leaving all low-growing plant species, particularly wood ones (including other trees), undisturbed unless otherwise directed by Staff. All stumps shall be left in place.
- 7) That prior to the commencement of construction, the Applicant shall develop and submit to Staff for review and approval an effective long-term plan to be adopted for use by the Applicant for all wetlands and riparian areas within the project r-o-w so that they can be readily identified (e.g.

permanent signage delineating "no clearing" areas and notations on future maintenance plans) and protected from clearing (including use of herbicides) during all future r-o-w maintenance.

- 8) That the Applicant shall protect the endangered spadefoot breeding pond and associated habitat locations within the r-o-w and prevent vehicle access to these areas. Use of herbicides near these locations during construction and maintenance activities shall be prohibited. Prior to construction, the Applicant shall provide for Staff review and approval a threatened and endangered species protection plan. This plan shall focus on measures to protect the eastern spadefoot, as well as any other endangered or threatened aquatic species, the habitat for which is identified in the construction area. This shall include specific r-o-w clearing/avoidance recommendations, herbicide restrictions, mitigation options, and potential monitoring procedures, along with construction timing limitations related to breeding activities and the potential impacts of long-term r-o-w maintenance work.
- 9) That the Applicant shall have an environmental specialist on-site during clearing and all other construction activities within or near environmentally-sensitive areas, including streams, wetlands, and wooded areas.
- 10) That the Applicant shall immediately contact Staff, ODNR, and USFWS (for federally-listed species) if threatened or endangered species are encountered during construction activities. Activities that could adversely impact the identified species will be halted until an appropriate course of action has been agreed upon by the Applicant and Staff.
- 11) That prior to the commencement of construction, the Applicant shall present a plan to Staff for review and approval that mitigates potential recreational off-road vehicle use of the utility corridor to the extent practicable.
- 12) That the Applicant shall properly install and maintain erosion and sedimentation control measures at the project site in accordance with the following requirements:
  - a) During construction of the facility, seed all disturbed soil, except within cultivated agricultural fields, within seven (7) days of final grading with a seed mixture acceptable to the appropriate County Cooperative Extension Service. Denuded areas, including spoils piles, shall be seeded and stabilized within seven (7) days, if they will be undisturbed for more than twenty-one (21) days. Reseeding shall be done within seven days of emergence of seedlings as necessary until sufficient vegetation in all areas has been established.
  - b) Inspect and repair all erosion control measures after each rainfall event of one-half of an inch or greater over a twenty-four (24) hour period, and

maintain controls until permanent vegetative cover has been established on disturbed areas.

- c) Obtain NPDES permits for storm water discharges during construction of the facility. A copy of each permit or authorization, including terms and conditions, shall be provided to the Staff within seven (7) days of receipt. At least seven (7) days prior to the pre-construction conference, the construction Storm Water Pollution Prevention Plan shall be submitted to the Staff for review and acceptance.
- 13) That the Applicant shall minimize fugitive dust emissions through the use of water spray or other appropriate dust suppressant measures when necessary.
- 14) That the Applicant shall coordinate with the appropriate authority regarding any vehicular lane closures during construction.
- 15) That the Applicant shall avoid, where possible, or minimize to the maximum extent practicable, any damage to field drainage systems resulting from construction and operation of the facility. Damaged field tile systems shall be repaired to at least original conditions at Applicant's expense.
- 16) That the Applicant shall remove all temporary gravel and other construction laydown area and temporary access road materials within fourteen (14) days of completing construction activities.
- 17) That the Applicant shall not dispose of gravel or any other construction material during or following construction of the facility by spreading such material on agricultural land, unless a landowner requests that non-hazardous debris be left in non-environmentally sensitive areas of their property. All construction debris and any contaminated soil shall be promptly removed and properly disposed of in accordance with Ohio EPA regulations.
- 18) That if the Board selects the Alternate Route, the Applicant shall prepare a Phase I Cultural Resources Survey prior to construction. The survey shall be coordinated with the State Historic Preservation Office and submitted to Staff for review and acceptance at least 30 days prior to construction. If the survey discloses a find of cultural or archaeological significance, or a site that could be eligible for inclusion on the National Register of Historic Places, then the Applicant shall submit a route amendment, route modification, or mitigation plan for Staff's acceptance. The Applicant shall consult with Staff to determine the appropriate course of action.
- 19) That prior to the commencement of construction, the Applicant shall obtain and comply with all applicable permits and authorizations as required by federal and state laws and regulations for any activities where such permit or

authorization is required. Copies of permits and authorizations, including all supporting documentation, shall be provided to Staff within seven (7) days of issuance or receipt by the Applicant.

- 20) That the Applicant shall not commence construction of the facility until it has entered into an Interconnection Service Agreement with PJM, which includes construction of any system upgrades required by PJM.
- 21) That the Applicant shall conduct a pre-construction conference prior to the start of any project work, which the Staff shall attend, to discuss how environmental concerns will be satisfactorily addressed.
- 22) That at the time of the pre-construction conference, the Applicant shall have marked structure locations, the route's centerline and r-o-w clearing limits in environmentally sensitive areas.
- 23) That at least thirty (30) days before the pre-construction conference, the Applicant shall submit to the Staff, for review and approval, one set of detailed drawings for the certificated facility, including all laydown areas and access points; so that the Staff can determine that the final project design is in compliance with the terms of the certificate. The access plan shall consider the location of streams, wetlands, wooded areas, and threatened and endangered species.
- 24) That at least thirty (30) days prior to the pre-construction conference, the Applicant shall submit a detailed construction and restoration plan for all stream and wetland crossings for Staff's review and approval. The plan shall include sufficiently detailed information to address the following:
  - a) Construction methods to be used at each location, including site-specific access and equipment crossing proposals. Construction methods and equipment movement during both dry and wet conditions should be included.
  - b) Storm water erosion control practices to be used during construction work in and around each crossing location.
  - c) Any and all stream stabilization and wetland, stream, and riparian area restoration practices to be used.
  - d) That the Applicant shall use necessary means to ensure that no trees, limbs, branches, or other clearing residue is placed or disposed of in any stream, wetland, or other water body.
  - e) That the Applicant shall use necessary means to ensure that no fill, topsoil, stone, or other construction-related material is placed or

disposed of in any stream, wetland, or other water body, except for the short-term placement of stone, culvert pipe, timber mats, or other temporary stream crossing materials, as pre-approved by Staff.

f) That to the extent practicable, crossings of ephemeral streams should occur during no flow periods.

25) That the certificate shall become invalid if the Applicant has not commenced a continuous course of construction of the proposed facility within five (5) years of the date of journalization of the certificate.

26) That the Applicant shall provide to the Staff the following information as it becomes known:

a) The date on which construction will begin;

b) The date on which construction was completed;

c) The date on which the facility began commercial operation.

#### **D. Exhibits**

The Parties agree, stipulate, and recommend that the following exhibits in the docket be marked and admitted into the record of this proceeding, and that cross-examination is waived thereon:

- Applicant Exhibit No. 1: The Certificate Application filed on October 31, 2007 and certified as complete by the Board on December 27, 2007.
- Applicant Exhibit No. 2: The supplemental information to the Application filed by the Applicant on December 27, 2007.
- Applicant Exhibit No. 3: AMP-Ohio's submissions on July 18, 2008 and September 25, 2008 in response to Staff data requests.
- Applicant Exhibit No. 4: Proofs of publication of the first and second notices required by O.A.C. 4906-5-08, as filed with the Board on August 20, 2008 and October 15, 2008.

- Applicant Exhibit No. 5: A list of landowners within the planned route of the AMPGS Transmission Line and each property owner who may be approached by AMP-Ohio for any additional easement necessary for the construction, operation, or maintenance of the AMPGS Transmission Line who received letters describing the AMPGS Transmission Line, the certification process, and the public hearing dates, as required by O.A.C. 4906-5-08.
- Staff Exhibit No. 1: Staff Report of Investigation filed on October 7, 2008.
- Joint Exhibit No. 1: This Joint Stipulation, signed by counsel for the Applicant and Staff.

**E. Other Stipulations**

- 1) This Joint Stipulation is expressly conditioned upon its acceptance by the Board without material modification. In the event the Board rejects or materially modifies all or part of this Joint Stipulation, or imposes additional conditions or requirements upon the Parties, each Party shall have the right, within thirty (30) days of the Board's Order, to file an Application for Rehearing with the Board. Upon Rehearing by the Board, each Party shall have the right, within ten (10) days of the Board's Order on Rehearing, to file a Notice of Termination and Withdrawal of this Joint Stipulation. Upon Notice of Termination and Withdrawal of this Joint Stipulation by any Party, pursuant to the above provisions, this Joint Stipulation shall immediately become null and void. In such an event, a hearing shall go forward, and the Parties shall be afforded the opportunity to present evidence through witnesses, to cross-examine all witnesses, to present rebuttal testimony, and to file briefs on all issues.

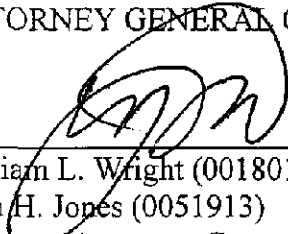
- 2) The Parties agree and recognize that this Joint Stipulation has been entered into only for the purpose of resolving this proceeding. Each Party agrees not to assert against the other Party in any proceeding before the Board or any court, other than in a proceeding to enforce the terms of this Joint Stipulation, that Party's participation in this Joint Stipulation as support for any particular position on any issue. Each Party further agrees that it will not use this Joint Stipulation as factual or legal precedent on any issue. The Parties request that the Board recognize that its use of this Joint Stipulation in any proceeding other than this proceeding is contrary to the intentions of the Parties in entering into this Joint Stipulation.


WHEREFORE, based upon the record, and the information and data contained therein, the Parties recommend that the Board issue a Certificate of Environmental Compatibility and Public Need for construction, operation, and maintenance of the AMPGS Transmission Line, as described in the Certificate Application and supplemental filing made with the Board.

The undersigned stipulate and represent that they are authorized to enter into this Joint Stipulation on this the \_\_th day of October 2008.


ON BEHALF OF THE STAFF OF  
THE OHIO POWER SITING BOARD

By: NANCY H. ROGERS  
ATTORNEY GENERAL OF OHIO

By:   
William L. Wright (0018010)  
John H. Jones (0051913)  
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ON BEHALF OF AMERICAN MUNICIPAL POWER-OHIO, INC.

By:   
John W. Bentine (0016388)  
Trial Counsel  
Nathaniel S. Orosz (0077770)  
Chester Willcox & Saxbe LLP  
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# **Applicant Exhibit No. 2**

FILE

**CHESTER WILLCOX & SAXBE LLP**

*Attorneys and Counselors at Law*

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117  
norosz@cwslaw.com

December 27, 2007

**VIA HAND DELIVERY**

Ohio Power Siting Board  
Docketing Division  
180 East Broad Street  
Columbus, OH 43215-3793

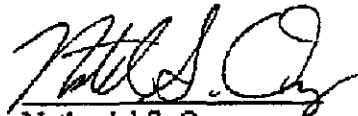
Re: PJM Power Flow Base Case Data - Case No. 06-1357-EL-BTX -- In the  
Matter of the Application of American Municipal Power-Ohio, Inc. for a  
Certificate of Environmental Compatibility And Public Need for an  
Electric Power Transmission Line and Related Facilities.

Dear Docketing Division:

Please docket the enclosed copy of a cover letter provided to Power Siting Board Staff that accompanied electronic copies of PJM Regional Transmission Expansion Plan Load Flow Data to be considered as part of American Municipal Power-Ohio, Inc.'s ("AMP-Ohio's") application for a certificate to construct an electric power transmission line. This information was provided to Staff on December 27, 2007.

Please contact me with any questions.

Respectfully,



Nathaniel S. Orosz

*Attorney for American Municipal Power-Ohio, Inc.*

2007 DEC 27 PM 4:05  
PUCO

**CHESTER WILLCOX & SAXBE LLP**

*Attorneys and Counselors at Law*

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117  
norosz@cwslaw.com

December 27, 2007

**VIA HAND DELIVERY**

James O'Dell  
Ohio Power Siting Board  
180 East Broad Street  
Columbus, OH 43215-3793

Re: PJM Power Flow Base Case Data - Case No. 06-1357-EL-BTX - *In the Matter of the Application of American Municipal Power-Ohio, Inc. for a Certificate of Environmental Compatibility And Public Need for an Electric Power Transmission Line and Related Facilities.*

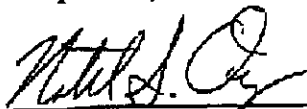
Dear Jim:

Enclosed please find ten electronic copies of PJM Regional Transmission Expansion Plan Load Flow Data to be considered as part of American Municipal Power-Ohio, Inc.'s ("AMP-Ohio's") application for a certificate to construct an electric power transmission line. An electronic version of this document is being provided to Staff in lieu of a paper copy due to its size.

If requested, AMP-Ohio can provide additional electronic or paper copies of this information to Staff or any other person who requests a copy.

Please contact me with any questions.

Respectfully,



Nathaniel S. Orosz

*Attorney for American Municipal Power-Ohio, Inc.*

# **Applicant Exhibit No. 3**

71  
**CHESTER WILLCOX & SAXBE LLP**

*Attorneys and Counselors at Law*

**FILE**

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117  
nrosz@cpsb.ohio.gov

July 18, 2008

*Via Hand Delivery*

Renee Jenkins  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street – 13<sup>th</sup> Floor  
Columbus, Ohio 43215

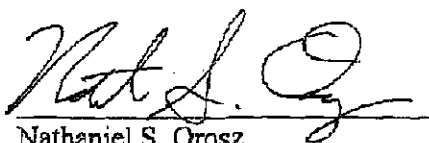
RECEIVED  
JUL 18 PM 3:14  
PUCO

**RE: OPSB Case No. 06-1357-EL-BTX  
Correspondence Submitted to Staff**

Dear Ms. Jenkins:

Please docket the enclosed materials, which were submitted to Ohio Power Siting Board ("OPSB") Staff on July 18, 2008 with regard to the accepted, complete application in OPSB Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities.

Respectfully,



Nathaniel S. Orosz  
Counsel for American Municipal Power-Ohio, Inc.

cc: Judge Gregory Price – 12<sup>th</sup> Floor

ND: 4834-2320-7938, v. 1

July 18, 2008

*Via Hand Delivery*

Klaus Lambeck  
Chief  
Facilities, Siting & Environmental Analysis Division  
Ohio Power Siting Board  
180 East Broad Street  
Columbus, Ohio 43215



**RE: OPSB Case No. 06-1357-EL-BTX  
Modification of Transmission Line Route**

Dear Klaus:

I am writing on behalf of American Municipal Power-Ohio, Inc. ("AMP-Ohio") to provide documentation of a modification of the proposed transmission route related to AMP-Ohio's pending application before the Ohio Power Siting Board in OPSB Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities ("Application").

As set forth in O.A.C. 4906-5-10(A)(6), this modification is not an amendment to the accepted, complete Application because it is within 2,000 feet of the study corridor, will not impact any additional landowners, and will not create further impacts within the planned right-of-way of the proposed facility.

Please do not hesitate to contact me if you have any questions.

On Behalf of the Members,

Scott Kiesewetter  
Manager of New Plant Engineering  
American Municipal Power-Ohio, Inc.

Enclosures

cc: Docketing Division - 13<sup>th</sup> Floor  
John Bentine - AMP-Ohio counsel  
Jolene Thompson - AMP-Ohio

OHIO: AMHERST • ARCADIA • ARCANUM • BEACH CITY • BLANCHESTER • BLOOMDALE • BOWLING GREEN • BRADNER • BREWSTER • BRYAN • CAREY • CELINA • CLEVELAND  
CLYDE • COLUMBIANA • COLUMBUS • CUSTAR • CUYAHOGA FALLS • CYGNET • DESHLER • DOVER • EDGERTON • ELDORADO • ELMORE • GALION • GENOA • GLOUSTER • GRAFTON  
GREENWICH • HAMILTON • HASKINS • HOLIDAY CITY • HUBBARD • HUDSON • HURON • JACKSON • JACKSON CENTER • LAKEVIEW • LEBANON • LODI • LUCAS • MARSHALLVILLE  
MENDON • MILAN • MINSTER • MONROEVILLE • MONTPELIER • NAPOLEON • NEW BREMEN • NEW KNOXVILLE • NEWTON FALLS • NILES • OAK HARBOR • OBERLIN • OHIO CITY • ORRVILLE  
PAINESVILLE • PEMBERTON • PIONEER • PIQUA • PLYMOUTH • PROSPECT • REPUBLIC • ST. CLAIRSVILLE • ST. MARYS • SEVILLE • SHELBY • SHILOH • SOUTH VIENNA • SYCAMORE  
TIPP CITY • VERSAILLES • WADSWORTH • WAPAKONETA • WAYNESFIELD • WELLINGTON • WESTERVILLE • WHARTON • WOODSFIELD • WOODVILLE • YELLOW SPRINGS  
PENNSYLVANIA: BERLIN • BLAKELY • CATAWISSA • DUNCANNON • EAST CONEMAUGH • ELLWOOD CITY • GIRARD • GROVE CITY • HATFIELD • HOOVERSVILLE • KUTZTOWN  
LANSDALE • LEHIGHTON • LEWISBERRY • MIDDLETOWN • MIFFLINBURG • NEW WILMINGTON • OLYPHANT • QUAKERTOWN • ROYALTON • ST. CLAIR • SCHUYLKILL HAVEN  
SUMMERHILL • WATSONTOWN • WEATHERLY  
VIRGINIA: BEDFORD • DANVILLE • MARTINSVILLE • RICHMOND  
WEST VIRGINIA: NEW MARTINSVILLE • PHILLIPS  
MICHIGAN: DOWAGIAC • WYANDOTTE





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## ATTACHMENT A

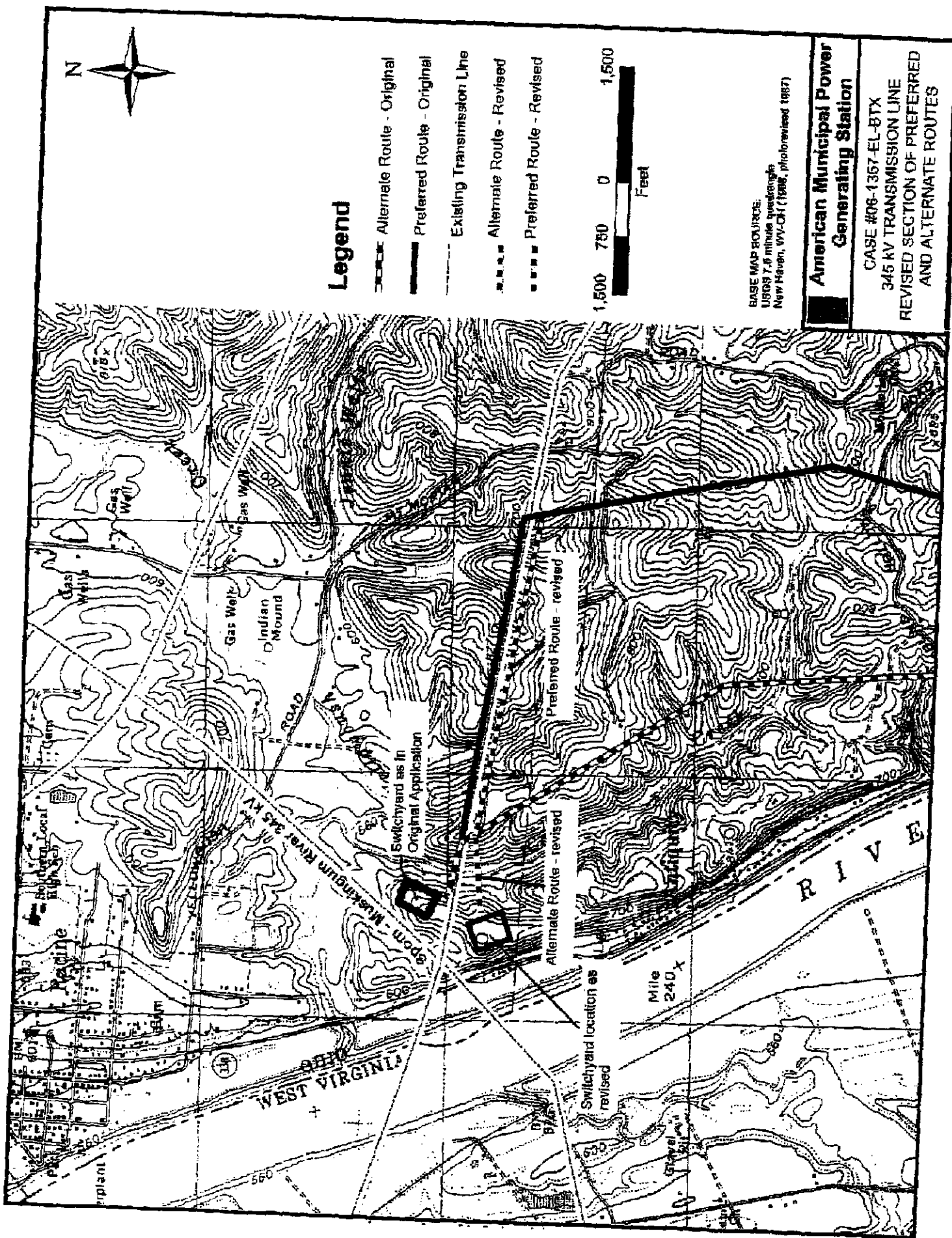
Figure depicting:

Revised section of preferred and alternate  
transmission route and interconnection switchyard  
location

and

Original preferred and alternate transmission route  
and interconnection switchyard location.





# Legend

- Alternate Route - Original
- Preferred Route - Original
- Existing Transmission Line
- Alternate Route - Revised
- Preferred Route - Revised



BASE MAP SOURCE:  
USGS 7.5 minute quadrangle  
New Haven, WV-CH (1988, photorevised 1987)

**American Municipal Power  
Generating Station**

CASE #06-1357-EL-BTX  
345 KV TRANSMISSION LINE  
REVISED SECTION OF PREFERRED  
AND ALTERNATE ROUTES

## ATTACHMENT B

Updated Wetland Delineation and Stream  
Assessment Report covering the modified preferred  
transmission route, alternate transmission route and  
interconnection switchyard.





July 7, 2008

Mr. Scott Kieseewetter  
American Municipal Power  
2600 Airport Drive  
Columbus, Ohio 43219

**Re: Alternate Route Wetland Delineation and Stream Assessment Report,  
AMP-Ohio 345 kV Transmission Line Project, Meigs County, Ohio**

Dear Mr. Kieseewetter:

American Municipal Power-Ohio, Inc. (AMP-Ohio) is planning to construct a transmission line that will connect its proposed 1,000-MW pulverized coal fired power plant to an interconnection switchyard located south of the existing American Electric Power (AEP) Sporn-Kaiser No. 1 138 kV transmission line. The proposed transmission line is located in the Letari Falls area of Meigs County, Ohio. This letter report summarizes the findings of the wetland delineation and stream assessment conducted by URS for the Alternate Route. The delineation and assessment was conducted in August 2006, June 2007, April, and July 2008. Figure 1 shows the proposed delineated area and the surrounding vicinity.

The ecological assessment for this project was conducted by a qualified URS biologist. The assessment was comprised of an Army Corps of Engineers (ACOE) jurisdictional wetland delineation, Ohio EPA Ohio Rapid Assessment Method (ORAM) version 5.0 qualitative wetland assessments, and Headwater Habitat Evaluation Index (HHED) and Qualitative Habitat Evaluation Index (QHEI) for surface drainages.

#### Methods

The project site was investigated for the presence of wetlands using the procedures outlined in the ACOE Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory, 1987). Completed ACOE wetland delineation forms for wetland W1 and Alt-W1 are included in Attachment 1. Additionally, URS prepared Ohio EPA ORAM version 5.0, (ORAM v5.0 Manual) qualitative wetland evaluation forms for these wetlands, which are included in Attachment 1. Habitat assessments for streams with a drainage area less than one square mile and located within the 150-foot construction right-of-way (ROW), were conducted using the methods described in the Ohio EPA's *Field Evaluation Manual for Ohio's Primary Headwater*

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*Habitat Streams: Final Version 1.0* (Davie, 2001) (HHEI). The completed HHEI forms are included in Attachment 3. Habitat assessment of streams with a drainage area greater than one square mile and located within the 150-foot construction ROW, were conducted using the methods described in the Ohio EPA's *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index* (Rankin, 2006) (QHEI). The completed QHEI forms are included in Attachment 2. The locations and approximate extents of these features are provided on Figure 1.

## **Results**

### ***U.S. Army Corps of Engineers Evaluation***

Two wetlands, totaling 1.13 acres were delineated within the 150-foot construction ROW. Wetland W1 covers an area of 0.90 acres. Wetland Alt-W1 covers an area of 0.22 acres. Wetland W1 is labeled PEM/PSS with a small PFO component based on Cowardin Wetland Classification. Wetland Alt-W1 is labeled PEM based on the Cowardin Wetland Classification. See Table 1 for details on both wetlands.

Based upon the procedure identified in the *1987 Manual*, the areas delineated in Figure 1 are wetlands, as they meet vegetation, soil and hydrology wetland criteria. Upland areas were observed to contain some wetland vegetation, but did not meet the hydrology and/or soils criteria of the *1987 Manual*.

### ***Ohio EPA ORAM Evaluation***

According to the Ohio EPA ORAM evaluation, wetland W1 scored 58.5/100, indicating it is a Category II wetland. Wetland Alt-W1 scored 42/100, indicating it is a Category II wetland. The Category II wetland exhibited moderate to high quality plant communities with few invasive species, moderate to good plant community interspersions, low to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovered and/or no modification to natural hydrology and habitat. See Table 1 regarding delineated Alternate Route wetlands.

### ***Ohio EPA QHEI Evaluation***

Ohio EPA QHEI forms for stream habitat assessments were completed for one stream located within the 150-foot construction ROW. The completed QHEI stream form is included in Attachment 2. The location of these streams is provided on Figure 1.

The QHEI method is generally considered appropriate for streams with drainage basins greater than one square mile, if natural pools are greater than 40 cm, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the Ohio EPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams (H are those with a watershed area less than or equal to 20 square miles) versus larger streams (L are those with a watershed area greater than 20 square miles). The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L).

Field surveys along the Alternate Route identified one stream with a drainage area greater than one square mile. The QHEI evaluation of the stream resulted in a "good warmwater habitat" stream designation.

### ***Ohio EPA HHEI Evaluation***

Ohio EPA HHEI forms for stream habitat assessment were completed for 26 streams located within the 150-foot construction ROW. The completed HHEI stream forms are included in Attachment 3. The location of these streams is provided on Figure 1.

The HHEI methodology uses a 100-point scale for scoring. The score is based on composition of substrate, pool depth, and bankfull width. Once a score is obtained, it is applied to the decision-making flow chart. This chart serves to assign a class to streams based upon stream channel modifications, biotic communities, and percentage of substrate comprised of bedrock, boulder, boulder slabs, and cobble.

The Alternate Route contains 26 primary headwater streams including: seven Class I streams, two Modified Class II streams, and 17 Class II streams. Alternate Route streams are summarized in Table 2.

***Class I Streams*** - Seven Class I headwater streams were identified during the field investigation with scores ranging from a low of 11 to a high of 28. The substrate composition of these streams is generally dominated by silt, clay, leafpack/woody debris. Muck, sand, and gravel are also noted as less dominant substrate types in this stream class. Maximum pool depth is less 0 inches. The bankfull width for this group of streams is less than 3 feet.

***Class II Headwater Streams*** - Seventeen Class II headwater streams were identified during the field investigation with scores ranging from a low of 31 to a high of 57. The substrate composition of these streams is generally dominated by gravel, silt, and sand. Cobble, leafpack/woody debris, and boulder slabs are also noted as less dominant substrate types in this class of stream. The maximum pool depth is less than 12 inches. The bank full width for this group of streams is generally less than 11 feet.

***Modified Class II Headwater Streams*** - Two Modified Class II headwater streams were evaluated during the field investigation with scores ranging from 37 to 45. The substrate of these streams is dominated by gravel and cobble. Muck, silt, and sand, are noted as less dominant substrate types. The maximum pool depth is 0 inches. The bank full width is between 3 and 7 feet. These headwater streams show evidence of stream channel modification (e.g. channelization, culverting, etc.), which in turn resulted in a modified class designation.

### **Interconnection Switchyard**

Field surveys identified no wetlands within the interconnection switchyard (switchyard) boundary. Field surveys did identify one headwater stream, S37, within the switchyard boundary. Stream S37 scored 19/100, classifying it as a Class I stream as shown in Table 3. The

substrate of this stream is dominated by leafpack/woody debris and sand. Gravel, cobble, and fine detritus are noted as less dominant substrate types. The maximum pool depth is 0 inches. The bankfull width is 1 foot.

### **Comparison to Preferred Route**

The Preferred Route contains 30 streams within the 150-foot construction ROW, one QHEI evaluated stream (same as crossed by Alternate Route) and 29 HHEI evaluated headwater streams. The QHEI evaluated stream received a "good warmwater habitat" narrative rating. Eleven Class I streams, 10 Class II streams, and eight Class III streams were evaluated using the HHEI method. See Table 4 for a description of streams found with the Preferred Route 150-foot construction ROW.

Two wetlands identified within the Preferred Route, totaling 0.91 acres were delineated within the 150-foot construction ROW. Wetland W1 covers an area of 0.90 acres. Wetland W2 covers an area of 0.01 acres. Wetland W1 is labeled PEM/PSS with a small PFO component based on Cowardin Wetland Classification. Wetland W2 is labeled PEM based on the Cowardin Wetland Classification. See Table 5 for details on both wetlands.

According to the Ohio EPA ORAM evaluation, wetland W1 scored 58.5/100, indicating it is a Category II wetland. Wetland W2 scored 54/100, indicating it is a Category II wetland. The Category II wetland exhibited moderate to high quality plant communities with few invasive species, moderate to good plant community interspersions, low to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovered and/or no modification to natural hydrology and habitat. See Table 5 regarding Preferred Route wetlands.

### **Conclusions**

Two jurisdictional (i.e. non-isolated), wetlands, totaling 1.13 acres, were identified within the 150-foot construction ROW of the Alternate Route. URS's Ohio EPA ORAM evaluation of both wetlands resulted in both wetlands being designated as Category II.



Twenty-seven streams were identified within the 150-foot construction ROW. One stream was evaluated using the QHEI methodology and resulted in a narrative rating of "good warmwater habitat" stream. Twenty-six headwater streams were evaluated using the HHEI methodology; seven Class I streams, 17 Class II streams, and two Modified Class II streams.

One HHEI evaluated Class I stream was identified within the interconnection switchyard boundary.

Two wetlands identified within the Preferred Route, totaling 0.91 acres, were delineated within the 150-foot construction ROW. Thirty streams within the Preferred Route 150-foot construction ROW were assessed, one QHEI evaluated stream, a "good warmwater habitat stream", and 29 HHEI evaluated headwater streams; 11 Class I streams, 10 Class II streams, and eight Class III streams.

Approximately 5 miles of new electric transmission line will be built to connect the project to the electric grid. No wetlands or streams will be filled as part of the transmission line construction or operation. Construction will require stream crossings but these will be temporary and will be discussed with the OEPA and OPSB during preconstruction meetings. The crossing method will vary according to width and quality of the stream, but will be designed in accordance with the Rainwater and Land Development Manual published by the ODNR/OEPA. Erosion control and restoration will be conducted according to the conditions of the Stormwater Pollution Prevention Plan and OPSB Application.

The construction of the interconnect switchyard will require minimum impact to stream S37, however impacts will be mitigated through the proposed off-site stream mitigation.

**URS**

Mr. Scott Kieseewer  
7/7/2008  
Revision 1  
Page 7


If you have any questions or comments regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

URS



Matthew Thomayer  
Environmental Scientist



James Nicholas, Ph.D.  
Principal Scientist

**TABLE 1**  
**WETLANDS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE**  
**ALTERNATE ROUTE CORRIDOR**

| <b>Wetland ID</b> | <b>Cowardin Wetland Type</b> | <b>ORAM Score</b> | <b>ORAM Category</b> | <b>Linear Feet Crossed</b> | <b>Acres within 150-foot Corridor</b> |
|-------------------|------------------------------|-------------------|----------------------|----------------------------|---------------------------------------|
| W1                | PEM/SS with PFO Component    | 58.5              | II                   | 252                        | 0.90                                  |
| Alt-W1            | PEM                          | 42                | II                   | 75                         | 0.22                                  |
| <b>Total: 2</b>   |                              |                   |                      | <b>327</b>                 | <b>1.13</b>                           |

**TABLE 2**  
**STREAMS LOCATED IN THE AMP-OHIO 345 KV TRANSMISSION LINE ALTERNATE ROUTE CORRIDOR**

| Name    | Flow Regime  | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length within 150-foot Corridor (feet) |
|---------|--------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--|
| S33     | Perennial    | 6                     | 12                          | HHEI              | 52    | Class 2                | 189.7                                  |
| Alt-S1  | Intermittent | 3                     | 0                           | HHEI              | 11    | Class 1                | 124.0                                  |
| Alt-S2  | Intermittent | 3                     | 0                           | HHEI              | 37    | Modified Class 2       | 153.7                                  |
| Alt-S3  | Intermittent | 3                     | 0                           | HHEI              | 15    | Class 1                | 216.9                                  |
| Alt-S4  | Ephemeral    | 3.5                   | 0                           | HHEI              | 41    | Class 2                | 147.5                                  |
| Alt-S5  | Ephemeral    | 7                     | 0                           | HHEI              | 47    | Class 2                | 125.1                                  |
| Alt-S6  | Ephemeral    | 7                     | 0                           | HHEI              | 40    | Class 2                | 196.7                                  |
| Alt-S7  | Intermittent | 10.5                  | 0                           | HHEI              | 50    | Class 2                | 170.4                                  |
| Alt-S8  | Intermittent | 7                     | 0                           | HHEI              | 45    | Modified Class 2       | 260.3                                  |
| Alt-S9  | Ephemeral    | 6                     | 0                           | HHEI              | 57    | Class 2                | 144.0                                  |
| Alt-S10 | Ephemeral    | 9.5                   | 0                           | HHEI              | 53    | Class 2                | 191.3                                  |
| Alt-S11 | Ephemeral    | 8                     | 0                           | HHEI              | 40    | Class 2                | 90.3                                   |
| Alt-S12 | Ephemeral    | 7                     | 0                           | HHEI              | 31    | Class 2                | 268.8                                  |
| Alt-S13 | Intermittent | 6                     | 0                           | HHEI              | 32    | Class 2                | 380.8                                  |
| Alt-S14 | Ephemeral    | 6                     | 0                           | HHEI              | 38    | Class 2                | 165.2                                  |
| Alt-S15 | Ephemeral    | 11                    | 0                           | HHEI              | 50    | Class 2                | 92.6                                   |
| Alt-S16 | Ephemeral    | 11                    | 0                           | HHEI              | 50    | Class 2                | 155.0                                  |
| Alt-S17 | Ephemeral    | 10                    | 0                           | HHEI              | 54    | Class 2                | 155.0                                  |
| S31     | Perennial    | 7                     | 24                          | QHEI              | 63    | Good Warmwater Habitat | 160.9                                  |
| S38     | Ephemeral    | 2                     | 0                           | HHEI              | 23    | Class 1                | 150.5                                  |

July 2008  
AMP-OHIO  
14947359

Table 2  
Revision 1

AMP-OHIO 345 KV Transmission  
Line Project (Alternate Route)

**TABLE 2**  
**STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE ALTERNATE ROUTE CORRIDOR**

| Name             | Flow Regime | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length within 150-foot Corridor (feet) |
|------------------|-------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--|
| S39              | Perennial   | 3                     | 6                           | HHEI              | 44    | Class 2                | 215.7                                  |
| S40              | Perennial   | 2                     | 2                           | HHEI              | 28    | Class 1                | 171.3                                  |
| S41              | Perennial   | 1.5                   | 1                           | HHEI              | 24    | Class 1                | 148.4                                  |
| S42              | Perennial   | 2                     | 1.5                         | HHEI              | 17    | Class 1                | 174.2                                  |
| S43              | Perennial   | 3.5                   | 3                           | HHEI              | 45    | Class 2                | 192.8                                  |
| S44              | Perennial   | 3.5                   | 3                           | HHEI              | 48    | Class 2                | 189.8                                  |
| S45              | Epheemeral  | 2                     | 0                           | HHEI              | 19    | Class 1                | 164.3                                  |
| <b>Total: 27</b> |             | <b>151</b>            | <b>53</b>                   |                   |       |                        | <b>4,795.4</b>                         |

**TABLE 3**  
**STREAMS LOCATED IN THE AMP-OHIO INTERCONNECT SWITCHYARD**

| <b>Name</b>     | <b>Flow<br/>Regime</b> | <b>Bankfull<br/>Width<br/>(feet)</b> | <b>Maximum<br/>Pool<br/>Depth<br/>(inches)</b> | <b>Assessment<br/>Method</b> | <b>Score</b> | <b>Class</b> | <b>Length<br/>within<br/>Switchyard<br/>(feet)</b> |
|-----------------|------------------------|--------------------------------------|--|------------------------------|--------------|--------------|--|
| S37             | Ephemeral              | 1                                    | 0  | HHEI                         | 19           | Class 1      | 182  |
| <b>Total: 1</b> |                        | <b>1</b>                             | <b>0</b>                                       |                              |              |              | <b>182</b>   |

TABLE 4

STREAMS LOCATED IN THE AMP-OHIO 345 KV TRANSMISSION LINE  
PREFERRED ROUTE CORRIDOR

| Stream Name | Flow Regime  | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length of Stream within 150-foot ROW |
|-------------|--------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--------------------------------------|
| S01         | Intermittent | 4                     | 3                           | HHEI              | 56    | Class II               | 168.1                                |
| S02         | Epheemeral   | 1.5                   | 0                           | HHEI              | 19    | Class I                | 162.1                                |
| S03         | Intermittent | 3                     | 3                           | HHEI              | 39    | Class II               | 226.0                                |
| S04         | Epheemeral   | 1.5                   | 0                           | HHEI              | 24    | Class I                | 177.2                                |
| S06         | Epheemeral   | 7                     | 0                           | HHEI              | 37    | Class II               | 177.6                                |
| S07         | Epheemeral   | 3                     | 0                           | HHEI              | 19    | Class I                | 52.3                                 |
| S08         | Epheemeral   | 3                     | 0                           | HHEI              | 27    | Class I                | 177.5                                |
| S09         | Epheemeral   | 6                     | 0                           | HHEI              | 39    | Class II               | 181.5                                |
| S10         | Intermittent | 7.5                   | 2                           | HHEI              | 55    | Class III              | 229.1                                |
| S11         | Epheemeral   | 2                     | 2                           | UHBI              | 34    | Class II               | 158.8                                |
| S12         | Intermittent | 2.5                   | 4                           | HHEI              | 45    | Class III              | 309.4                                |
| S13         | Perennial    | 2.5                   | 3                           | HHEI              | 26    | Class I                | 59.8                                 |
| S14         | Perennial    | 5.5                   | 4                           | HHEI              | 64    | Class III              | 152.8                                |
| S15         | Perennial    | 7                     | 2                           | HHEI              | 62    | Class III              | 155.1                                |
| S16         | Intermittent | 5                     | 3                           | UHBI              | 54    | Class III              | 201.5                                |
| S17         | Epheemeral   | 3                     | 0                           | HHEI              | 18    | Class I                | 227.1                                |
| S18         | Epheemeral   | 2.5                   | 0                           | HHEI              | 41    | Class II               | 299.1                                |
| S19         | Perennial    | 7                     | 8                           | UHBI              | 82    | Class III              | 213.0                                |
| S20         | Epheemeral   | 4                     | 0                           | HHEI              | 30    | Class II               | 196.5                                |

**TABLE 4**  
**STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE**  
**PREFERRED ROUTE CORRIDOR**

| Stream Name     | Flow Regime  | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length of Stream within 150-foot ROW |
|-----------------|--------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--------------------------------------|
| S21             | Intermittent | 6                     | 3                           | HHH               | 62    | Class III              | 152.9                                |
| S22             | Epithermal   | 3                     | 0                           | HHH               | 9     | Class I                | 152.0                                |
| S24             | Epithermal   | 2.5                   | 0                           | HHH               | 25    | Class I                | 174.7                                |
| S25             | Epithermal   | 4                     | 0                           | HHH               | 35    | Class II               | 190.3                                |
| S27             | Intermittent | 8                     | 10                          | HHH               | 71    | Class III              | 173.4                                |
| S29             | Epithermal   | 1                     | 0                           | HHH               | 9     | Class I                | 89.9                                 |
| S31             | Perennial    | 17                    | 24                          | QH                | 63    | Good Warmwater Habitat | 160.9                                |
| S33             | Perennial    | 7                     | 12                          | HHH               | 52    | Class II               | 189.7                                |
| S35             | Intermittent | 3                     | 0                           | HHH               | 19    | Class I                | 298.1                                |
| S36             | Epithermal   | 3                     | 0                           | HHH               | 32    | Class II               | 135.3                                |
| S38             | Epithermal   | 2                     | 0                           | HHH               | 23    | Class I                | 150.8                                |
| <b>Total:30</b> |              | <b>133</b>            | <b>83</b>                   |                   |       |                        | <b>5372.5</b>                        |

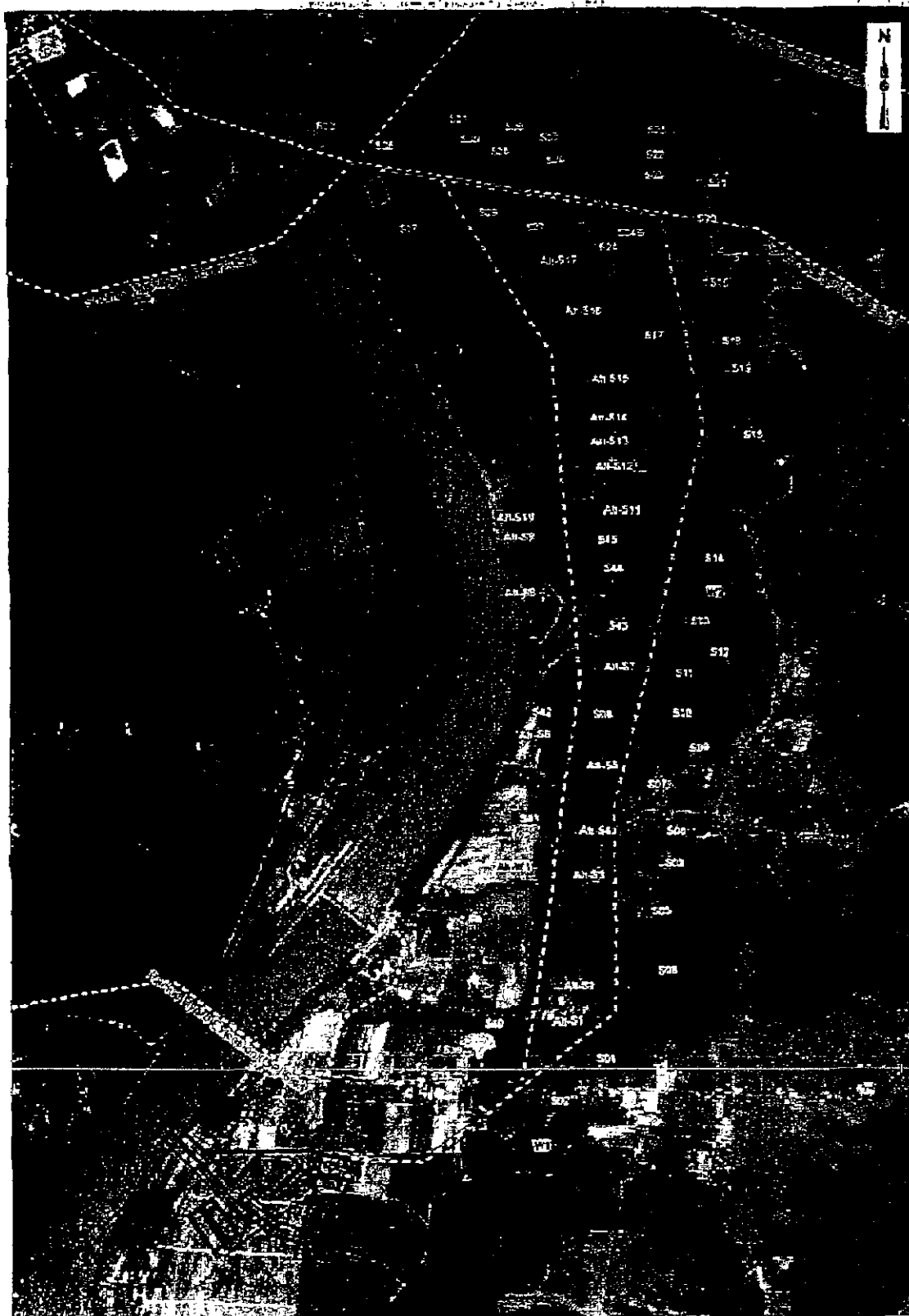
AMP-OHIO 345 kV Transmission  
Line Project (Alternate Route)

Table 4



**TABLE 5**  
**WETLANDS LOCATED IN THE AMP-OHIO 345 kV**  
**TRANSMISSION LINE PREFERRED ROUTE CORRIDOR**

| <b>Wetland ID</b> | <b>Cowardin Wetland Type</b> | <b>ORAM Score</b> | <b>ORAM Category</b> | <b>Linear Feet Crossed</b> | <b>Acreage within 150-foot Corridor</b> |
|-------------------|------------------------------|-------------------|----------------------|----------------------------|---|
| W1                | PEM/SS with PFC Component    | 58.5              | II                   | 252                        | 0.90                                    |
| W2                | PEM                          | 54                | II                   | 9                          | 0.01                                    |
| <b>Total: 2</b>   |                              |                   |                      | <b>261</b>                 | <b>0.91</b>                             |



# LEGEND

- 1. 100-foot Floodplain Boundary
- 2. 50-foot Floodplain Boundary
- 3. 100-foot Floodplain Boundary
- 4. 50-foot Floodplain Boundary
- 5. 100-foot Floodplain Boundary
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- 100. 50-foot Floodplain Boundary

0 1,750 3,500

Scale in Feet

BASE MAP SOURCE:  
Aerial Photography, 1985  
USGS Topographic Series, 1985



AMP - OHIO  
BASE LOAD GENERATING FACILITY

FIGURE 1  
REVISION 1  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

USACE VLM/STC

URS

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**ATTACHMENT 1**

**U.S. ARMY CORPS OF ENGINEERS  
AND  
OHIO EPA ORAM  
DATA SHEETS**

## 41

740  
100 pages

[illegible]

|  |   |   |
|--|---|---|
| Recounted Basin (Discipline in file name)<br>— Stream, Leap or Tain Change<br>— Aerial Photographs<br>— Other<br>(No recaptured from Appendix) | Field Observations<br>Quantified Qualitative Water<br>Depth to Free Water in ft<br>Depth to Seawater ft | Wetland Hydrology Indicators<br>Primary Indicators<br>— <input checked="" type="checkbox"/> Ponded<br>— <input checked="" type="checkbox"/> Saturation in Upper 13 inches<br>— <input checked="" type="checkbox"/> Water Marks<br>— <input checked="" type="checkbox"/> Soil Upland<br>— <input checked="" type="checkbox"/> Reduced Drapings<br>— <input checked="" type="checkbox"/> Drainage Patterns in Wetlands<br>Secondary Indicators (2 of 4 in request)<br>— <input checked="" type="checkbox"/> Chlorophyll Root Channel in Upland 13'<br>— <input checked="" type="checkbox"/> Water-Soaked Leaves<br>— <input checked="" type="checkbox"/> Local Soil Spray Drains<br>— <input checked="" type="checkbox"/> Macrophyte Tolerant<br>— <input checked="" type="checkbox"/> Other Features in Paragraphs |
|--|---|---|

Remains  
 strong wetland hydrology; stream persists wetland

staying within hydrology; stream insects

Abstracted by: JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

[illegible]

|                                  |     |     |     |
|----------------------------------|-----|-----|-----|
| Hydrolytic degradation observed? | Yes | Yes | Yes |
| Visible hydrolytic products?     | Yes | Yes | Yes |
| Hydrolytic products?             | Yes | Yes | Yes |



ROUTINE WETLAND DETERMINATION DATA FORM 1987 MANDAL

Project: ALT Trans Bank  
 Applicant/Owner: Alt Trans Bank  
 Investigator: Boyd, L. Brown, L. Miller  
 Date: 6-18-87 County: Alaska Township: 10N  
 Section: 24 Plot ID: 10N 1 - 24

Do Normal Circumstances exist on the site? YES  
 Is the site significantly & recently disturbed (Atypical Situation)? YES  
 Is the area a potential Problem Area? (Explain in brief comments) YES

VEGETATION

| Rank | Species                   | Indicator  |
|------|---------------------------|------------|
| 1    | <u>Scirpus americanus</u> | <u>FLU</u> |
| 2    | <u>Scirpus americanus</u> | <u>FLU</u> |
| 3    | <u>Scirpus americanus</u> | <u>FLU</u> |
| 4    | <u>Scirpus americanus</u> | <u>FLU</u> |
| 5    |                           |            |
| 6    |                           |            |
| 7    |                           |            |
| 8    |                           |            |
| 9    |                           |            |
| 10   |                           |            |

Percent of Dominant Species that are DBL, FACN, or FAC (including FACN) 25

Hydrologic Vegetation Present? YES  
 REMARKS

HYDROLOGY

RECORDS DATA (Describe in Remarks)  
☐ Stream, Lake or Tide Gauge  
☐ Aerial Photographs  
☐ Other  
☐ None Available

FIELD OBSERVATIONS  
 Depth of Surface Water 10 ft  
 Depth of Free Water in Pond 10 ft  
 Depth of Saturated Soil 10 ft

Wetland Hydrology Present? YES

REMARKS

PRIMARY Indicators

☐ Inundated  
☐ Submerged in Upper 12"  
☐ Water Marks  
☐ Soil Lines  
☐ Sediment Deposits  
☐ Drainage Patterns in Wetlands

SECONDARY Indicators

☐ Disturbed Rain Channels in Upper 12"  
☐ Water Stained Leaves  
☐ Local Soil Shrinky Cracks  
☐ FAC-Natural Tax  
☐ Other (Explain in Remarks)

SOILS

WAD Line Name Drainage Class  
 Series and Phase  
 Taxonomy (Subgroup) Fine Grained, Coastal  
 Mapped Type Yes 10

PROFILE DESCRIPTION

| Depth  | Moisture | Texture | Structure | Color    | Notes          |
|--------|----------|---------|-----------|----------|----------------|
| 0-10   | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 10-20  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 20-30  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 30-40  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 40-50  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 50-60  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 60-70  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 70-80  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 80-90  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 90-100 | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |

Hydrologic Soil Indicators  
☐ Mottled  
☐ Gley  
☐ Iron  
☐ Organic  
☐ Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrologic Vegetation Present? YES  
 Wetland Hydrology Present? YES  
 Hydro Soil Present? YES  
 REMARKS

ROUTINE WETLAND DETERMINATION DATA FORM 1987 MANDAL

Project: ALT Trans Bank  
 Applicant/Owner: Alt Trans Bank  
 Investigator: Boyd, L. Brown, L. Miller  
 Date: 6-18-87 County: Alaska Township: 10N  
 Section: 24 Plot ID: 10N 1 - 24

Do Normal Circumstances exist on the site? YES  
 Is the site significantly & recently disturbed (Atypical Situation)? YES  
 Is the area a potential Problem Area? (Explain in brief comments) YES

VEGETATION

| Rank | Species                   | Indicator  |
|------|---------------------------|------------|
| 1    | <u>Scirpus americanus</u> | <u>DBL</u> |
| 2    | <u>Scirpus americanus</u> | <u>DBL</u> |
| 3    | <u>Scirpus americanus</u> | <u>DBL</u> |
| 4    | <u>Scirpus americanus</u> | <u>DBL</u> |
| 5    |                           |            |
| 6    |                           |            |
| 7    |                           |            |
| 8    |                           |            |
| 9    |                           |            |
| 10   |                           |            |

Percent of Dominant Species that are DBL, FACN, or FAC (including FACN) 100

Hydrologic Vegetation Present? YES  
 REMARKS

HYDROLOGY

RECORDS DATA (Describe in Remarks)  
☐ Stream, Lake or Tide Gauge  
☐ Aerial Photographs  
☐ Other  
☐ None Available

FIELD OBSERVATIONS  
 Depth of Surface Water 10 ft  
 Depth of Free Water in Pond 10 ft  
 Depth of Saturated Soil 10 ft

Wetland Hydrology Present? YES

REMARKS

PRIMARY Indicators

☐ Inundated  
☐ Submerged in Upper 12"  
☐ Water Marks  
☐ Soil Lines  
☐ Sediment Deposits  
☐ Drainage Patterns in Wetlands

SECONDARY Indicators

☐ Disturbed Rain Channels in Upper 12"  
☐ Water Stained Leaves  
☐ Local Soil Shrinky Cracks  
☐ FAC-Natural Tax  
☐ Other (Explain in Remarks)

SOILS

WAD Line Name Drainage Class  
 Series and Phase  
 Taxonomy (Subgroup) Fine Grained, Coastal  
 Mapped Type Yes 10

PROFILE DESCRIPTION

| Depth  | Moisture | Texture | Structure | Color    | Notes          |
|--------|----------|---------|-----------|----------|----------------|
| 0-10   | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 10-20  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 20-30  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 30-40  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 40-50  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 50-60  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 60-70  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 70-80  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 80-90  | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |
| 90-100 | Wet      | Clay    | Structure | 10YR 5/1 | Drainage Class |

HYDROLOGIC Indicators

☐ Mottled  
☐ Gley  
☐ Iron  
☐ Organic  
☐ Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrologic Vegetation Present? YES  
 Wetland Hydrology Present? YES  
 Hydro Soil Present? YES  
 REMARKS



**ATTACHMENT 2**

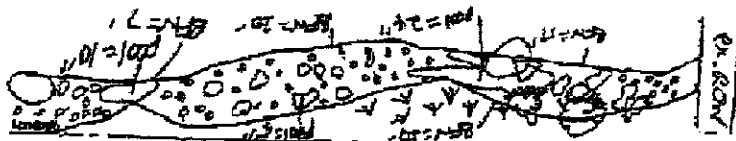
**OHIO EPA QHEI  
DATA SHEETS**



45

[illegible]

— Southern + Northern two-lane road (1970) identified in stream



|   |   |                                     |
|---|---|-------------------------------------|
| 1 | Is there a separate room for the<br>storage of your books?            | <input checked="" type="checkbox"/> |
| 2 | Is there a separate room for the<br>storage of your papers?           | <input checked="" type="checkbox"/> |
| 3 | Is there a separate room for the<br>storage of your clothing?         | <input checked="" type="checkbox"/> |
| 4 | Is there a separate room for the<br>storage of your other belongings? | <input checked="" type="checkbox"/> |
| 5 | Is there a separate room for the<br>storage of your other belongings? | <input checked="" type="checkbox"/> |
| 6 | Is there a separate room for the<br>storage of your other belongings? | <input checked="" type="checkbox"/> |
| 7 | Is there a separate room for the<br>storage of your other belongings? | <input checked="" type="checkbox"/> |

1. The first step in the process of identifying a problem is to define the problem. This involves identifying the symptoms of the problem and determining the scope of the problem. Once the problem has been defined, the next step is to identify the causes of the problem. This involves identifying the factors that are contributing to the problem and determining the underlying causes of the problem. Once the causes of the problem have been identified, the next step is to develop a plan to address the problem. This involves identifying the actions that need to be taken to address the problem and determining the resources that are needed to implement the plan. Once a plan has been developed, the next step is to implement the plan. This involves taking the actions that are outlined in the plan and monitoring the progress of the plan. Finally, the last step in the process is to evaluate the results of the plan. This involves determining whether the plan has been successful in addressing the problem and identifying any lessons learned from the process.

[illegible]

**ATTACHMENT 3**

**OHIO EPA HHEI  
DATA SHEETS**







Att-53

# Chispa

## Primary Headwater Habitat Evaluation Form

HJEL Score (sum of indices 1-5):

15

DATE: 6/1/97

TIME: 10:30

LOCATION: 3000 ft

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

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WATER TYPE: 1

# Chispa

## Primary Headwater Habitat Evaluation Form

HJEL Score (sum of indices 1-5):

15

DATE: 6/1/97

TIME: 10:30

LOCATION: 3000 ft

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

WATER TYPE: 1

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WATER TYPE: 1









44-57

# CHIEFA Primary Headwater Habitat Evaluation Form

HBI Score (sum of values 1-3):

50

DATE: 4-26-97 TIME: 10:00 AM

PROJECT: 44-57

LOCATION: 44-57

WATER: 44-57

WATER TYPE: 44-57

WATER QUALITY: 44-57

WATER QUANTITY: 44-57

WATER TEMPERATURE: 44-57

WATER TURBIDITY: 44-57

WATER pH: 44-57

WATER DO: 44-57

WATER BOD: 44-57

WATER TSS: 44-57

WATER TDS: 44-57

WATER CHLORINE: 44-57

WATER AMMONIA: 44-57

WATER NITRATE: 44-57

WATER NITRITE: 44-57

WATER PHOSPHATE: 44-57

WATER SILICA: 44-57

WATER BORON: 44-57

WATER ZINC: 44-57

WATER CADMIUM: 44-57

WATER COPPER: 44-57

WATER LEAD: 44-57

WATER MANGANESE: 44-57

WATER CHROMIUM: 44-57

WATER NICKEL: 44-57

WATER VANADIUM: 44-57

WATER SELENIUM: 44-57

WATER FLUORIDE: 44-57

WATER IODINE: 44-57

WATER BROMINE: 44-57

WATER CHLORINE: 44-57

WATER AMMONIA: 44-57

WATER NITRATE: 44-57

WATER NITRITE: 44-57

WATER PHOSPHATE: 44-57

WATER SILICA: 44-57

WATER BORON: 44-57

WATER ZINC: 44-57

WATER CADMIUM: 44-57

WATER COPPER: 44-57

WATER LEAD: 44-57

WATER MANGANESE: 44-57

WATER CHROMIUM: 44-57

WATER NICKEL: 44-57

WATER VANADIUM: 44-57

WATER SELENIUM: 44-57

WATER FLUORIDE: 44-57

WATER IODINE: 44-57

WATER BROMINE: 44-57

1. SITE INFORMATION (Name of site, type of site, location, etc.)

2. SITE DESCRIPTION (Physical characteristics, vegetation, etc.)

3. SITE EVALUATION (Habitat quality, etc.)

4. SITE RECOMMENDATIONS (Management actions, etc.)

5. SITE MONITORING (Frequency, etc.)

6. SITE REPORT (Summary, etc.)

7. SITE APPENDICES (Photos, etc.)

8. SITE SIGNATURES (Project manager, etc.)

9. SITE DATE (Date of evaluation, etc.)

10. SITE REVIEW (Reviewer, etc.)

11. SITE APPROVAL (Approver, etc.)

12. SITE DISTRIBUTION (Distribution list, etc.)

13. SITE ARCHIVE (Archiving, etc.)

14. SITE CLOSURE (Closure, etc.)

15. SITE REMEDIATION (Remediation, etc.)

16. SITE RESTORATION (Restoration, etc.)

17. SITE REUSE (Reuse, etc.)

18. SITE REPAIR (Repair, etc.)

19. SITE REPLACEMENT (Replacement, etc.)

20. SITE REMOVAL (Removal, etc.)

21. SITE RELOCATION (Relocation, etc.)

22. SITE RECONSTRUCTION (Reconstruction, etc.)

23. SITE REPAIR/RECONSTRUCTION (Repair/Reconstruction, etc.)

24. SITE REMEDIATION/RECONSTRUCTION (Remediation/Reconstruction, etc.)

25. SITE RESTORATION/RECONSTRUCTION (Restoration/Reconstruction, etc.)

26. SITE REUSE/RECONSTRUCTION (Reuse/Reconstruction, etc.)

27. SITE REPAIR/RECONSTRUCTION (Repair/Reconstruction, etc.)

28. SITE REMEDIATION/RECONSTRUCTION (Remediation/Reconstruction, etc.)

29. SITE RESTORATION/RECONSTRUCTION (Restoration/Reconstruction, etc.)

30. SITE REUSE/RECONSTRUCTION (Reuse/Reconstruction, etc.)

1. SITE INFORMATION (Name of site, type of site, location, etc.)

2. SITE DESCRIPTION (Physical characteristics, vegetation, etc.)

3. SITE EVALUATION (Habitat quality, etc.)

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2. SITE DESCRIPTION (Physical characteristics, vegetation, etc.)

3. SITE EVALUATION (Habitat quality, etc.)

4. SITE RECOMMENDATIONS (Management actions, etc.)

5. SITE MONITORING (Frequency, etc.)

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21. SITE RELOCATION (Relocation, etc.)

22. SITE RECONSTRUCTION (Reconstruction, etc.)

23. SITE REPAIR/RECONSTRUCTION (Repair/Reconstruction, etc.)

24. SITE REMEDIATION/RECONSTRUCTION (Remediation/Reconstruction, etc.)

25. SITE RESTORATION/RECONSTRUCTION (Restoration/Reconstruction, etc.)

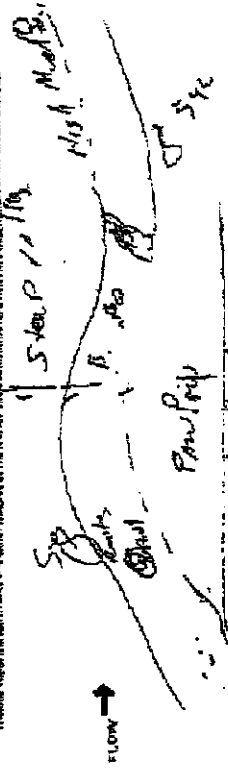
26. SITE REUSE/RECONSTRUCTION (Reuse/Reconstruction, etc.)

27. SITE REPAIR/RECONSTRUCTION (Repair/Reconstruction, etc.)

28. SITE REMEDIATION/RECONSTRUCTION (Remediation/Reconstruction, etc.)

29. SITE RESTORATION/RECONSTRUCTION (Restoration/Reconstruction, etc.)

30. SITE REUSE/RECONSTRUCTION (Reuse/Reconstruction, etc.)









44-511

# OWEPA Primary Headwater Habitat Evaluation Form

OWEPA Score (sum of metrics 1-5): 60

Stream Name: Blind Hollow Date: 8-23-76 Evaluator: W. J. Smith

Stream Order: 1st Stream Type: Headwater Stream Length: 0.5 miles

Stream Channel: ☒ Meandering ☐ Straight ☐ Barbed

Stream Bank: ☐ Natural ☐ Artificial

Stream Bed: ☐ Natural ☐ Artificial

Stream Flow: ☐ Natural ☐ Artificial

Stream Temperature: ☐ Natural ☐ Artificial

Stream Velocity: ☐ Natural ☐ Artificial

Stream Width: ☐ Natural ☐ Artificial

Stream Depth: ☐ Natural ☐ Artificial

Stream Volume: ☐ Natural ☐ Artificial

Stream Discharge: ☐ Natural ☐ Artificial

Stream Sediment: ☐ Natural ☐ Artificial

Stream Nutrients: ☐ Natural ☐ Artificial

Stream Pesticides: ☐ Natural ☐ Artificial

Stream Herbicides: ☐ Natural ☐ Artificial

Stream Fertilizers: ☐ Natural ☐ Artificial

Stream Other: ☐ Natural ☐ Artificial

1. HABITAT (Sum of metrics 1-5): 60

Stream Order: 1st Stream Type: Headwater Stream Length: 0.5 miles

Stream Channel: ☒ Meandering ☐ Straight ☐ Barbed

Stream Bank: ☐ Natural ☐ Artificial

Stream Bed: ☐ Natural ☐ Artificial

Stream Flow: ☐ Natural ☐ Artificial

Stream Temperature: ☐ Natural ☐ Artificial

Stream Velocity: ☐ Natural ☐ Artificial

Stream Width: ☐ Natural ☐ Artificial

Stream Depth: ☐ Natural ☐ Artificial

Stream Volume: ☐ Natural ☐ Artificial

Stream Discharge: ☐ Natural ☐ Artificial

Stream Sediment: ☐ Natural ☐ Artificial

Stream Nutrients: ☐ Natural ☐ Artificial

Stream Pesticides: ☐ Natural ☐ Artificial

Stream Herbicides: ☐ Natural ☐ Artificial

Stream Fertilizers: ☐ Natural ☐ Artificial

Stream Other: ☐ Natural ☐ Artificial

2. STREAM CHANNEL (Sum of metrics 1-5): 15

Stream Order: 1st Stream Type: Headwater Stream Length: 0.5 miles

Stream Channel: ☒ Meandering ☐ Straight ☐ Barbed

Stream Bank: ☐ Natural ☐ Artificial

Stream Bed: ☐ Natural ☐ Artificial

Stream Flow: ☐ Natural ☐ Artificial

Stream Temperature: ☐ Natural ☐ Artificial

Stream Velocity: ☐ Natural ☐ Artificial

Stream Width: ☐ Natural ☐ Artificial

Stream Depth: ☐ Natural ☐ Artificial

Stream Volume: ☐ Natural ☐ Artificial

Stream Discharge: ☐ Natural ☐ Artificial

Stream Sediment: ☐ Natural ☐ Artificial

Stream Nutrients: ☐ Natural ☐ Artificial

Stream Pesticides: ☐ Natural ☐ Artificial

Stream Herbicides: ☐ Natural ☐ Artificial

Stream Fertilizers: ☐ Natural ☐ Artificial

Stream Other: ☐ Natural ☐ Artificial

3. STREAM BANK (Sum of metrics 1-5): 10

Stream Order: 1st Stream Type: Headwater Stream Length: 0.5 miles

Stream Channel: ☒ Meandering ☐ Straight ☐ Barbed

Stream Bank: ☐ Natural ☐ Artificial

Stream Bed: ☐ Natural ☐ Artificial

Stream Flow: ☐ Natural ☐ Artificial

Stream Temperature: ☐ Natural ☐ Artificial

Stream Velocity: ☐ Natural ☐ Artificial

Stream Width: ☐ Natural ☐ Artificial

Stream Depth: ☐ Natural ☐ Artificial

Stream Volume: ☐ Natural ☐ Artificial

Stream Discharge: ☐ Natural ☐ Artificial

Stream Sediment: ☐ Natural ☐ Artificial

Stream Nutrients: ☐ Natural ☐ Artificial

Stream Pesticides: ☐ Natural ☐ Artificial

Stream Herbicides: ☐ Natural ☐ Artificial

Stream Fertilizers: ☐ Natural ☐ Artificial

Stream Other: ☐ Natural ☐ Artificial

4. STREAM BED (Sum of metrics 1-5): 10

Stream Order: 1st Stream Type: Headwater Stream Length: 0.5 miles

Stream Channel: ☒ Meandering ☐ Straight ☐ Barbed

Stream Bank: ☐ Natural ☐ Artificial

Stream Bed: ☐ Natural ☐ Artificial

Stream Flow: ☐ Natural ☐ Artificial

Stream Temperature: ☐ Natural ☐ Artificial

Stream Velocity: ☐ Natural ☐ Artificial

Stream Width: ☐ Natural ☐ Artificial

Stream Depth: ☐ Natural ☐ Artificial

Stream Volume: ☐ Natural ☐ Artificial

Stream Discharge: ☐ Natural ☐ Artificial

Stream Sediment: ☐ Natural ☐ Artificial

Stream Nutrients: ☐ Natural ☐ Artificial

Stream Pesticides: ☐ Natural ☐ Artificial

Stream Herbicides: ☐ Natural ☐ Artificial

Stream Fertilizers: ☐ Natural ☐ Artificial

Stream Other: ☐ Natural ☐ Artificial

5. STREAM FLOW (Sum of metrics 1-5): 10

Stream Order: 1st Stream Type: Headwater Stream Length: 0.5 miles

Stream Channel: ☒ Meandering ☐ Straight ☐ Barbed

Stream Bank: ☐ Natural ☐ Artificial

Stream Bed: ☐ Natural ☐ Artificial

Stream Flow: ☐ Natural ☐ Artificial

Stream Temperature: ☐ Natural ☐ Artificial

Stream Velocity: ☐ Natural ☐ Artificial

Stream Width: ☐ Natural ☐ Artificial

Stream Depth: ☐ Natural ☐ Artificial

Stream Volume: ☐ Natural ☐ Artificial

Stream Discharge: ☐ Natural ☐ Artificial

Stream Sediment: ☐ Natural ☐ Artificial

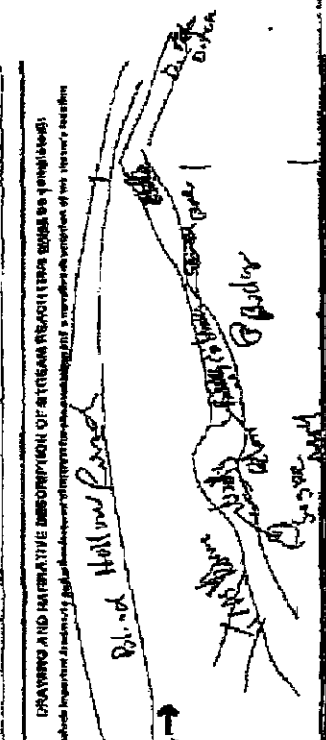
Stream Nutrients: ☐ Natural ☐ Artificial

Stream Pesticides: ☐ Natural ☐ Artificial

Stream Herbicides: ☐ Natural ☐ Artificial

Stream Fertilizers: ☐ Natural ☐ Artificial

Stream Other: ☐ Natural ☐ Artificial



6. STREAM VELOCITY (Sum of metrics 1-5): 10

Stream Order: 1st Stream Type: Headwater Stream Length: 0.5 miles

Stream Channel: ☒ Meandering ☐ Straight ☐ Barbed

Stream Bank: ☐ Natural ☐ Artificial

Stream Bed: ☐ Natural ☐ Artificial

Stream Flow: ☐ Natural ☐ Artificial

Stream Temperature: ☐ Natural ☐ Artificial

Stream Velocity: ☐ Natural ☐ Artificial

Stream Width: ☐ Natural ☐ Artificial

Stream Depth: ☐ Natural ☐ Artificial

Stream Volume: ☐ Natural ☐ Artificial

Stream Discharge: ☐ Natural ☐ Artificial

Stream Sediment: ☐ Natural ☐ Artificial

Stream Nutrients: ☐ Natural ☐ Artificial

Stream Pesticides: ☐ Natural ☐ Artificial

Stream Herbicides: ☐ Natural ☐ Artificial

Stream Fertilizers: ☐ Natural ☐ Artificial

Stream Other: ☐ Natural ☐ Artificial













45

44-517

[illegible][illegible]

Page 23 of 23

**NAME: \_\_\_\_\_**

1. IDENTITY, ADDRESS AND INFORMATION OF THE PERSONS WHOSE NAMES ARE BEING REPORTED  
 NAME: ALBERT E. BROWN DOB: 10/10/1910 ADDRESS: 1010 1st St. N.E. Washington, D.C.  
 2. REASON FOR REPORTING  
 I am reporting this person because he is a known communist and spy.  
 3. DETAILS OF INFORMATION  
 I have information that ALBERT E. BROWN is a known communist and spy who has been active in the Washington, D.C. area for many years. He is currently residing at 1010 1st St. N.E. Washington, D.C.  
 4. DATE OF INFORMATION  
 I am reporting this information on 10/10/1950.  
 5. SIGNATURE OF REPORTER  
 I, John Doe, of 123 Main St. N.E. Washington, D.C.  
 6. DATE OF SIGNATURE  
 I signed this report on 10/10/1950.  
 7. OFFICIAL USE ONLY  
 RECEIVED BY: Mr. Smith DATE: 10/10/1950  
 COMMENTS: See file 101-101010  
 8. ADMINISTRATIVE USE ONLY  
 FILED IN: 101-101010 BY: Mr. Smith DATE: 10/10/1950  
 9. OTHER INFORMATION  
None

S 37

Class 3

# CHIEFA Primary Headwater Habitat Evaluation Form

**HHEI Score (sum of sections 1, 2, 3):** 18

**SECTION 1: SITE CHARACTERISTICS**

WATER NAME:                      LONG:                      ELEVATION ABOVE SEA LEVEL:                     

WATER CODE:                     

DATE OF SURVEY:                      LAT:                      COMMENTS:                     

NOTE: COMPARE AT THIS ON THE FORM - Refer to "FIELD EVALUATION GUIDE" for instructions

**SECTION 2: STREAM CHANNEL CHARACTERISTICS**

WATER TYPE:                      CHANNEL TYPE:                      CHANNEL WIDTH (m):                     

CHANNEL DEPTH (m):                      CHANNEL VELOCITY (m/s):                     

CHANNEL BED TYPE:                      CHANNEL BANK TYPE:                     

CHANNEL OBSTRUCTION:                     

**SECTION 3: VEGETATION**

VEGETATION TYPE:                      VEGETATION DENSITY:                     

VEGETATION HEIGHT (m):                      VEGETATION COVERAGE (%):                     

**SECTION 4: HABITAT QUALITY**

HABITAT QUALITY SCORE:                     

HABITAT QUALITY COMMENTS:                     

**SECTION 5: SUMMARY**

TOTAL HHEI SCORE:                     

HABITAT QUALITY:                     

VEGETATION:                     

CHANNEL:                     

**SECTION 6: COMMENTS**

COMMENTS:                     

**SECTION 7: SIGNATURES**

DATE:                      BY:                     

**SECTION 8: APPENDIX**

APPENDIX:                     

**SECTION 9: REFERENCES**

REFERENCES:                     

**SECTION 10: NOTES**

NOTES:                     

# CHIEFA Primary Headwater Habitat Evaluation Form

**HHEI Score (sum of sections 1, 2, 3):**                     

**SECTION 1: SITE CHARACTERISTICS**

WATER NAME:                      LONG:                      ELEVATION ABOVE SEA LEVEL:                     

WATER CODE:                     

DATE OF SURVEY:                      LAT:                      COMMENTS:                     

**SECTION 2: STREAM CHANNEL CHARACTERISTICS**

WATER TYPE:                      CHANNEL TYPE:                      CHANNEL WIDTH (m):                     

CHANNEL DEPTH (m):                      CHANNEL VELOCITY (m/s):                     

CHANNEL BED TYPE:                      CHANNEL BANK TYPE:                     

CHANNEL OBSTRUCTION:                     

**SECTION 3: VEGETATION**

VEGETATION TYPE:                      VEGETATION DENSITY:                     

VEGETATION HEIGHT (m):                      VEGETATION COVERAGE (%):                     

**SECTION 4: HABITAT QUALITY**

HABITAT QUALITY SCORE:                     

HABITAT QUALITY COMMENTS:                     

**SECTION 5: SUMMARY**

TOTAL HHEI SCORE:                     

HABITAT QUALITY:                     

VEGETATION:                     

CHANNEL:                     

**SECTION 6: COMMENTS**

COMMENTS:                     

**SECTION 7: SIGNATURES**

DATE:                      BY:                     

**SECTION 8: APPENDIX**

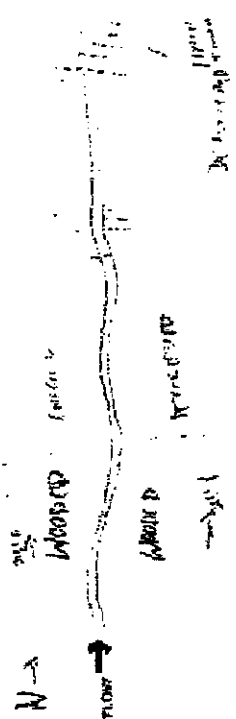
APPENDIX:                     

**SECTION 9: REFERENCES**

REFERENCES:                     

**SECTION 10: NOTES**

NOTES:                     



538

Class 1

# CHMERA Primary Headwater Habitat Evaluation Form

HNEI Score (sum of entries 1,2,3): **23**

DATE: 11/10/03 TIME: 10:00 COMMENTS: Good  
LOCATION: 1000 ft. upstream from bridge REPER: 1000  
SITE: 1000 ft. upstream from bridge DATE: 11/10/03 TIME: 10:00 COMMENTS: Good  
NOTE: Complete this form on the form. Refer to "Field Evaluation Manual for ChmERA Stream" for instructions.  
STREAM CHANNEL: 1000 ft. upstream from bridge ☐ DISCONTINUED ☐ DISCONTINUED ☐ DISCONTINUED ☐ DISCONTINUED  
MODIFICATIONS:

1. SUBSTRATE (check in percent) at every type of substrate present. Check ONLY two predominant substrate types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Substrate          | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

2. RESISTANCE TO FLOOD (check in percent) at every type of resistance present. Check ONLY two predominant resistance types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Resistance         | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

3. CHANNEL FILL (check in percent) at every type of channel fill present. Check ONLY two predominant channel fill types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Channel Fill       | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

4. CHANNEL FILL (check in percent) at every type of channel fill present. Check ONLY two predominant channel fill types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Channel Fill       | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

5. CHANNEL FILL (check in percent) at every type of channel fill present. Check ONLY two predominant channel fill types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Channel Fill       | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

6. CHANNEL FILL (check in percent) at every type of channel fill present. Check ONLY two predominant channel fill types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Channel Fill       | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

7. CHANNEL FILL (check in percent) at every type of channel fill present. Check ONLY two predominant channel fill types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Channel Fill       | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

8. CHANNEL FILL (check in percent) at every type of channel fill present. Check ONLY two predominant channel fill types (sum of 1,2). Add and subtract to 100% (sum of 1,2). Total score range is sum of forms A & B.

| Channel Fill       | Percent                  |
|--------------------|--------------------------|
| BLANK (100%)       | <input type="checkbox"/> |
| GRAVEL (100%)      | <input type="checkbox"/> |
| COARSE SAND (100%) | <input type="checkbox"/> |
| FINE SAND (100%)   | <input type="checkbox"/> |
| CLAY (100%)        | <input type="checkbox"/> |
| ROCK (100%)        | <input type="checkbox"/> |
| WOOD (100%)        | <input type="checkbox"/> |
| LEAF LITTER (100%) | <input type="checkbox"/> |
| OTHER (100%)       | <input type="checkbox"/> |

# CH2M HILL

## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1-5): **44**

DATE: **July 20, 2010** TIME: **10:00 AM** LOCATION: **Washburn Creek**

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

# CH2M HILL

## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1-5): **44**

DATE: **July 20, 2010** TIME: **10:00 AM** LOCATION: **Washburn Creek**

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

WATER QUALITY: **Good** (10) SEDIMENT: **Low** (5) VEGETATION: **Good** (10) ANIMALS: **Good** (10) CHANNEL: **Good** (10)

# Chispa Primary Roadwater Habitat Evaluation Form

28

IRRI Score (sum of items 1, 2, 3)

DATE: 2 July 2006  
 TIME: 10:00 AM  
 LOCATION: Chispa Primary Roadwater  
 PROJECT: Chispa Primary Roadwater  
 STREAM CHANNEL: 100' wide, 10' deep  
 VEGETATION: 100% grass, 10% shrubs, 10% trees

1. **WATER QUALITY**  
 Temperature: 18°C  
 pH: 7.5  
 Dissolved Oxygen: 8.5 mg/L  
 Conductivity: 150 µS/cm  
 Turbidity: 1 NTU  
 Total Solids: 100 mg/L  
 Total Phosphorus: 0.1 mg/L  
 Total Nitrogen: 0.5 mg/L  
 Ammonia: 0.1 mg/L  
 Nitrate: 1.0 mg/L  
 Nitrite: 0.1 mg/L  
 Chlorophyll a: 1.0 µg/L  
 Chlorophyll b: 0.5 µg/L  
 Chlorophyll c: 0.1 µg/L  
 Chlorophyll total: 1.6 µg/L

2. **WATER QUANTITY**  
 Flow: 100 L/s  
 Velocity: 1.0 m/s  
 Depth: 1.0 m  
 Width: 100 m  
 Area: 10,000 m²  
 Volume: 10,000 m³

3. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

4. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

5. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

6. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

7. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

8. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

9. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

10. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

ADDITIONAL SITE INFORMATION (For Preliminary Map Only, No Scale)  
 DATE: 2 July 2006  
 TIME: 10:00 AM  
 LOCATION: Chispa Primary Roadwater  
 PROJECT: Chispa Primary Roadwater  
 STREAM CHANNEL: 100' wide, 10' deep  
 VEGETATION: 100% grass, 10% shrubs, 10% trees

1. **WATER QUALITY**  
 Temperature: 18°C  
 pH: 7.5  
 Dissolved Oxygen: 8.5 mg/L  
 Conductivity: 150 µS/cm  
 Turbidity: 1 NTU  
 Total Solids: 100 mg/L  
 Total Phosphorus: 0.1 mg/L  
 Total Nitrogen: 0.5 mg/L  
 Ammonia: 0.1 mg/L  
 Nitrate: 1.0 mg/L  
 Nitrite: 0.1 mg/L  
 Chlorophyll a: 1.0 µg/L  
 Chlorophyll b: 0.5 µg/L  
 Chlorophyll c: 0.1 µg/L  
 Chlorophyll total: 1.6 µg/L

2. **WATER QUANTITY**  
 Flow: 100 L/s  
 Velocity: 1.0 m/s  
 Depth: 1.0 m  
 Width: 100 m  
 Area: 10,000 m²  
 Volume: 10,000 m³

3. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

4. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

5. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

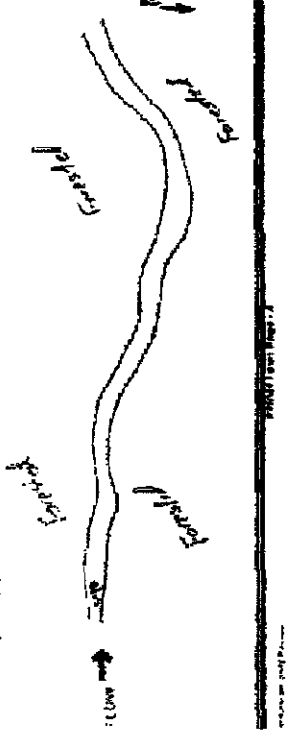
6. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

7. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

8. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

9. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100

10. **WATER QUALITY INDEX**  
 WQI: 100  
 WQI Score: 100





# Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3)

21

DATE: 7/1/88 BY: M. Thompson

WATER BODY: Mingo River

NOTE: Complete this form on the form. Refer to Field Notes for details on Ohio's Primary Streams. For more information, contact the Ohio Department of Natural Resources, Division of Water, 1000 East Broad Street, Columbus, OH 43260.

STREAM QUALITY: ☒ Excellent ☐ Fair ☐ Poor

WATER QUALITY: ☒ Excellent ☐ Fair ☐ Poor

WATER TEMPERATURE: ☒ Excellent ☐ Fair ☐ Poor

WATER CLARITY: ☒ Excellent ☐ Fair ☐ Poor

WATER VELOCITY: ☒ Excellent ☐ Fair ☐ Poor

WATER DEPTH: ☒ Excellent ☐ Fair ☐ Poor

WATER WIDTH: ☒ Excellent ☐ Fair ☐ Poor

WATER AREA: ☒ Excellent ☐ Fair ☐ Poor

WATER VOLUME: ☒ Excellent ☐ Fair ☐ Poor

WATER FLOW: ☒ Excellent ☐ Fair ☐ Poor

WATER PRESSURE: ☒ Excellent ☐ Fair ☐ Poor

WATER TEMPERATURE: ☒ Excellent ☐ Fair ☐ Poor

WATER CLARITY: ☒ Excellent ☐ Fair ☐ Poor

WATER VELOCITY: ☒ Excellent ☐ Fair ☐ Poor

WATER DEPTH: ☒ Excellent ☐ Fair ☐ Poor

WATER WIDTH: ☒ Excellent ☐ Fair ☐ Poor

WATER AREA: ☒ Excellent ☐ Fair ☐ Poor

WATER VOLUME: ☒ Excellent ☐ Fair ☐ Poor

WATER FLOW: ☒ Excellent ☐ Fair ☐ Poor

WATER PRESSURE: ☒ Excellent ☐ Fair ☐ Poor

WATER TEMPERATURE: ☒ Excellent ☐ Fair ☐ Poor

WATER CLARITY: ☒ Excellent ☐ Fair ☐ Poor

WATER VELOCITY: ☒ Excellent ☐ Fair ☐ Poor

WATER DEPTH: ☒ Excellent ☐ Fair ☐ Poor

WATER WIDTH: ☒ Excellent ☐ Fair ☐ Poor

WATER AREA: ☒ Excellent ☐ Fair ☐ Poor

WATER VOLUME: ☒ Excellent ☐ Fair ☐ Poor

WATER FLOW: ☒ Excellent ☐ Fair ☐ Poor

WATER PRESSURE: ☒ Excellent ☐ Fair ☐ Poor

WATER TEMPERATURE: ☒ Excellent ☐ Fair ☐ Poor

WATER CLARITY: ☒ Excellent ☐ Fair ☐ Poor

WATER VELOCITY: ☒ Excellent ☐ Fair ☐ Poor

WATER DEPTH: ☒ Excellent ☐ Fair ☐ Poor

WATER WIDTH: ☒ Excellent ☐ Fair ☐ Poor

WATER AREA: ☒ Excellent ☐ Fair ☐ Poor

WATER VOLUME: ☒ Excellent ☐ Fair ☐ Poor

PROJECT LOCATION: Wingo River

PROJECT NUMBER: 5

PROJECT DATE: 7/1/88

PROJECT DESCRIPTION: Primary Headwater Habitat Evaluation

PROJECT STATUS: Completed

PROJECT CONTACT: M. Thompson

PROJECT ADDRESS: 1000 East Broad Street, Columbus, OH 43260

PROJECT PHONE: (614) 265-1234

PROJECT FAX: (614) 265-1234

PROJECT E-MAIL: mthompson@epa.gov

PROJECT WEBSITE: http://www.epa.gov

PROJECT URL: http://www.epa.gov

PROJECT IP: 192.168.1.1

PROJECT MAC: 08:00:2B:01:02:03

PROJECT DNS: epa.gov

PROJECT WHOIS: epa.gov

PROJECT NS: epa.gov

PROJECT MX: epa.gov

PROJECT TXT: epa.gov

PROJECT SPF: epa.gov

PROJECT DKIM: epa.gov

PROJECT DMARC: epa.gov

PROJECT Uptime: 99.99%

PROJECT Latency: 10ms

PROJECT Bandwidth: 100Mbps

PROJECT Throughput: 100Mbps

PROJECT Packet Loss: 0%

PROJECT Jitter: 0ms

PROJECT RTT: 10ms

PROJECT TTF: 10ms

PROJECT MTTF: 10ms

PROJECT MTTD: 10ms

PROJECT MTTR: 10ms

PROJECT MTD: 10ms

PROJECT MTT: 10ms

PROJECT MTTT: 10ms

PROJECT MTTT: 10ms

PROJECT MTTT: 10ms

PROJECT MTTT: 10ms

PROJECT MTTT: 10ms







# CHMERA Primary Headwater Habitat Evaluation Form

WHEB Score (sum of metrics 1-2, 4):

19

DATE: 1 July 2008

TIME: 08:00

LOCATION: 100m upstream of bridge

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

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WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

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19

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19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

WHEB Score (sum of metrics 1-2, 4):

19

ADDITIONAL STREAM INFORMATION (For information about this site):

Stream Name: CHMERA

Stream Order: 1st

Stream Type: Headwater

Stream Length: 100m

Stream Width: 1m

Stream Depth: 0.1m

Stream Velocity: 0.1m/s

Stream Temperature: 25°C

Stream pH: 7.0

Stream Conductivity: 100 µS/cm

Stream Turbidity: 10 NTU

Stream Dissolved Oxygen: 8.0 mg/L

Stream Total Nitrogen: 0.1 mg/L

Stream Total Phosphorus: 0.01 mg/L

Stream Nitrate: 0.1 mg/L

Stream Ammonia: 0.01 mg/L

Stream Nitrite: 0.01 mg/L

Stream Sulfate: 0.1 mg/L

Stream Chloride: 0.1 mg/L

Stream Calcium: 0.1 mg/L

Stream Magnesium: 0.1 mg/L

Stream Potassium: 0.1 mg/L

Stream Sodium: 0.1 mg/L

Stream Zinc: 0.1 mg/L

Stream Copper: 0.1 mg/L

Stream Lead: 0.1 mg/L

Stream Cadmium: 0.1 mg/L

Stream Silver: 0.1 mg/L

Stream Barium: 0.1 mg/L

Stream Strontium: 0.1 mg/L

Stream Manganese: 0.1 mg/L

Stream Iron: 0.1 mg/L

Stream Cobalt: 0.1 mg/L

Stream Nickel: 0.1 mg/L

Stream Boron: 0.1 mg/L

Stream Fluoride: 0.1 mg/L

Stream Iodine: 0.1 mg/L

Stream Selenium: 0.1 mg/L

Stream Tellurium: 0.1 mg/L

Stream Vanadium: 0.1 mg/L

Stream Chromium: 0.1 mg/L

Stream Molybdenum: 0.1 mg/L

Stream Antimony: 0.1 mg/L

Stream Arsenic: 0.1 mg/L

Stream Bismuth: 0.1 mg/L

Stream Cadmium: 0.1 mg/L

Stream Cobalt: 0.1 mg/L

Stream Copper: 0.1 mg/L

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Stream Zinc: 0.1 mg/L

ADDITIONAL STREAM INFORMATION (For information about this site):

Stream Name: CHMERA

Stream Order: 1st

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Stream Length: 100m

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Stream Depth: 0.1m

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Stream Sulfate: 0.1 mg/L

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Stream Magnesium: 0.1 mg/L

Stream Potassium: 0.1 mg/L

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Stream Zinc: 0.1 mg/L

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Stream Cadmium: 0.1 mg/L

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Stream Silver: 0.1 mg/L

Stream Zinc: 0.1 mg/L

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Stream Turbidity: 10 NTU

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Stream Total Nitrogen: 0.1 mg/L

Stream Total Phosphorus: 0.01 mg/L

Stream Nitrate: 0.1 mg/L

Stream Ammonia: 0.01 mg/L

Stream Nitrite: 0.01 mg/L

Stream Sulfate: 0.1 mg/L

Stream Chloride: 0.1 mg/L

Stream Calcium: 0.1 mg/L

Stream Magnesium: 0.1 mg/L

Stream Potassium: 0.1 mg/L

Stream Sodium: 0.1 mg/L

Stream Zinc: 0.1 mg/L

Stream Copper: 0.1 mg/L

Stream Lead: 0.1 mg/L

Stream Cadmium: 0.1 mg/L

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Stream Barium: 0.1 mg/L

Stream Strontium: 0.1 mg/L

Stream Manganese: 0.1 mg/L

Stream Iron: 0.1 mg/L

Stream Cobalt: 0.1 mg/L

Stream Nickel: 0.1 mg/L

Stream Boron: 0.1 mg/L

Stream Fluoride: 0.1 mg/L

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Stream Sodium: 0.1 mg/L

Stream Zinc: 0.1 mg/L

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Stream Barium: 0.1 mg/L

Stream Strontium: 0.1 mg/L

Stream Manganese: 0.1 mg/L

Stream Iron: 0.1 mg/L

Stream Cobalt: 0.1 mg/L

Stream Nickel: 0.1 mg/L

Stream Boron: 0.1 mg/L

Stream Fluoride: 0.1 mg/L

**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream S33



Stream All-S1



# URS

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

|  |                                      |                         |
|--|--------------------------------------|-------------------------|
| Client Name:<br>American Municipal Power-Ohio (AMP-OH) | Site Location:<br>Meigs County, Ohio | Project No.<br>14946576 |
|--|--------------------------------------|-------------------------|

Stream Alt-S2



Stream Alt-S3

NO PICTURE

**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream Alt-S4



Stream Alt-S5





**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

|  |                                      |                         |
|--|--------------------------------------|-------------------------|
| Client Name:<br>American Municipal Power-Ohio (AMP-OH) | Site Location:<br>Meigs County, Ohio | Project No.<br>14946376 |
|--|--------------------------------------|-------------------------|

Stream Alt-S6



Stream Alt-S7



**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream A1-S8



Stream A1-S9



**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

|  |                    |             |
|--|--------------------|-------------|
| Client Name:                           | Site Location:     | Project No. |
| American Municipal Power-Ohio (AMP-OH) | Meigs County, Ohio | 14946376    |

Stream Ah-S16



Stream Ah-S11



**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream Alt-S12



Stream Alt-S13



**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream Alt-S14



Stream Alt-S15



**URS****PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-Ohio)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream Alt-S16



Stream AK-S17

NO PICTURE

**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream S31



Stream S37



**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream S38



Stream S39



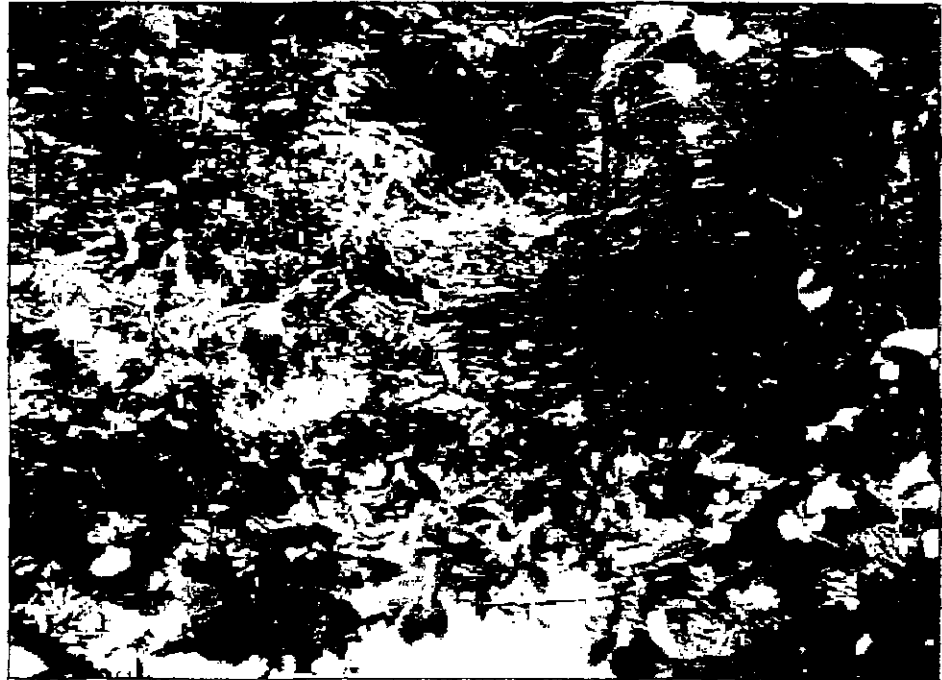


**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

|  |                                      |                         |
|--|--------------------------------------|-------------------------|
| Client Name:<br>American Municipal Power-Ohio (AMP-Oh) | Site Location:<br>Meigs County, Ohio | Project No.<br>14946376 |
|--|--------------------------------------|-------------------------|

Stream S40



Stream S41



**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

|  |                                      |                         |
|--|--------------------------------------|-------------------------|
| Client Name:<br>American Municipal Power-Ohio (AMP-OH) | Site Location:<br>Meigs County, Ohio | Project No.<br>14046376 |
|--|--------------------------------------|-------------------------|

Stream S42



Stream S43



**URS**

**PHOTOGRAPHIC RECORD**  
**AMP-Ohio 345 kV Alternate Transmission**  
**Line Streams**

Client Name:

American Municipal Power-Ohio (AMP-OH)

Site Location:

Meigs County, Ohio

Project No.

14946376

Stream S44



Stream S45



**FILE** CHESTER WILLCOX & SAXBE LLP  
*Attorneys and Counselors at Law*

87

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117  
nrosz@cwslaw.com

September 25, 2008

***Via Hand Delivery***

Renee Jenkins  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street - 13<sup>th</sup> Floor  
Columbus, Ohio 43215

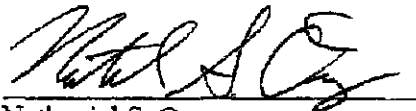
RECEIVED-DOCKETING DIV  
2008 SEP 25 PM 2:49  
PUCO

**RE: OPSB Case No. 06-1357-EL-BTX**

Dear Ms. Jenkins:

Please docket the enclosed materials, which were submitted to the Ohio Power Siting Board Staff on September 25, 2008 with regard to the accepted, complete application in OPSB Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities.

Respectfully,



Nathaniel S. Orosz  
Counsel for American Municipal Power-Ohio, Inc.

cc: Judge Gregory Price - 12<sup>th</sup> Floor

September 25, 2008

*Via Hand Delivery*

Klaus Lambeck  
Chief  
Facilities, Siting & Environmental Analysis Division  
Ohio Power Siting Board  
180 East Broad Street  
Columbus, Ohio 43215



**RE: OPSB Case No. 06-1357-EL-BTX**

Dear Klaus:

I am writing on behalf of American Municipal Power-Ohio, Inc. ("AMP-Ohio") in regards to AMP-Ohio's pending application before the Ohio Power Siting Board in OPSB Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities ("Application").

Since submittal of the Application, AMP-Ohio has submitted a number of clarifications regarding the AMPGS proposed preferred and alternate route for the transmission line. AMP-Ohio's August 18, 2008 letter and submittal included transmission line profile drawings, conceptual access plans, and estimates on the total areas of vegetation clearing for the preferred and alternate options. On August 19th and 20th, Ohio Power Siting and Ohio EPA staff representatives participated in a field walk down of the preferred transmission route.

By this letter, AMP-Ohio submits the attached updated clarification drawings, reports and information.

I am also providing documentation of a small modification of the proposed transmission route.

As set forth in O.A.C. 4906-5-10(A)(5), this modification is not an amendment to the accepted, complete Application because it is within 2,000 feet of the study corridor, will not impact any additional landowners, and will not create further impacts within the planned right-of-way of the proposed facility.

OHIO: AMHERST • ARCADIA • ARCANUM • BEACH CITY • BLANCHESTER • BLOOMDALE • BOWLING GREEN • BRADNER • BREWSTER • BRYAN • CAREY • CELINA • CLEVELAND • CLYDE  
COLUMBIANA • COLUMBUS • CUSTAR • CUYAHOGA FALLS • CYGNET • DESHLER • DOVER • EDGERION • ELDORADO • ELMORE • GALLON • GENOA • GLOUCESTER • GRAFTON • GREENWICH  
HAMILTON • HASKINS • HOLIDAY CITY • HUBBARD • HUDSON • HURON • JACKSON • JACKSON CENTER • LAKEVIEW • LEBANON • LODI • LUCAS • MARSHALLVILLE • MENDON • MILAN • MINSTER  
MONROEVILLE • MONTEPELIER • NAPOLEON • NEW BREMEN • NEW KNOXVILLE • NEWTON FALLS • NILES • OAK HARBOR • OBERLIN • OHIO CITY • ORVILLE • PAINESVILLE • PEMBERTON  
PIONEER • PIQUA • PLYMOUTH • PROSPECT • REPUBLIC • ST. CLAIRSVILLE • ST. MARYS • SEVILLE • SHELBY • SHELTON • SOUTH VIENNA • SYCAMORE • TIPP CITY • VERSAILLES • WADSWORTH  
WAPAKONETA • WAYNESFIELD • WELLINGTON • WESTERVILLE • WHARTON • WOODSFIELD • WOODVILLE • YELLOW SPRINGS  
PENNSYLVANIA: BERLIN • BLAKELY • CATAWISSA • DUNCANNON • EAST CONEMAUGH • ELWOOD CITY • EPHRAATA • GIRARD • GROVE CITY • HATFIELD • HOOVERVILLE • KUTZTOWN • LANSDALE  
LEHIGHION • LEWISBERRY • MIDDLETOWN • MIFFLINBURG • NEW WILMINGTON • OLYPHANT • QUAKERTOWN • ROYALTON • ST. CLAIR • SCHUYLKILL HAVEN • SMETHPORT  
SUMMIT • WATSONTOWN • WEATHERLY  
MICHIGAN: CLINTON • COLDWATER • DOWAGIAC • HILSDALE • MARSHALL • UNION CITY • WYANDOTTE  
VIRGINIA: BEDFORD • DANVILLE • FRONT ROYAL • MARTINSVILLE • RICHLANDS  
WEST VIRGINIA: NEW MARTINSVILLE • PHILIPPI  
KENTUCKY: WILLIAMSTOWN

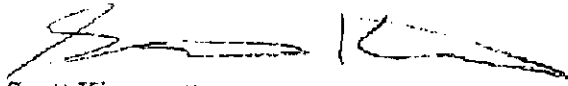


September 25, 2008

Page 2

Please do not hesitate to contact me if you have any questions.

On Behalf of the Members,

A handwritten signature in black ink, appearing to read 'Scott Kiesewetter', with a long horizontal stroke extending to the right.

Scott Kiesewetter

Manager of New Plant Engineering

American Municipal Power-Ohio, Inc.

Attachments

cc: James O'Dell, OPSB Staff  
Jolene Thompson, AMP-Ohio  
Randy Meyer, AMP-Ohio  
John Bentine, CWS

Listing of Attachments:

Attachment A – General Alignment Plan Primary (Preferred) Transmission Route dated September 19, 2008

Attachment B – Preferred Route Preliminary Access Plan dated September 22, 2008

Attachment C – Clearing Plan for Transmission Lines dated September 24, 2008

Attachment D – Preferred Route Wetland Delineation and Stream Assessment Report dated September 23, 2008

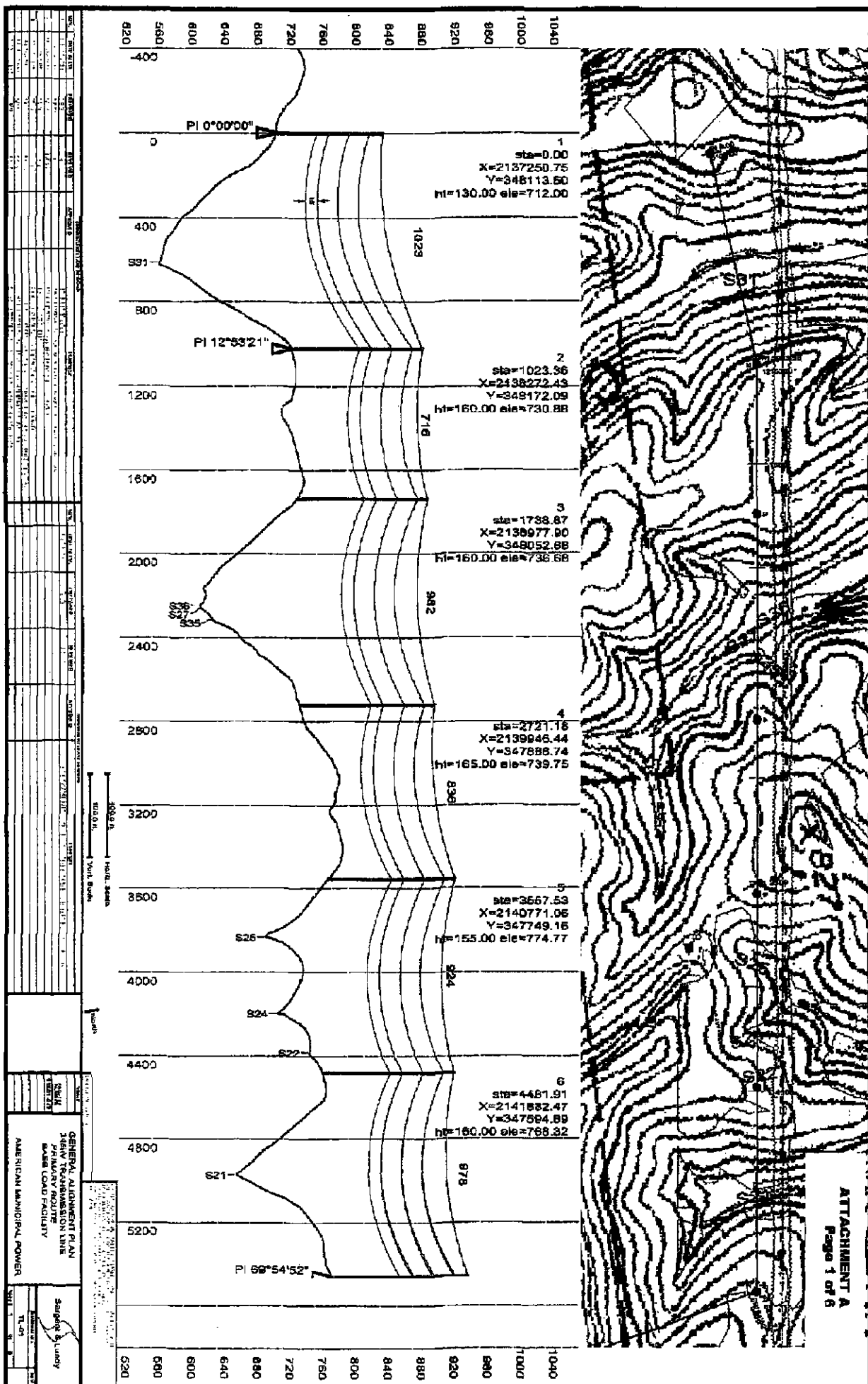
Attachment E – Photographic Record Preferred Transmission Route

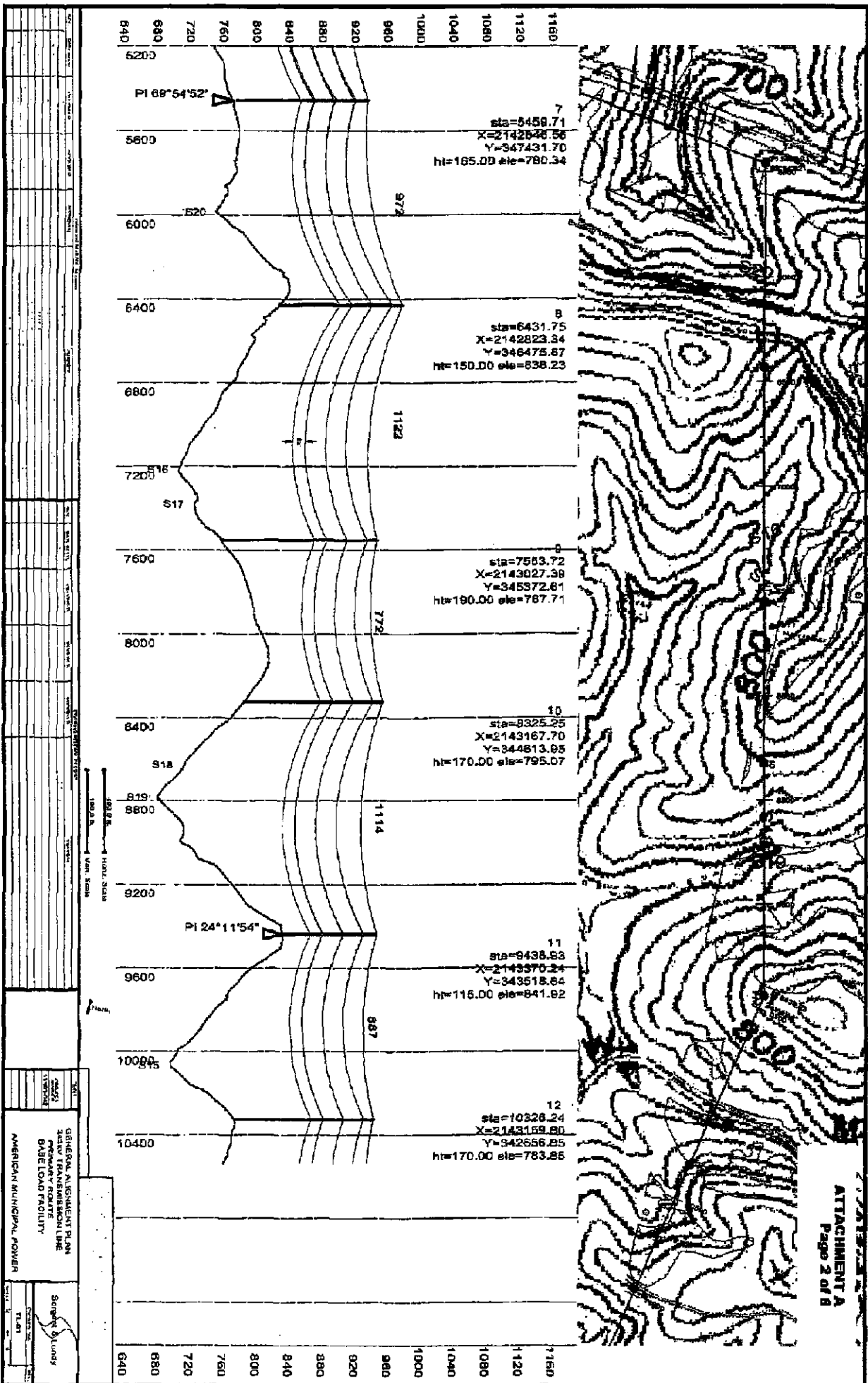
Attachment F – Transmission Line Preferred and Alternate Routes Extension to Plant Substation

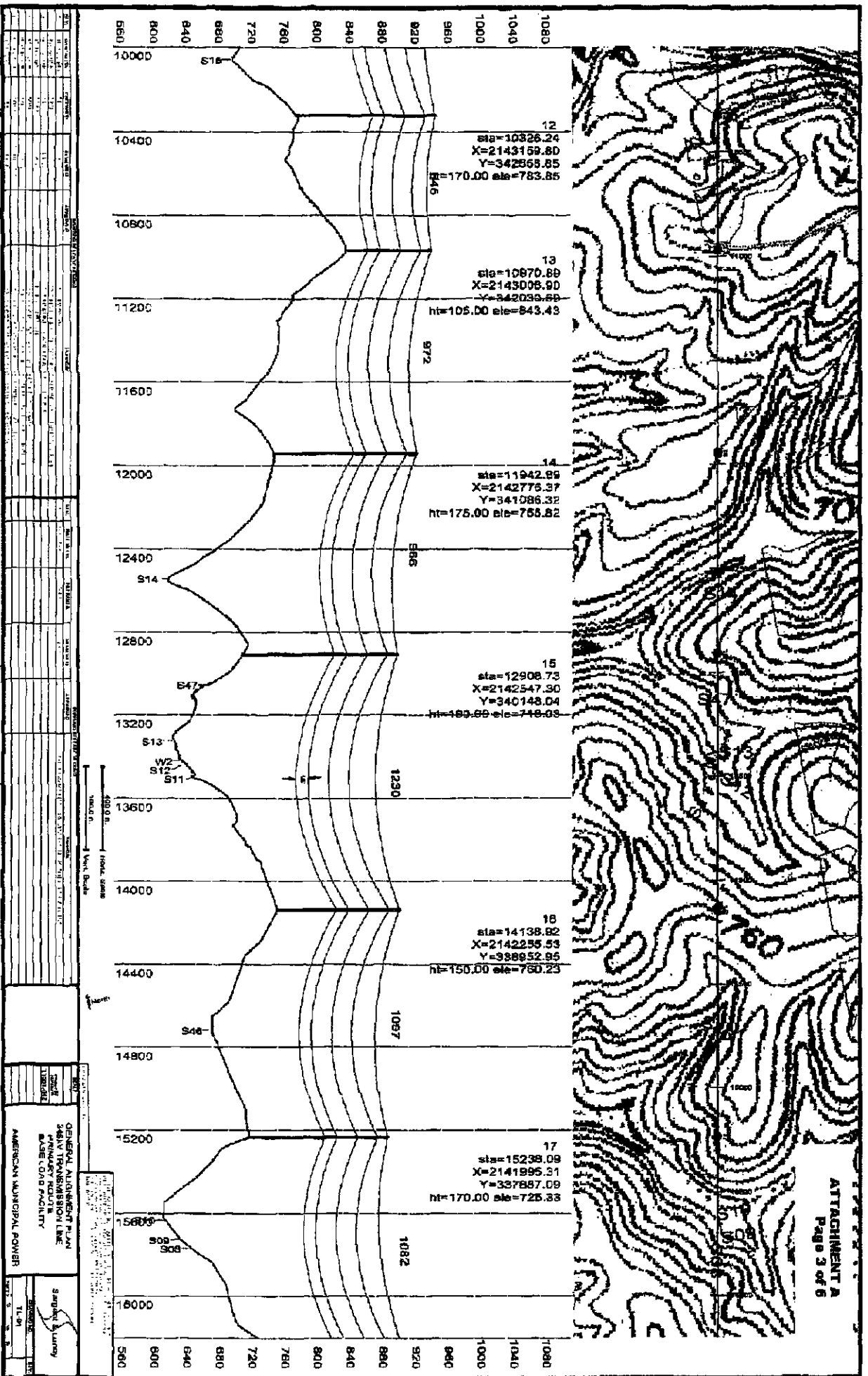
## **Attachment A**

**General Alignment Plan Primary (Preferred)  
Transmission Route dated September 19, 2008**

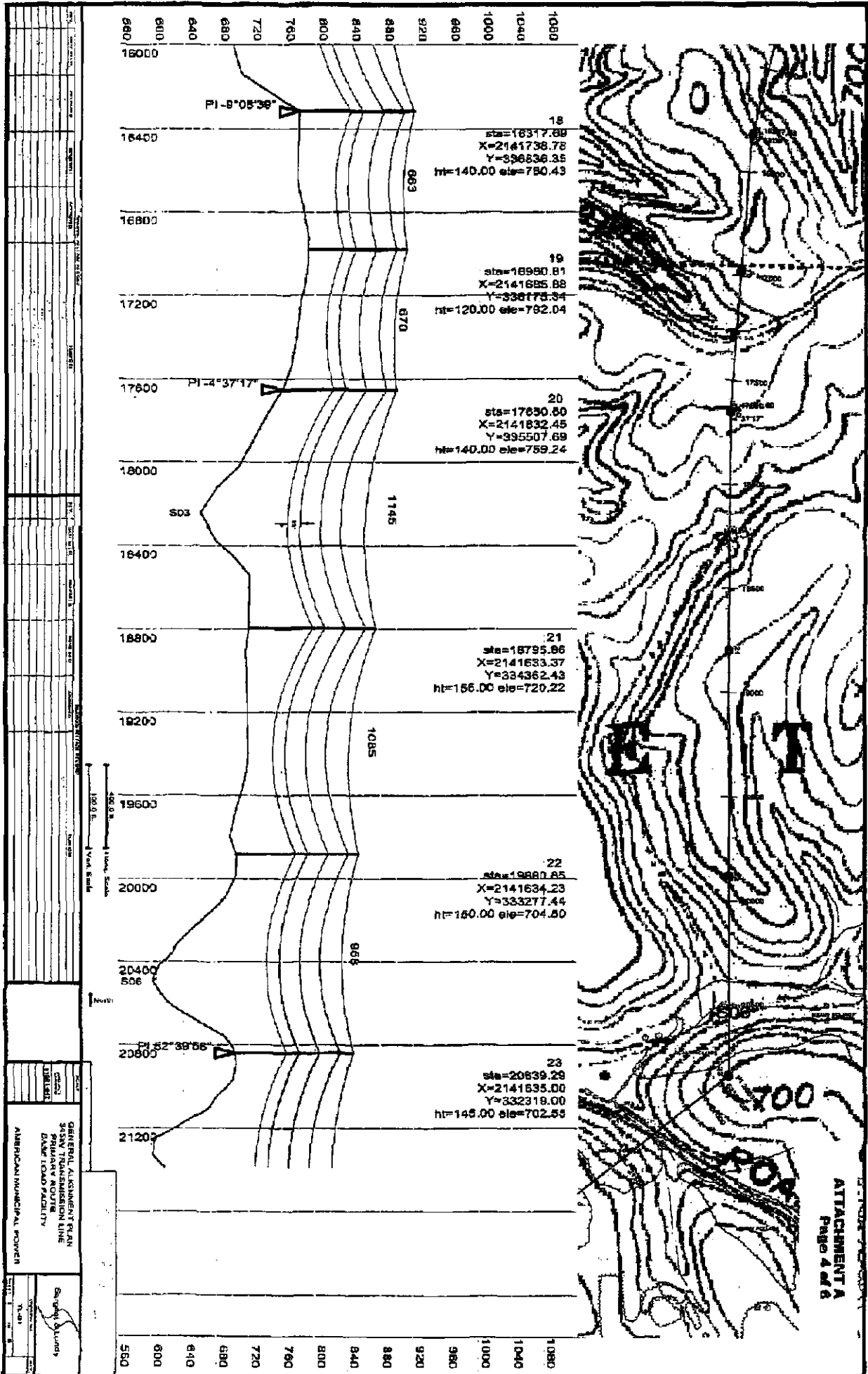








| Station | Elevation (ft) | Coordinates (X, Y)        | Notes                   |
|---------|----------------|---------------------------|-------------------------|
| 10000   | 846            | X=2143159.80, Y=342865.85 | Sta=10326.24, ht=170.00 |
| 10400   | 846            | X=2143008.90, Y=342038.69 | Sta=10870.89, ht=105.00 |
| 10800   | 846            | X=2142776.37, Y=341086.32 | Sta=11942.89, ht=175.00 |
| 11200   | 846            | X=2142547.30, Y=340148.04 | Sta=12908.73, ht=183.89 |
| 11600   | 846            | X=2142255.53, Y=338852.95 | Sta=14138.82, ht=150.00 |
| 12000   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 12400   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 12800   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 13200   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 13600   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 14000   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 14400   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 14800   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 15200   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 15600   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |
| 16000   | 846            | X=2141995.31, Y=337887.09 | Sta=15238.09, ht=170.00 |



Class II

# Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

44

SITE NAME/LOCATION: ANUP SITE NUMBER: 318 RIVER BASIN: LONG DRAINAGE AREA (sq. mi.): 2.1

LENGTH OF STREAM REACH (ft): 100 LAT: 39° 13' RIVER CODE: 13

DATE: 11/20/01 SCORER: HEM COMMENTS: Flow into 13

NOTE: Complete All Items On This Form - Refer To "Field Evaluation Manual" For Ohio's PRRN Streams "For In-stream"

1. SUBSTRATE (estimate percent of every type of substrate present. Check ONLY TWO predominant substrate TYPE boxes. Max of 100. Add total numbers of significant substrate types listed (Max of 10). Field metric score is sum of boxes A+B.

| Substrate    | Percent   | Score    |
|--------------|-----------|----------|
| Gravel       | 00        | 0        |
| Coarse Sand  | 00        | 0        |
| Fine Sand    | 00        | 0        |
| Silt         | 00        | 0        |
| Clay         | 00        | 0        |
| Bedrock      | 00        | 0        |
| Other        | 00        | 0        |
| <b>TOTAL</b> | <b>00</b> | <b>0</b> |

2. POOL DEPTH (measure the maximum pool depth within the 50 meter (200 ft) evaluation reach at the face of the evaluation. Avoid plunge pools from rapids or other waterfalls. Check ONLY one box.)

|                          |   |
|--------------------------|---|
| Shallow (Less than 1 ft) | 0 |
| Medium (1 to 2 ft)       | 0 |
| Deep (More than 2 ft)    | 0 |

3. CHANNEL WIDTH (measure the average of 3+ measurements. Check ONLY one box.)

|                          |   |
|--------------------------|---|
| Narrow (Less than 10 ft) | 0 |
| Medium (10 to 20 ft)     | 0 |
| Wide (More than 20 ft)   | 0 |

4. CHANNEL VELOCITY (estimate the average of 3+ measurements. Check ONLY one box.)

|                             |   |
|-----------------------------|---|
| Slow (Less than 0.5 ft/sec) | 0 |
| Medium (0.5 to 1.0 ft/sec)  | 0 |
| Fast (More than 1.0 ft/sec) | 0 |

5. CHANNEL VELOCITY (estimate the average of 3+ measurements. Check ONLY one box.)

|                             |   |
|-----------------------------|---|
| Slow (Less than 0.5 ft/sec) | 0 |
| Medium (0.5 to 1.0 ft/sec)  | 0 |
| Fast (More than 1.0 ft/sec) | 0 |

6. CHANNEL VELOCITY (estimate the average of 3+ measurements. Check ONLY one box.)

|                             |   |
|-----------------------------|---|
| Slow (Less than 0.5 ft/sec) | 0 |
| Medium (0.5 to 1.0 ft/sec)  | 0 |
| Fast (More than 1.0 ft/sec) | 0 |

7. CHANNEL VELOCITY (estimate the average of 3+ measurements. Check ONLY one box.)

|                             |   |
|-----------------------------|---|
| Slow (Less than 0.5 ft/sec) | 0 |
| Medium (0.5 to 1.0 ft/sec)  | 0 |
| Fast (More than 1.0 ft/sec) | 0 |

ADDITIONAL STREAM INFORMATION (This information must also be completed):

Over Performance? ☐ Yes ☒ No Other Score: \_\_\_\_\_ (If Yes, Attach Completed CP-61 Form)

DOWNSTREAM DESIGNATED USE(S)

☐ Wild Rice ☐ Other Name: \_\_\_\_\_

☐ Other Name: \_\_\_\_\_

☐ Other Name: \_\_\_\_\_

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EUBS WATERBUSH AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Haven 184 NCEC Soil Map Page: \_\_\_\_\_

County: Lucas Township: Cher

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

Other Name: \_\_\_\_\_

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DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This uses for mapping labels):

Include topographic landscape and other features of interest for site evaluation and a narrative description of the stream's location

Flow

PRRN Form Page - 1

October 2001 Revision

[illegible]

**ADDITIONAL STREAM INFORMATION (To be submitted, when also in compliance)**

GNEI PERFORMED? ☐ Yes ☒ No O&E Score \_\_\_\_\_ (If Yes, Attach Completed GNEI Form)

DOWNS-STREAM DESIGNATED USE(S) \_\_\_\_\_

☐ SWIM Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CFW Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ BWH Name: \_\_\_\_\_ Distance from Backwater Stream \_\_\_\_\_

MAPPING: ATTACH COPIES OF MAPS INCLUDING THE BRIDGE WATERSHIP AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Near Haven OH NCEC Soil Map Page: \_\_\_\_\_ SERCS Best Mts Stream Order \_\_\_\_\_

County: MAHON Township / City: \_\_\_\_\_

MISCELLANEOUS:

Base Flow Condition? (Y/N) X Date of last precipitation: unknown Quantity: 2

Photograph information: Y

Streambed Turbidity? (Y/N) N Current (ft/sec): 10.96

Were samples collected for water chemistry? (Y/N) N (Note lab sample no. or ID and attach results) Lab Number: \_\_\_\_\_

Field Parameters: Toxins (T) \_\_\_\_\_ Dissolved Oxygen (DO) \_\_\_\_\_ pH (8.1-11) \_\_\_\_\_ Conductivity (umhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) X If not, please explain: \_\_\_\_\_

Additional comments/reasons for petition response: \_\_\_\_\_

**BIOLOGICAL EVALUATION**

Performed? (Y/N) X (If Yes, Based on observations. Visual inspections advised. NOTE all instaur samples must be taken with the site ID number. Include observable field data drawn from the Primary Handbook rather than secondary sources.)

Fish Observations (Y/N) N Unusually (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) N Vegetation? (Y/N) \_\_\_\_\_  
Frogs or Toadpoles Observed? (Y/N) N Voles? (Y/N) \_\_\_\_\_ Arvicola Macroinvertebrates Observed? (Y/N) N Voles? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

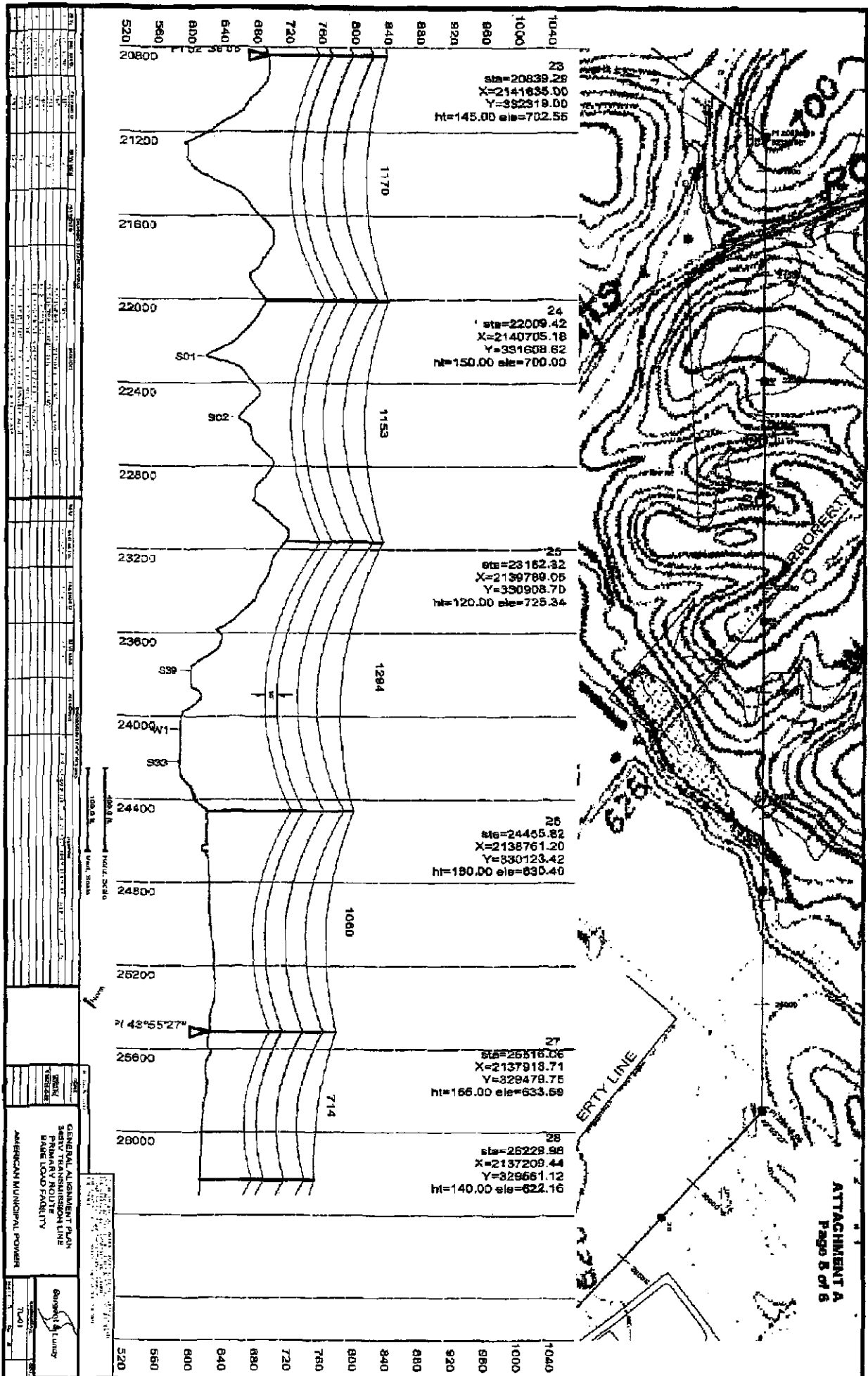
**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (THIS MUST BE COMPLETED):**

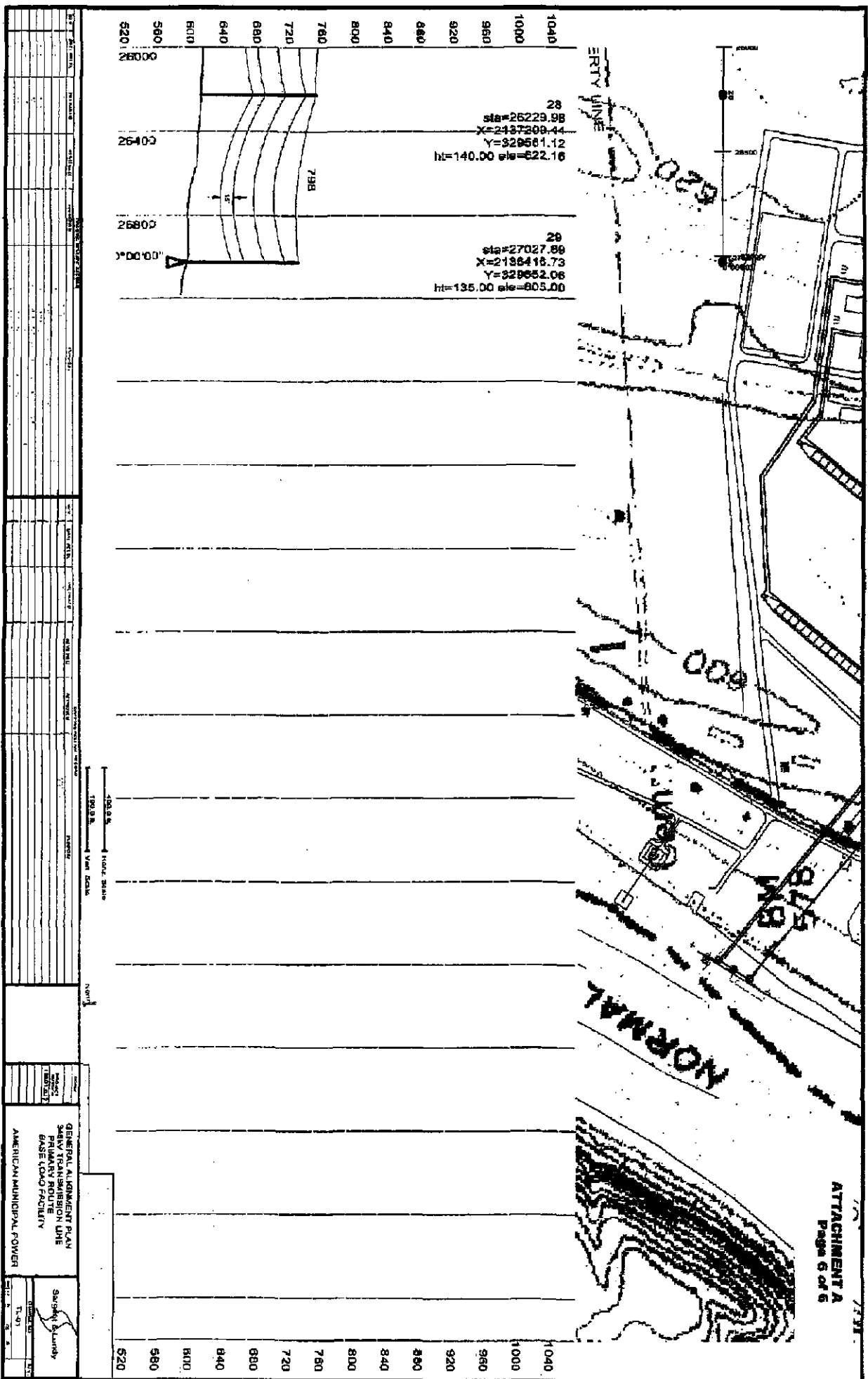
Provide impacts of land-use and other features of interest for site evaluation and a narrative description of the stream's location.

FLOW →

BFN=2'

BFN=4'

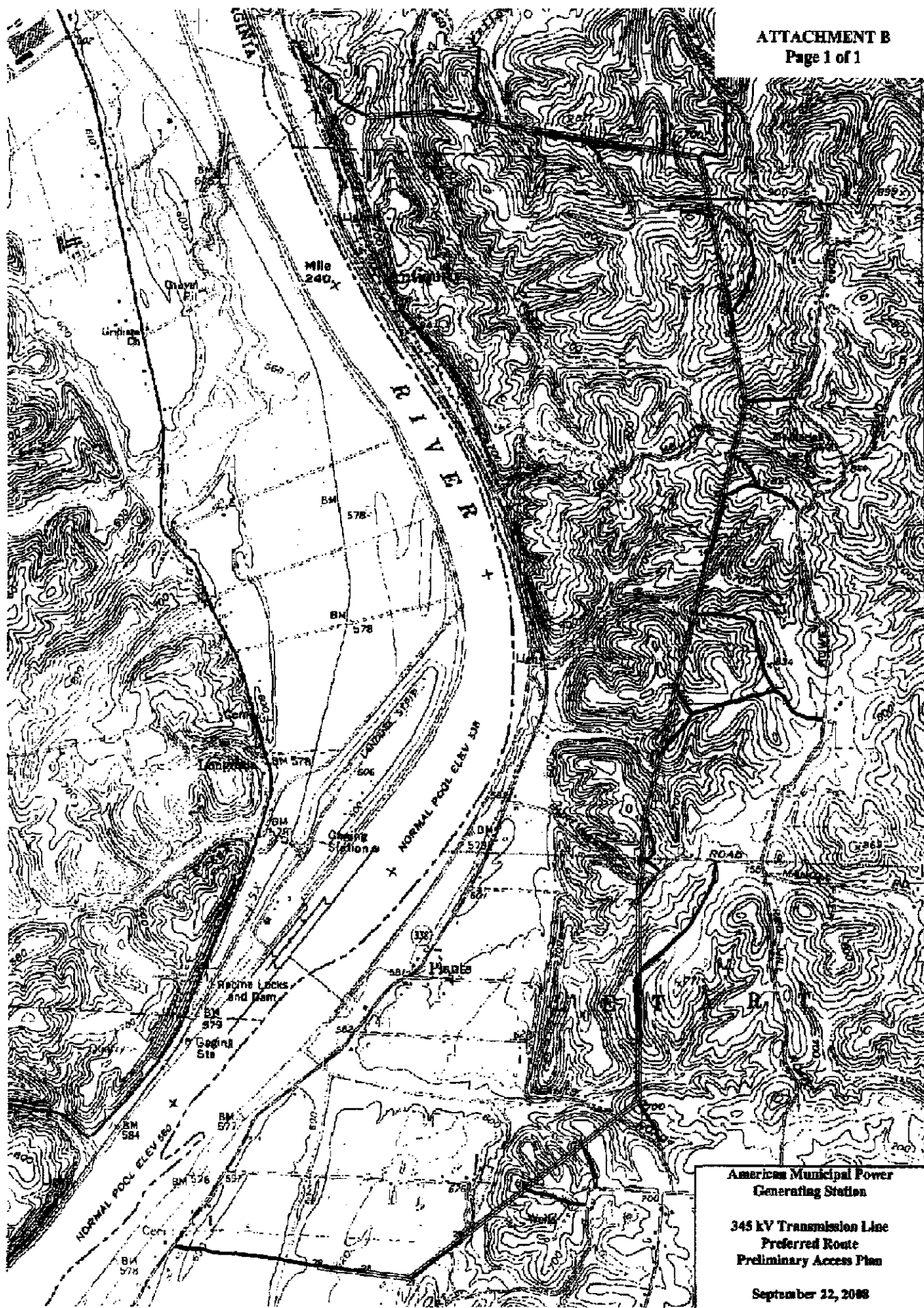






## **Attachment B**

**Preferred Route Preliminary Access Plan dated  
September 22, 2008**



American Municipal Power  
Generating Station

345 kV Transmission Line  
Preferred Route  
Preliminary Access Plan

September 12, 2008

## **Attachment C**

**Clearing Plan for Transmission Lines dated  
September 24, 2008**

Brian C. Wood  
Vice President  
Phone: (312) 269-2638  
brian.c.wood@sargentlundy.com

September 24, 2008

American Municipal Power-Ohio, Inc.  
Baseload Generating Station

**Clearing Plan for Transmission Lines**

Mr. Scott Kieseewetter  
Manager of New Plant Engineering  
American Municipal Power-Ohio, Etc.  
2600 Airport Drive  
Columbus, OH 43219

Dear Mr. Kieseewetter:

Sargent & Lundy has reviewed the Primary and Alternate transmission line routes to evaluate the clearing plan for the proposed routes.

Tree clearing will be required during construction of the new transmission line. Trees must be removed in order to construct access roads to each structure site. In addition, trees and obstructions must be removed in proximity to each transmission structure to allow space for construction crews to erect the structures. Finally, selective clearing will be required along the transmission right-of-way (ROW) to provide adequate electrical clearances between the conductors and any vegetation.

A tree species and height survey was performed by AMP -Ohio along the Primary route ROW at twenty headwater stream and two wetland crossings during mid-September 2008. AMP-Ohio staff estimates an average tree height of approximately 60 feet based on the areas included in the survey.

An approximate evaluation was performed to determine the areas that trees will need to be removed. Based on AMP-Ohio's estimated 60 feet average tree height plus an additional 15 feet clearance, as required by the National Electric Safety Code, the required clearance to the conductors would be a minimum of 75 feet. Using that as an average tree cover over the entire ROW, the following approximate lengths of ROW would be impacted and require significant selective clearing:

- Primary Route - 11,100 feet
- Alternate Route - 13,900 feet

Based on the 150 foot ROW, the total areas requiring significant selective clearing by segment would be:

- Primary Route - 39 acres
- Alternate Route - 48 acres

In addition, access roads approximately 15-20 feet in width will be required to each structure. This would add approximately five acres to the cleared areas to both the Primary and Alternate routes.

Please give Tony Lunardini (312) 269-8731 or me a call if you need any additional information.

Yours very truly,



B. Wood  
Vice President

BCW:ALL:RGP:seq  
Enclosures  
Copies:  
R. Presnak  
A. Lunardini

---

## **Attachment D**

### **Preferred Route Wetland Delineation and Stream Assessment Report dated September 23, 2008**



September 23, 2008

Mr. Scott Kiesewetter  
American Municipal Power  
2600 Airport Drive  
Columbus, Ohio 43219

**Re: Preferred Route Wetland Delineation and Stream Assessment Report,  
AMP-Ohio 345 kV Transmission Line Project, Meigs County, Ohio**

Dear Mr. Kiesewetter:

American Municipal Power-Ohio, Inc. (AMP-Ohio) is planning to construct a transmission line that will connect its proposed 1,000-MW pulverized coal fired power plant to an interconnection switchyard located south of the existing American Electric Power (AEP) Sporn-Kaiser No. 1 138 kV transmission line. The proposed transmission line is located in the Letart Falls area of Meigs County, Ohio. This letter report summarizes the findings of the wetland delineation and stream assessment conducted by URS for the Preferred Route. The delineation and assessment was conducted in August 2006, June 2007, April 2008, July 2008, and August 2008. Figure 1 shows the proposed delineated area and the surrounding vicinity.

The ecological assessment for this project was conducted by a qualified URS biologist. The assessment was comprised of an Army Corps of Engineers (ACOE) jurisdictional wetland delineation, Ohio EPA Ohio Rapid Assessment Method (ORAM) version 5.0 qualitative wetland assessments, and Headwater Habitat Evaluation Index (HHEI) and Qualitative Habitat Evaluation Index (QHEI) for surface drainages.

#### **Methods**

The project site was investigated for the presence of wetlands using the procedures outlined in the ACOE Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory, 1987). Completed ACOE wetland delineation forms for wetland W1 and W2 are included in Attachment 1. Additionally, URS prepared Ohio EPA ORAM version 5.0, (ORAM v5.0 Manual) qualitative wetland evaluation forms for these wetlands, which are included in Attachment 1. Habitat assessments for streams with a drainage area less than one square mile and located within the 150-foot construction right-of-way (ROW), were conducted using the methods described in the Ohio EPA's *Field Evaluation Manual for Ohio's Primary Headwater*

*Habitat Streams. Final Version 1.0* (Davie, 2001) (HHEI). The completed HHEI forms are included in Attachment 2. Habitat assessment of streams with a drainage area greater than one square mile and located within the 150-foot construction ROW, were conducted using the methods described in the Ohio EPA's *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index* (Rankin, 2006) (QHEI). The completed QHEI forms are included in Attachment 2. The locations and approximate extent of these features are provided on Figure 1.

## **Results**

### ***U.S. Army Corps of Engineers Evaluation***

Two wetlands, totaling 0.91 acres were delineated within the 150-foot construction ROW. Wetland W1 covers an area of 0.90 acres. Wetland W2 covers an area of 0.01 acres. Wetland W1 is labeled PEM/PSS with a small PFO component based on Cowardin Wetland Classification. Wetland W2 is labeled PEM based on the Cowardin Wetland Classification. See Table 1 for details on both wetlands.

Based upon the procedure identified in the *1987 Manual*, the areas delineated in Figure 1 are wetlands, as they meet vegetation, soil and hydrology wetland criteria. Upland areas were observed to contain some wetland vegetation, but did not meet the hydrology and/or soils criteria of the *1987 Manual*.

### ***Ohio EPA ORAM Evaluation***

According to the Ohio EPA ORAM evaluation, wetland W1 scored 58.5/100, indicating it is a Category II wetland. Wetland W2 scored 54/100, indicating it is a Category II wetland. The Category II wetland exhibited moderate to high quality plant communities with few invasive species, moderate to good plant community interspersation, low to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovered and/or no modification to natural hydrology and habitat. See Table 1 regarding delineated Preferred Route wetlands.



***Ohio EPA QHEI Evaluation***

Ohio EPA QHEI forms for stream habitat assessments were completed for one stream located within the 150-foot construction ROW. The completed QHEI stream form is included in Attachment 2. The location of these streams is provided on Figure 1.

The QHEI method is generally considered appropriate for streams with drainage basins greater than one square mile, if natural pools are greater than 40 cm, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the Ohio EPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams (H are those with a watershed area less than or equal to 20 square miles) versus larger streams (L are those with a watershed area greater than 20 square miles). The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L).

Field surveys along the Preferred Route identified one stream with a drainage area greater than one square mile. The QHEI evaluation of the stream resulted in a "good warmwater habitat" stream designation (S31).

***Ohio EPA HHEI Evaluation***

Ohio EPA HHEI forms for stream habitat assessment were completed for 32 streams located within the 150-foot construction ROW. The completed HHEI stream forms are included in Attachment 2. The location of these streams is provided on Figure 1.

The HHEI methodology uses a 100-point scale for scoring. The score is based on composition of substrate, pool depth, and bankfull width. Once a score is obtained, it is applied to the decision-making flow chart. This chart serves to assign a class to streams based upon stream channel modifications, biotic communities, and percentage of substrate comprised of bedrock, boulder, boulder slabs, and cobble.

The Preferred Route contains 32 primary headwater streams including: 12 Class I streams, 12 Class II streams, and 8 Class III streams. Preferred Route streams are summarized in Table 2.

***Class I Streams*** – Twelve Class I headwater streams were identified during the field investigation with scores ranging from a low of 9 to a high of 28. The substrate composition of these streams is generally dominated by silt, clay, leafpack/woody debris. Muck, sand, and gravel are also noted as less dominant substrate types in this stream class. Maximum pool depth is less 0 inches. The bankfull width for this group of streams is less than 3 feet.

***Class II Headwater Streams*** – Twelve Class II headwater streams were identified during the field investigation with scores ranging from a low of 30 to a high of 56. The substrate composition of these streams is generally dominated by gravel, silt, and sand. Cobble, leafpack/woody debris, and boulder slabs are also noted as less dominant substrate types in this class of stream. The maximum pool depth is less than 12 inches. The bank full width for this group of streams is generally less than 7 feet.

***Class III Headwater Streams*** - Eight Class III headwater streams were evaluated during the field investigation with scores ranging from 45 to 82. The substrate of these streams is dominated by cobble, gravel, and bedrock. Sand and silt are noted as less dominant substrate types. The maximum pool depth is 10 inches. The bank full width is between 2 and 8 feet.

### **Interconnection Switchyard**

Field surveys identified no wetlands within the interconnection switchyard (switchyard) boundary. Field surveys did identify one headwater stream, S37, within the switchyard boundary. Approximately 190 feet of S37 are within the switchyard boundary (Figure 1). Stream S37 scored 19/100, classifying it as a Class I stream. The substrate of this stream is dominated by leafpack/woody debris and sand. Gravel, cobble, and fine detritus are

noted as less dominant substrate types. The maximum pool depth is 0 inches. The bankfull width is 1 foot.

### **Comparison to Alternate Route**

The Alternate Route contains 27 streams within the 150-foot construction ROW, one QHEI evaluated stream (same as crossed by Preferred Route) and 26 HHEI evaluated headwater streams. The QHEI evaluated stream received a "good warmwater habitat" narrative rating. Seven Class I streams, 17 Class II streams, and 2 Modified Class II streams were evaluated using the HHEI method. See Table 3 for a description of streams found with the Alternate Route 150-foot construction ROW.

Two wetlands identified within the Alternate Route, wetland W1 and Alt-W1, totaling 1.12 acres were delineated within the 150-foot construction ROW. Wetland W1 covers an area of 0.90 acres. Wetland Alt-W1 covers an area of 0.22 acres. Wetland W1 is labeled PEM/PSS with a small PFO component based on Cowardin Wetland Classification. Wetland Alt-W1 is labeled PEM based on the Cowardin Wetland Classification. See Table 4 for details on both wetlands.

According to the Ohio EPA ORAM evaluation, wetland W1 scored 58.5/100, indicating it is a Category II wetland. Wetland Alt-W1 scored 42/100, indicating it is a Category II wetland. The Category II wetland exhibited moderate to high quality plant communities with few invasive species, moderate to good plant community interspersions, low to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovered and/or no modification to natural hydrology and habitat. See Table 4 regarding Alternate Route wetlands.

### **Conclusions**

Two jurisdictional (i.e. non-isolated), wetlands, totaling 0.91 acres, were identified within the 150-foot construction ROW of the Preferred Route. URS's Ohio EPA ORAM evaluation of both wetlands resulted in both wetlands being designated as Category II wetlands.

Thirty-three streams were identified within the 150-foot construction ROW. One stream was evaluated using the QHEI methodology and resulted in a narrative rating of "good warmwater habitat" stream. Thirty-two headwater streams were evaluated using the HHEI methodology; 12 Class I streams, 12 Class II streams, and 8 Class III streams.

One HHEI evaluated Class I stream was identified within the interconnection switchyard boundary (S37).

Two wetlands identified within the Alternate Route, totaling 1.12 acres, were delineated within the 150-foot construction ROW. Twenty-seven streams within the Alternate Route 150-foot construction ROW were assessed, one QHEI evaluated stream, a "good warmwater habitat stream", and 26 HHEI evaluated headwater streams; 7 Class I streams, 17 Class II streams, and 2 Modified Class II streams.

Approximately 5 miles of new electric transmission line will be built to connect the project to the electric grid. No wetlands or streams will be filled as part of the transmission line construction or operation. Construction will require stream crossings but these will be temporary and will be discussed with the OEPA and OPSB during preconstruction meetings. The crossing method will vary according to width and quality of the stream, but will be designed in accordance with the Rainwater and Land Development Manual published by the ODNR/OEPA. Erosion control and restoration will be conducted according to the conditions of the Stormwater Pollution Prevention Plan and OPSB Application.

The construction of the interconnect switchyard will require impact to stream S37, however impacts will be mitigated through the proposed off-site stream mitigation.



Mr. Scott Kieseewetter  
9/23/2008  
Page 7

If you have any questions or comments regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

URS

A handwritten signature in cursive script, appearing to read "Matthew Thomayer".

Matthew Thomayer  
Environmental Scientist

A handwritten signature in cursive script, appearing to read "James M. Nicholas".

James Nicholas, Ph.D.  
Principal Scientist

**TABLE 1**  
**WETLANDS LOCATED IN THE AMP-OHIO 345 kV**  
**TRANSMISSION LINE PREFERRED ROUTE CORRIDOR**

| Wetland ID      | Cowardin Wetland Type     | ORAM Score | ORAM Category | Linear Feet Crossed | Acreage within 150-foot Corridor |
|-----------------|---------------------------|------------|---------------|---------------------|----------------------------------|
| W1              | PEM/SS with PFO Component | 58.5       | II            | 252                 | 0.90                             |
| W2              | PEM                       | 54         | II            | 9                   | 0.01                             |
| <b>Total: 2</b> |                           |            |               | <b>261</b>          | <b>0.91</b>                      |

**TABLE 2**  
**STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE PREFERRED ROUTE CORRIDOR**

| Stream Name | Flow Regime | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length of Stream within 150 ROW (feet) |
|-------------|-------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--|
| S01         | Interstital | 4                     | 3                           | HHEI              | 56    | Class II               | 168.0                                  |
| S02         | Ephemeral   | 1.5                   | 0                           | HHEI              | 19    | Class I                | 162.7                                  |
| S03         | Interstital | 3                     | 3                           | HHEI              | 39    | Class II               | 225.1                                  |
| S04         | Ephemeral   | 1.5                   | 0                           | HHEI              | 24    | Class I                | 177.2                                  |
| S06         | Ephemeral   | 7                     | 0                           | HHEI              | 37    | Class II               | 177.1                                  |
| S08         | Ephemeral   | 3                     | 0                           | HHEI              | 27    | Class I                | 177.5                                  |
| S09         | Ephemeral   | 6                     | 0                           | HHEI              | 39    | Class II               | 165.1                                  |
| S10         | Interstital | 7.5                   | 2                           | HHEI              | 55    | Class III              | 228.3                                  |
| S11         | Ephemeral   | 2                     | 2                           | HHEI              | 34    | Class II               | 160.1                                  |
| S12         | Interstital | 2.5                   | 4                           | HHEI              | 45    | Class III              | 309.4                                  |
| S13         | Perennial   | 2.5                   | 3                           | HHEI              | 26    | Class I                | 58.9                                   |
| S14         | Perennial   | 5.5                   | 4                           | HHEI              | 64    | Class III              | 152.8                                  |
| S15         | Perennial   | 7                     | 2                           | HHEI              | 62    | Class III              | 155.0                                  |
| S16         | Interstital | 5                     | 3                           | HHEI              | 54    | Class III              | 205.2                                  |
| S17         | Ephemeral   | 3                     | 0                           | HHEI              | 18    | Class I                | 233.2                                  |
| S18         | Ephemeral   | 2.5                   | 0                           | HHEI              | 41    | Class I                | 299.1                                  |
| S19         | Perennial   | 7                     | 8                           | HHEI              | 82    | Class III              | 214.3                                  |
| S20         | Ephemeral   | 4                     | 0                           | HHEI              | 30    | Class II               | 179.2                                  |
| S21         | Interstital | 6                     | 3                           | HHEI              | 62    | Class III              | 109.0                                  |
| S22         | Ephemeral   | 3                     | 0                           | HHEI              | 9     | Class I                | 91.3                                   |
| S24         | Ephemeral   | 2.5                   | 0                           | HHEI              | 25    | Class I                | 219.7                                  |
| S25         | Ephemeral   | 4                     | 0                           | HHEI              | 35    | Class II               | 119.6                                  |
| S27         | Interstital | 8                     | 10                          | HHEI              | 71    | Class III              | 193.1                                  |
| S29         | Ephemeral   | 1                     | 0                           | HHEI              | 9     | Class I                | 35.9                                   |
| S31         | Perennial   | 17                    | 24                          | QHBI              | 63    | Good Warmwater Habitat | 150.3                                  |
| S33         | Perennial   | 7                     | 12                          | HHEI              | 52    | Class II               | 189.8                                  |

TABLE 2

STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE PREFERRED ROUTE CORRIDOR

| Stream Name      | Flow Regime  | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length of Stream within 150 ROW (feet) |
|------------------|--------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--|
| S35              | Intermittent | 3                     | 0                           | HHEI              | 19    | Class I                | 162.2                                  |
| S36              | Ephemeral    | 3                     | 0                           | HHEI              | 32    | Class II               | 226.7                                  |
| S38              | Ephemeral    | 2                     | 0                           | HHEI              | 23    | Class I                | 33.9                                   |
| S39              | Ephemeral    | 3                     | 6                           | HHEI              | 44    | Class II               | 212.7                                  |
| S40              | Ephemeral    | 2                     | 2                           | HHEI              | 28    | Class I                | 6.9                                    |
| S46              | Ephemeral    | 3                     | 2                           | HHEI              | 37    | Class II               | 236.7                                  |
| S47              | Ephemeral    | 3                     | 0                           | HHEI              | 21    | Class I                | 141.9                                  |
| <b>Total: 33</b> |              | <b>141</b>            | <b>93</b>                   |                   |       |                        | <b>5577.7</b>                          |

Table 2



**TABLE 3**  
**STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE ALTERNATE ROUTE CORRIDOR**

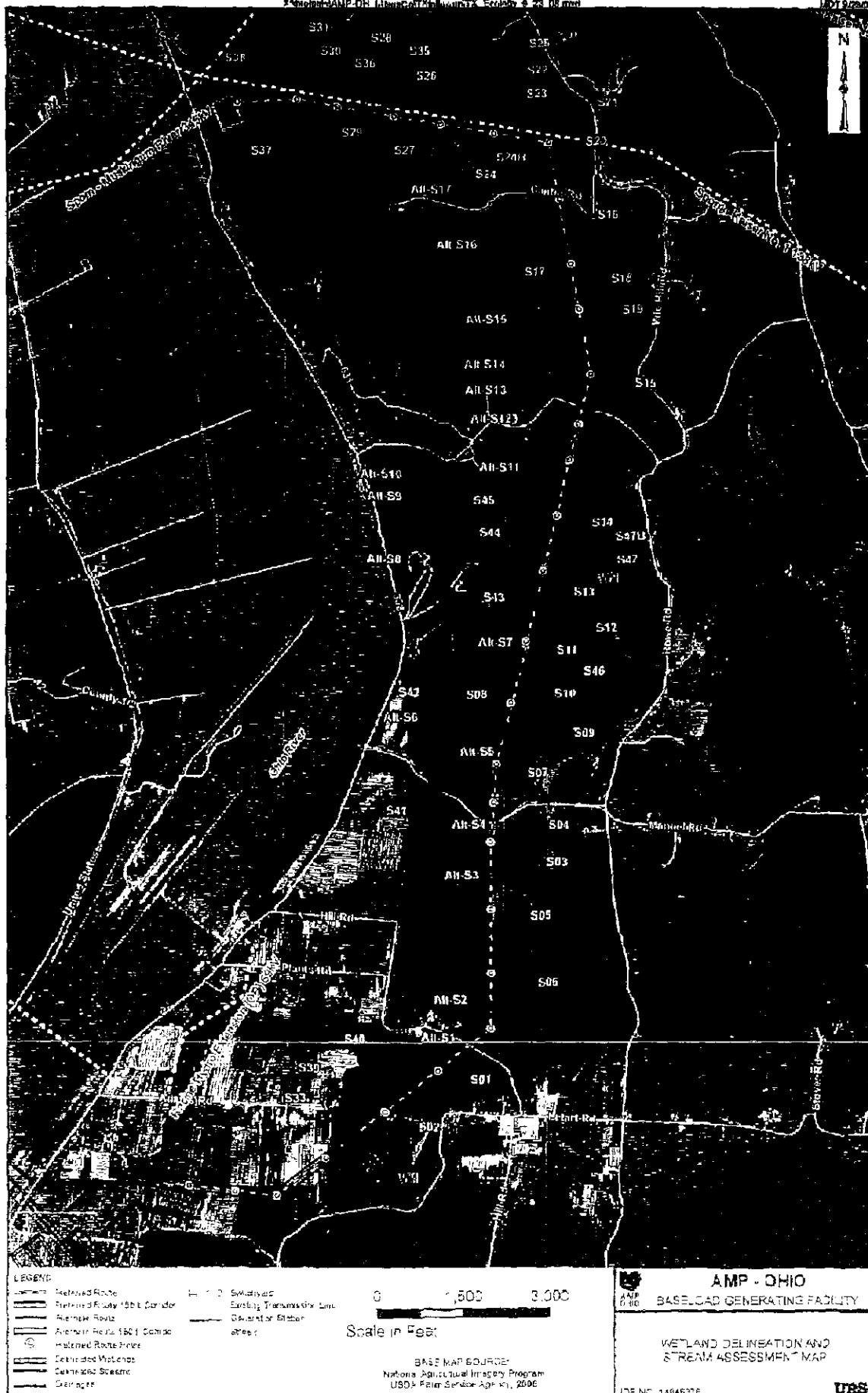
| Name    | Flow Regime  | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length within 150-foot Corridor (feet) |
|---------|--------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--|
| S33     | Perennial    | 6                     | 12                          | HHEI              | 52    | Class 2                | 189.7                                  |
| Alt-S1  | Intermittent | 3                     | 0                           | HHEI              | 11    | Class 1                | 124.0                                  |
| Alt-S2  | Intermittent | 3                     | 0                           | HHEI              | 37    | Modified Class 2       | 153.7                                  |
| Alt-S3  | Intermittent | 3                     | 0                           | HHEI              | 15    | Class 1                | 216.9                                  |
| Alt-S4  | Ephemeral    | 3.5                   | 0                           | HHEI              | 41    | Class 2                | 147.5                                  |
| Alt-S5  | Ephemeral    | 7                     | 0                           | HHEI              | 47    | Class 2                | 125.1                                  |
| Alt-S6  | Ephemeral    | 7                     | 0                           | HHEI              | 40    | Class 2                | 196.7                                  |
| Alt-S7  | Intermittent | 10.5                  | 0                           | HHEI              | 50    | Class 2                | 170.4                                  |
| Alt-S8  | Intermittent | 7                     | 0                           | HHEI              | 45    | Modified Class 2       | 260.3                                  |
| Alt-S9  | Ephemeral    | 6                     | 0                           | HHEI              | 57    | Class 2                | 144.0                                  |
| Alt-S10 | Ephemeral    | 9.5                   | 0                           | HHEI              | 53    | Class 2                | 191.3                                  |
| Alt-S11 | Ephemeral    | 8                     | 0                           | HHEI              | 40    | Class 2                | 90.3                                   |
| Alt-S12 | Ephemeral    | 7                     | 0                           | HHEI              | 31    | Class 2                | 268.8                                  |
| Alt-S13 | Intermittent | 6                     | 0                           | HHEI              | 32    | Class 2                | 380.8                                  |
| Alt-S14 | Ephemeral    | 6                     | 0                           | HHEI              | 38    | Class 2                | 165.2                                  |
| Alt-S15 | Ephemeral    | 11                    | 0                           | HHEI              | 50    | Class 2                | 92.6                                   |
| Alt-S16 | Ephemeral    | 11                    | 0                           | HHEI              | 50    | Class 2                | 155.0                                  |
| Alt-S17 | Ephemeral    | 10                    | 0                           | HHEI              | 54    | Class 2                | 155.0                                  |
| S31     | Perennial    | 7                     | 24                          | QHEI              | 63    | Good Warmwater Habitat | 160.9                                  |
| S38     | Ephemeral    | 2                     | 0                           | HHEI              | 23    | Class 1                | 150.5                                  |

TABLE 3  
STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE ALTERNATE ROUTE CORRIDOR

| Name      | Flow Regime | Bankfull Width (feet) | Maximum Pool Depth (inches) | Assessment Method | Score | Class/Narrative Rating | Length within 150-foot Corridor (feet) |
|-----------|-------------|-----------------------|-----------------------------|-------------------|-------|------------------------|--|
| S39       | Perennial   | 3                     | 6                           | HHEI              | 44    | Class 2                | 215.7                                  |
| S40       | Perennial   | 2                     | 2                           | HHEI              | 28    | Class 1                | 171.3                                  |
| S41       | Perennial   | 1.5                   | 1                           | HHEI              | 24    | Class 1                | 148.4                                  |
| S42       | Perennial   | 2                     | 1.5                         | HHEI              | 17    | Class 1                | 174.2                                  |
| S43       | Perennial   | 3.5                   | 3                           | HHEI              | 45    | Class 2                | 192.8                                  |
| S44       | Perennial   | 3.5                   | 3                           | HHEI              | 48    | Class 2                | 189.8                                  |
| S45       | Ephemeral   | 2                     | 0                           | HHEI              | 19    | Class 1                | 164.3                                  |
| Total: 27 |             | 151                   | 53                          |                   |       |                        | 4,745.4                                |

**TABLE 4**  
**WETLANDS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE ALTERNATE**  
**ROUTE CORRIDOR**

| Wetland ID      | Cowardin Wetland Type     | ORAM Score | ORAM Category | Linear Feet Crossed | Acreage within 150-foot Corridor |
|-----------------|---------------------------|------------|---------------|---------------------|----------------------------------|
| W1              | PEM/SS with PFO Component | 58.5       | II            | 252                 | 0.90                             |
| Alt-W1          | PEM                       | 42         | II            | 75                  | 0.22                             |
| <b>Total: 2</b> |                           |            |               | <b>327</b>          | <b>1.12</b>                      |



**ATTACHMENT 1**

**U.S. ARMY CORPS OF ENGINEERS**  
**AND**  
**OHIO EPA ORAM**  
**DATA SHEETS**

DATA FORM  
ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

|  |   |     |    |     |    |     |    |
|--|---|-----|----|-----|----|-----|----|
| Project/Site: <u>AMP-Ohio Transmission</u>   | Date: <u>8/1/06</u>   |     |    |     |    |     |    |
| Applicant/Owner: <u>AMP-Ohio</u>   | County: <u>High</u>   |     |    |     |    |     |    |
| Investigator: <u>JAV CURS</u>  | State: <u>OH</u>  |     |    |     |    |     |    |
| Do Normal Circumstances Exist on the site?<br>Is the site significantly disturbed (Atypical Situation)?<br>Is the area a potential Problem Area?<br>(If needed, explain on reverse.) | <table border="0"> <tr> <td>Yes</td> <td>No</td> </tr> <tr> <td>Yes</td> <td>No</td> </tr> <tr> <td>Yes</td> <td>No</td> </tr> </table> | Yes | No | Yes | No | Yes | No |
| Yes  | No  |     |    |     |    |     |    |
| Yes  | No  |     |    |     |    |     |    |
| Yes  | No  |     |    |     |    |     |    |
| Community ID: <u>PEM/RSS</u>   |   |     |    |     |    |     |    |
| Transect ID: <u>-</u>  |   |     |    |     |    |     |    |
| Plot ID: <u>W1</u>   |   |     |    |     |    |     |    |

w/ PFD  
component

VEGETATION

| Dominant Plant Species         | Stratum   | Indicator    | Dominant Plant Species              | Stratum   | Indicator      |
|--------------------------------|-----------|--------------|-------------------------------------|-----------|----------------|
| 1. <u>Dicentrastrum</u>        | <u>H</u>  | <u>FAC+</u>  | 9. <u>Polygonum sagittatum</u>      | <u>H</u>  | <u>OBL</u>     |
| 2. <u>Comptarion capensis</u>  | <u>H</u>  | <u>FACW</u>  | 10. <u>Carex sp.</u>                | <u>H</u>  | <u>FAC-OBL</u> |
| 3. <u>Juncus effusus</u>       | <u>H</u>  | <u>FACW+</u> | 11. <u>Zizania latifolia</u>        | <u>H</u>  | <u>OBL</u>     |
| 4. <u>Nypha latifolia</u>      | <u>H</u>  | <u>OBL</u>   | 12. <u>Polygonum pennsylvanicum</u> | <u>H</u>  | <u>FACW</u>    |
| 5. <u>Nypha angustifolia</u>   | <u>H</u>  | <u>OBL</u>   | 13. <u>Ranuncus occidentalis</u>    | <u>ST</u> | <u>FACW-</u>   |
| 6. <u>Eupatorium purpureum</u> | <u>H</u>  | <u>FACW+</u> | 14. <u>Salix nigra</u>              | <u>S</u>  | <u>FACW-</u>   |
| 7. <u>Acer saccharinum</u>     | <u>ST</u> | <u>FACW</u>  | 15. <u>Aegilops monensis</u>        | <u>S</u>  | <u>FACU-</u>   |
| 8. <u>Bidens frondosa</u>      | <u>H</u>  | <u>FACW</u>  | 16. <u>Verbena hastata</u>          | <u>H</u>  | <u>FACW+</u>   |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): ~95-100%

Remarks: other observed plants include american water plantain, smartweed fern, and reed grass

HYDROLOGY

|   |   |
|---|---|
| <p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p> | <p>Wetland hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12"</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> |
| <p>Field Observations:</p> <p>Depth of Surface Water: <u>    </u> (in.)</p> <p>Depth to Free Water in Pit: <u>    </u> (in.)</p> <p>Depth to Saturated Soil: <u>surface</u> (in.)</p>   | <p>Remarks: <u>strong wetland hydrology, stream insects wetland</u></p>   |



**DATA FORM**

**ROUTINE WETLAND DETERMINATION**

(1987 COE Wetlands Delineations Manual)

|   |   |                   |
|---|---|-------------------|
| Project/Site: AMP   |   | Date: 8/23/06     |
| Applicant/Owner: AMP  |   | County: Maigs     |
| Investigator(s): Brooke McCloskey                                     |   | State: OH         |
| Do Normal Circumstances exist on the site?                            | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Community ID: PEM |
| Is the site significantly disturbed (Atypical Situation)?             | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Transect ID: WET  |
| Is the area a potential Problem Area? (If needed, explain on reverse) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Plot ID: 2        |
|   |   | GPS Coordinates:  |

**VEGETATION**

| Dominant Plant Species     | % Cover | Stratum | Indicator | Dominant Plant Species | % Cover | Stratum | Indicator |
|----------------------------|---------|---------|-----------|------------------------|---------|---------|-----------|
| 1. Impatiens capensis      | 20      | He      | FACW      | 9.                     |         |         |           |
| 2. Toxicodendron radicans  | 10      | He      | FAC       | 10.                    |         |         |           |
| 3. Panicum clandestinum    | 35      | He      | FAC+      | 11.                    |         |         |           |
| 4. Polygonum pensylvanicum | 5       | He      | FACW      | 12.                    |         |         |           |
| 5. Boehmeria cylindrica    | 25      | He      | FACW      | 13.                    |         |         |           |
| 6. Cyperus esculentus      | 5       | He      | FACW      | 14.                    |         |         |           |
| 7.                         |         |         |           | 15.                    |         |         |           |
| 8.                         |         |         |           | 16.                    |         |         |           |

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-):

Remarks: Hydrophytic vegetation criterion has been met.

**HYDROLOGY**

|  |  |
|--|--|
| <input type="checkbox"/> Recorded Data (Describe in Remarks)<br><input type="checkbox"/> Stream, Lake, or Tide Gauge<br><input type="checkbox"/> Aerial Photographs<br><input type="checkbox"/> Other<br><input type="checkbox"/> No Recorded Data Available | <b>Wetland Hydrology Indicators:</b><br><br><b>Primary Indicators:</b><br><input checked="" type="checkbox"/> Inundated<br><input checked="" type="checkbox"/> Saturated in Upper 12 inches<br><input type="checkbox"/> Water Marks<br><input type="checkbox"/> Drift Lines<br><input type="checkbox"/> Sediment Deposits<br><input type="checkbox"/> Drainage Patterns in Wetlands<br><br><b>Secondary Indicators (2 or more Required):</b><br><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches<br><input checked="" type="checkbox"/> Water-Stained Leaves<br><input type="checkbox"/> Local Soil Survey Data<br><input checked="" type="checkbox"/> FAC-Neutral Test<br><input type="checkbox"/> Other (Explain in Remarks) |
| <b>Field Observations:</b><br>Depth of Surface Water: <u>2</u> (in.)<br>Depth to Free Water in Pit: <u>8</u> (in.)<br>Depth to Saturated Soil: <u>surface</u> (in.)  |  |
| Remarks: Wetland hydrology criterion has been met.   |  |



DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineations Manual)

SOILS

|                                   |         |                                 |  |                                |  |
|-----------------------------------|---------|---------------------------------|--|--------------------------------|--|
| Map Unit Name (Series and Phase): |         |                                 |  | Drainage Class:                |  |
| Taxonomy (Subgroup):              |         |                                 | Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No |                                |  |
| <b>Profile Description:</b>       |         |                                 |  |                                |  |
| Depth<br>(inches)                 | Horizon | Matrix Color<br>(Munsell Moist) | Mottle Colors<br>(Munsell Moist)   | Mottle<br>(Abundance/Contrast) | Texture, Concretions,<br>Structure, etc. |
| 0-1                               | A       | 10YR 2/1                        | NA   |                                |  |
| 1-6                               | B       | 10YR 4/1                        | NA   |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |

**Hydric Soil Indicators:**

|   |   |
|---|---|
| <input type="checkbox"/> Histosol                               | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon                        | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor                          | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture regime                  | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions                    | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

**Remarks:** Hydric soils criterion met.

WETLAND DETERMINATION

|   |   |   |
|---|---|---|
| Hydrophytic Vegetation Present?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Is this Sampling Point Within a Wetland?<br><br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Wetland Hydrology Present?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| Hydric Soils Present?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| <b>Remarks:</b> All three wetland criteria have been met, therefore, this area is considered a wetland. |   |   |

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineations Manual)

|   |   |                   |
|---|---|-------------------|
| Project/Site: AMP   |   | Date: 8/23/08     |
| Applicant/Owner: AMP  |   | County: Meigs     |
| Investigator(s): Brooke McGloskey                                     |   | State: OH         |
| Do Normal Circumstances exist on the site?                            | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Community ID: PEM |
| Is the site significantly disturbed (Atypical Situation)?             | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Transect ID: UPL  |
| Is the area a potential Problem Area? (If needed, explain on reverse) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Plot ID: 2        |
|   |   | GPS Coordinates:  |

VEGETATION

| Dominant Plant Species   | % Cover | Stratum | Indicator | Dominant Plant Species     | % Cover | Stratum | Indicator |
|--------------------------|---------|---------|-----------|----------------------------|---------|---------|-----------|
| 1. Impatiens capensis    |         | He      | FACW      | 9. Ambrosia artemisiifolia |         | He      | FACU      |
| 2. Ionicera japonica     |         | He      | FAC-      | 10.                        |         |         |           |
| 3. Erigeron annuus       |         | He      | FACU      | 11.                        |         |         |           |
| 4. Rubus allegheniensis  |         | He      | FACU      | 12.                        |         |         |           |
| 5. Boehmeria cylindrica  |         | He      | FACW      | 13.                        |         |         |           |
| 6. Oxalis stricta        |         | He      | UPL       | 14.                        |         |         |           |
| 7. Polygonum virginianum |         | He      | FAC       | 15.                        |         |         |           |
| 8. Commelina communis    |         | He      | FAC       | 16.                        |         |         |           |

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 4/8=44%

Remarks: Hydrophytic vegetation criterion has not been met.

HYDROLOGY

|  |  |
|--|--|
| <input type="checkbox"/> Recorded Data (Describe in Remarks)<br><input type="checkbox"/> Stream, Lake, or Tide Gauge<br><input type="checkbox"/> Aerial Photographs<br><input type="checkbox"/> Other<br><input type="checkbox"/> No Recorded Data Available | <b>Wetland Hydrology Indicators:</b><br><br><b>Primary Indicators:</b><br><input type="checkbox"/> Inundated<br><input type="checkbox"/> Saturated in Upper 12 inches<br><input type="checkbox"/> Water Marks<br><input type="checkbox"/> Drift Lines<br><input type="checkbox"/> Sediment Deposits<br><input type="checkbox"/> Drainage Patterns in Wetlands<br><br><b>Secondary Indicators (2 or more Required):</b><br><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches<br><input type="checkbox"/> Water-Stained Leaves<br><input type="checkbox"/> Local Soil Survey Data<br><input type="checkbox"/> FAC-Neutral Test<br><input type="checkbox"/> Other (Explain in Remarks) |
| <b>Field Observations:</b><br>Depth of Surface Water: _____ 0 _____ (in.)<br>Depth to Free Water in Pit: _____ 0 _____ (in.)<br>Depth to Saturated Soil: _____ 0 _____ (in.)   |  |
| Remarks: Wetland hydrology criterion has not been met.   |  |

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineations Manual)

SOILS

|                                   |         |                                 |  |                                |  |
|-----------------------------------|---------|---------------------------------|--|--------------------------------|--|
| Map Unit Name (Series and Phase): |         |                                 |  | Drainage Class:                |  |
| Taxonomy (Subgroup):              |         |                                 | Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No |                                |  |
| <b>Profile Description:</b>       |         |                                 |  |                                |  |
| Depth<br>(inches)                 | Horizon | Matrix Color<br>(Munsell Moist) | Mottle Colors<br>(Munsell Moist)   | Mottle<br>(Abundance/Contrast) | Texture, Concretions,<br>Structure, etc. |
| 0-3                               | A       | 7.5Y 2/1                        | NA   |                                |  |
| 3-9                               | B       | 7.5Y 4/1                        | NA   |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |
|                                   |         |                                 |  |                                |  |

**Hydric Soil Indicators:**

|   |   |
|---|---|
| <input type="checkbox"/> Histosol                               | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon                        | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor                          | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture regime                  | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions                    | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

**Remarks:** Hydric soils criterion not met.

WETLAND DETERMINATION

|   |   |   |
|---|---|---|
| Hydrophytic Vegetation Present?   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Is this Sampling Point Within a Wetland?<br><br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Wetland Hydrology Present?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |   |
| Hydric Soils Present?   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |   |
| <b>Remarks:</b> None of the three wetland criteria have been met, therefore, this area is not considered a wetland. |   |   |

|                 |                          |                     |
|-----------------|--------------------------|---------------------|
| Site: <b>W1</b> | Rater(s): <b>JAVCJRS</b> | Date: <b>8/1/06</b> |
|-----------------|--------------------------|---------------------|

**5 5 Metric 1. Wetland Area (size).**

- max 5 pts. subtotal
- Select one size class and assign score.
- ☒ >50 acres (>20.2ha) (5 pts)
  - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
  - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
  - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
  - ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
  - ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
  - ☐ <0.1 acres (0.04ha) (0 pts)

**7 12 Metric 2. Upland buffers and surrounding land use.**

- max 14 pts. subtotal
- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☒ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
  - ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
  - ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
  - ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
  - ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
  - ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
  - ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

**17.5 29.5 Metric 3. Hydrology.**

- max 30 pts. subtotal
- 3a. Sources of Water. Score all that apply.
- ☐ High pH groundwater (5)
  - ☐ Other groundwater (3)
  - ☒ Precipitation (1)
  - ☒ Seasonal/intermittent surface water (3)
  - ☐ Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- ☐ 100 year floodplain (1)
  - ☐ Between stream/lake and other human use (1)
  - ☒ Part of wetland/upland (e.g. forest), complex (1)
  - ☒ Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- ☐ >0.7 (27.6in) (3)
  - ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
  - ☒ <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- ☒ Semi- to permanently inundated/saturated (4)
  - ☒ Regularly inundated/saturated (3)
  - ☐ Seasonally inundated (2)
  - ☐ Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- ☐ None or none apparent (12)
  - ☒ Recovered (7)
  - ☐ Recovering (3)
  - ☐ Recent or no recovery (1)
- Check all disturbances observed
- ☒ ditch
  - ☒ tile
  - ☐ dike
  - ☐ weir
  - ☐ stormwater input
  - ☐ point source (nonstormwater)
  - ☐ filling/grading
  - ☐ road bed/RR track
  - ☐ dredging
  - ☒ other *man made dam at northern end*

**19 48.5 Metric 4. Habitat Alteration and Development.**

- max 20 pts. subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- ☒ None or none apparent (4)
  - ☐ Recovered (3)
  - ☐ Recovering (2)
  - ☐ Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- ☐ Excellent (7)
  - ☒ Very good (6)
  - ☐ Good (5)
  - ☐ Moderately good (4)
  - ☐ Fair (3)
  - ☐ Poor to fair (2)
  - ☐ Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- ☒ None or none apparent (9)
  - ☐ Recovered (6)
  - ☐ Recovering (3)
  - ☐ Recent or no recovery (1)
- Check all disturbances observed
- ☐ mowing
  - ☐ grazing
  - ☒ clearcutting
  - ☐ selective cutting
  - ☐ woody debris removal
  - ☐ toxic pollutants
  - ☐ shrub/sapling removal
  - ☐ herbaceous/aquatic bed removal
  - ☐ sedimentation
  - ☐ dredging
  - ☒ farming
  - ☒ nutrient enrichment

*→ these disturbances were noted in the surrounding vicinity but do not appear to have affected*

|       |           |       |
|-------|-----------|-------|
| Site: | Rater(s): | Date: |
|-------|-----------|-------|

|             |                    |
|-------------|--------------------|
| 48.5        | subtotal this page |
| 0           | 48.5               |
| max 10 pts. | subtotal           |

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

|             |          |
|-------------|----------|
| 10          | 58.5     |
| max 20 pts. | subtotal |

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☒ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

**6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage**

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/russucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

**Vegetation Community Cover Scale**

|   |   |
|---|---|
| 0 | Absent or comprises <0.1ha (0.247 acres) contiguous area  |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality   |

**Narrative Description of Vegetation Quality**

|      |   |
|------|---|
| low  | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species   |
| mod  | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally no presence of rare threatened or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp                         |

**Mudflat and Open Water Class Quality**

|   |   |
|---|---|
| 0 | Absent <0.1ha (0.247 acres)             |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)   |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more           |

**Microtopography Cover Scale**

|   |  |
|---|--|
| 0 | Absent   |
| 1 | Present very small amounts or if more common of marginal quality                               |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality                                  |

|      |                          |
|------|--------------------------|
| 58.5 | GRAND TOTAL(max 100 pts) |
|------|--------------------------|

|            |          |
|------------|----------|
| 0          | 0        |
| max 6 pts. | subtotal |

### Metric 1. Wetland Area (size).

*Wet 2*  
*Adjacent*

*10*

Select one size class and assign score.

- ☐ >56 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

|             |          |
|-------------|----------|
| 14          | 14       |
| max 14 pts. | subtotal |

### Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☒ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

|             |          |
|-------------|----------|
| 21          | 35       |
| max 30 pts. | subtotal |

### Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☒ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☒ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☒ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☒ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or double check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> fill             | <input type="checkbox"/> filling/grading              |
| <input type="checkbox"/> dike             | <input type="checkbox"/> road bed/RR track            |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other _____                  |

|             |          |
|-------------|----------|
| 18          | 53       |
| max 20 p.s. | subtotal |

### Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☒ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (5)
- ☒ Good (3)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☒ None or none apparent (9)
- ☐ Recovered (5)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> mowing               | <input type="checkbox"/> shrubsapling removal           |
| <input type="checkbox"/> grazing              | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting         | <input type="checkbox"/> sedimentation                  |
| <input type="checkbox"/> selective cutting    | <input type="checkbox"/> dredging                       |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming                        |
| <input type="checkbox"/> toxic pollutants     | <input type="checkbox"/> nutrient enrichment            |

|                          |
|--------------------------|
| 53                       |
| subtotal and grand total |

53

Wet 2

0 53

**Metric 5. Special Wetlands.**

max 10 pts.

subtotal

Check all that apply and score as indicated.

- ☐ Bog (10)  
☐ Fen (10)  
☐ Old growth forest (10)  
☐ Mature forested wetland (5)  
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)  
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)  
☐ Lake Plain Sand Prairies (Oak Openings) (10)  
☐ Refract Wet Prairies (10)  
☐ Known occurrence state/federal threatened or endangered species (10)  
☐ Significant migratory songbird/water fowl habitat or usage (10)  
☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1 54

max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed  
☐ Emergent  
☐ Shrub  
☐ Forest  
☐ Mudflats  
☐ Open water  
☐ Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

- ☐ High (5)  
☐ Moderately high (4)  
☐ Moderate (3)  
☐ Moderately low (2)  
☐ Low (1)  
☒ None (0)

**6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage**

- ☐ Extensive >75% cover (-5)  
☐ Moderate 25-75% cover (-3)  
☐ Sparse 5-25% cover (-1)  
☐ Nearly absent <5% cover (0)  
☒ Absent (1)

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds  
☐ Coarse woody debris >15cm (6in)  
☐ Standing dead >25cm (10in) dbh  
☐ Amphibian breeding pools

**Vegetation Community Cover Scale**

|   |   |
|---|---|
| 0 | Absent or comprises <0.1ha (0.247 acres) contiguous area  |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality   |

**Narrative Description of Vegetation Quality**

|      |   |
|------|---|
| low  | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species   |
| mod  | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally no presence of rare threatened or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp                         |

**Mudflat and Open Water Class Quality**

|   |   |
|---|---|
| 0 | Absent <0.1ha (0.247 acres)             |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)   |
| 2 | Moderate 1 to <4ha (2.47 to 9.58 acres) |
| 3 | High 4ha (9.58 acres) or more           |

**Microtopography Cover Scale**

|   |  |
|---|--|
| 0 | Absent   |
| 1 | Present very small amounts or if more common of marginal quality                               |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality                                  |

54

**GRAND TOTAL(max 100 pts)**

**ATTACHMENT 2**

**OHIO EPA QHEI  
AND  
OHIO EPA HHEI  
DATA SHEETS**



0400 II

HHEI Score (sum of metrics 1, 2, 3):

50

SITE NAME/LOCATION: ADAP SITE NUMBER: 31 RIVER BASIN: DRAINAGE AREA (sq mi) 4.1 mi<sup>2</sup>LENGTH OF STREAM REACH IN: 2.00 ft LONG:        RIVER CODE:        RIVER MILE:       DATE: 7/22/01 SCORER: BEM COMMENTS:       

NOTE: Complete in All Basins On This Form - Refer to "Field Evaluation Manual for Ohio's PIWH Streams" for instructions.

STREAM CHANNEL: NON-NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERYMODIFICATIONS:       

| SUBSTRATE (estimate percent of every type of substrate present. Check ONLY one predominant substrate. TYPE boxes (Max of 32). Add total number of significant substrate types below (max of 8). Final metric score is sum of boxes 4 & 8.) |                             | HHEI Metric Points       |
|--|-----------------------------|--------------------------|
| TYPE   | PERCENT                     | Substrate<br>Metric = 40 |
| TYPE   | PERCENT                     |                          |
| <input type="checkbox"/> Gravel  | <input type="checkbox"/> 0% | A = 8                    |
| <input type="checkbox"/> Sand  | <input type="checkbox"/> 0% |                          |
| <input type="checkbox"/> Cobble  | <input type="checkbox"/> 0% | B = 4                    |
| <input type="checkbox"/> Boulders  | <input type="checkbox"/> 0% |                          |
| <input type="checkbox"/> Organic   | <input type="checkbox"/> 0% | C = 4                    |
| <input type="checkbox"/> Other   | <input type="checkbox"/> 0% |                          |
| <input type="checkbox"/> Total of Percentages of   | <u>40%</u>                  | D = 4                    |
| <input type="checkbox"/> Total of Percentages of   | <u>40%</u>                  |                          |
| TOTAL NUMBER OF SUBSTRATE TYPES: <u>4</u>  |                             | E = 8                    |
| TOTAL NUMBER OF SUBSTRATE TYPES: <u>4</u>  |                             |                          |
| SCORE OF TWO BEST PREDOMINANT SUBSTRATE TYPES: <u>40%</u>  |                             | F = 8                    |
| SCORE OF TWO BEST PREDOMINANT SUBSTRATE TYPES: <u>40%</u>  |                             |                          |
| COMMENTS: <u>      </u>  |                             | G = 8                    |
| COMMENTS: <u>      </u>  |                             |                          |
| COMMENTS: <u>      </u>  |                             | H = 8                    |
| COMMENTS: <u>      </u>  |                             |                          |

THE INFORMATION USED also has been completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

FLOODPLAIN QUALITY

FLOODPLAIN QUALITY

FLOODPLAIN QUALITY

FLOODPLAIN QUALITY

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ADDITIONAL STREAM INFORMATION (This information must also be completed):

ONE PERFORMED? ☐ Yes ☒ No (If Yes, Attach Completed ONE Form)

DOWNSTREAM DESIGNATED USE(S)

WATER NAME:        Distance from Evaluated Stream:       CATCHMENT:        Distance from Evaluated Stream:       EPA NAME:        Distance from Evaluated Stream:       

MAP(S) ATTACH COPIES OF MAP(S) INCLUDING THE STREAM REACH AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Haven OH NACS Soil Map Page:        NACS Soil Map Sheet Order:       County: Meigs Township:       

MISCELLANEOUS

Base Flow Condition (Y/N): Y Date of last precipitation: UNKNOWN Quantity: ??Photograph Information:       Elevated Turbidity (Wap) N Turbidity (ft open): 20%Water samples collected for water chemistry? (Y/N): N (Note lab sample no. in M. and attach as app.) Lab Member:       Field Measures: Temp (°C):        Dissolved Oxygen (mg/l):        pH (6.0-14):        Conductivity (µmhos/cm):       Is the sampling reach representative of the stream (Y/N): Y If not, please explain:       Additional source information of pollution impacts:       

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be submitted):

Include topographic features and other features of interest for site evaluation and a narrative description of the stream's location

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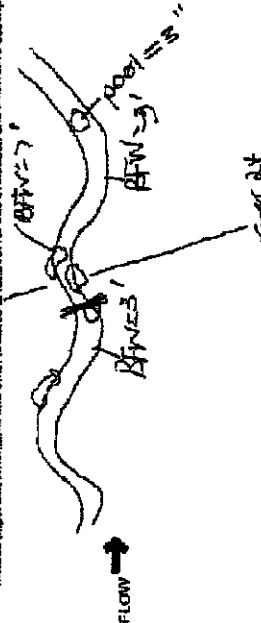
Include topographic features and other features of interest for site evaluation and a narrative description of the stream's location

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Include topographic features and other features of interest for site evaluation and a narrative description of the stream's location



October 24, 2001 Newborn

PH1004 Form Page - 2

PH1004 Form Page - 1

October 24, 2001 Newborn







**ADDITIONAL STREAM INFORMATION (This information must also be completed):**

CHBI PERFORMANCE: ☐ Yes ☒ No CHBI Score: \_\_\_\_\_ (If Yes, Attach Completed CHBI Form)

DOWNSTREAM DESIGNATION (USE): \_\_\_\_\_

WVH Name: \_\_\_\_\_ Distance from Evaluated Stream: \_\_\_\_\_

CWH Name: \_\_\_\_\_ Distance from Evaluated Stream: \_\_\_\_\_

EWH Name: \_\_\_\_\_

MAP/PICTURE ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERHOLE AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Haven OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Sheet Order: \_\_\_\_\_

County: Wayne Township: Chickadee

WATERHOLE INFORMATION

Deep Flow Condition? (Y/N): Y Date of last precipitation: 10/2/00 Capacity: \_\_\_\_\_

Photograph (attach): \_\_\_\_\_

Elevated Turbidity? (Y/N): N Capacity (if open): 10.2%

Water samples collected for water chemistry? (Y/N): N (Note lab sample no. of 14 and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C): \_\_\_\_\_ Dissolved Oxygen (mg/l): \_\_\_\_\_ pH (25°C): \_\_\_\_\_ Conductivity (µmhos/cm): \_\_\_\_\_

Is the sampling reach representative of the stream? (Y/N): Y If not, please explain: \_\_\_\_\_

Additional description of pollution source: \_\_\_\_\_

**BIOTIC EVALUATION**

Performed? (Y/N): Y # of Yes, Record of observations. Voucher collection required. Record of voucher collection must be included with this site # number. Include appropriate field site checks from the Primary Headwater Habitat Assessment Manual.

Fish Observations? (Y/N): N Voucher? (Y/N): \_\_\_\_\_ Salamander Observations? (Y/N): N Voucher? (Y/N): \_\_\_\_\_

Prong or Tadpole Observations? (Y/N): N Voucher? (Y/N): \_\_\_\_\_ Aquatic Insect Observations? (Y/N): N Voucher? (Y/N): \_\_\_\_\_

Comments Regarding biotopes: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include (attach) headwaters and other features of interest for site evaluation and a narrative description of the stream's location

**Ohio EPA Primary Headwater Habitat Evaluation Form**

HHBI Score (sum of metrics 1, 2, 3): 37

SITE NAME/LOCATION: Wayne II RIVER BASIN: SW RIVER CODE: \_\_\_\_\_ RIVER MILE: \_\_\_\_\_

LENGTH OF STREAM REACH (ft): 200 LAT: \_\_\_\_\_ LONG: \_\_\_\_\_

DATE: 10/2/00 RECORDED BY: BOB COMMENTS: \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's Primary Headwaters" for instructions

STREAM CHANNEL: ☒ NONE (NATURAL CHANNEL) ☐ RECOVERING ☐ RESTORED ☐ ARTIFICIAL OR NO RECOVERY

WATER QUALITY: ☒ GOOD ☐ FAIR ☐ POOR ☐ UNKNOWN

**1. SUBSTRATE** (Evaluate presence of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Year at 32). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.)

| TYPE        | PERCENT | YES                      | NO                       |
|-------------|---------|--------------------------|--------------------------|
| GRAVEL      | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| COARSE SAND | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| FINE SAND   | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| SILT        | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| CLAY        | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| ROCK        | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| WOOD        | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| LEAVES      | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| BRUSH       | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |
| OTHER       | 0%      | <input type="checkbox"/> | <input type="checkbox"/> |

Total of Percentages of Substrate Types: 0%

Box A: 0 Box B: 0

**2. SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:**

Box A: 0 Box B: 0

**3. BANK FULL WIDTH** (Measure the maximum bank depth within the 67' width (81 ft) evaluation reach at the line of evaluation. Avoid phragmites from root outcrops or stream bank erosion. Check ONLY one box.)

Box A: 0 Box B: 0

**4. AVERAGE BANKFULL WIDTH** (feet)

Box A: 0 Box B: 0

**5. RIPARIAN ZONE AND FLOODPLAIN QUALITY** (Check ONLY one box)

| RIPARIAN ZONE | FLOODPLAIN QUALITY | SCORES |
|---------------|--------------------|--------|
| Good          | Good               | 0      |
| Fair          | Fair               | 0      |
| Poor          | Poor               | 0      |
| None          | None               | 0      |

**6. SINUOSITY** (Number of bends per 61 m (200 ft) of stream. Check ONLY one box)

Box A: 0 Box B: 0

**7. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**8. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**9. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**10. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**11. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**12. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**13. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**14. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**15. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**16. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**17. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**18. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**19. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**20. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**21. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**22. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**23. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**24. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**25. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**26. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**27. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**28. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**29. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**30. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**31. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**32. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**33. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**34. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**35. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**36. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**37. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**38. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**39. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**40. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**41. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**42. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**43. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**44. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**45. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**46. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**47. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**48. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**49. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**50. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**51. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**52. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**53. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**54. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**55. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**56. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**57. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**58. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**59. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**60. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**61. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**62. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**63. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**64. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**65. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**66. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**67. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**68. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**69. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**70. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**71. STREAM CHANNEL QUALITY** (Check ONLY one box)

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**99. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

**100. STREAM CHANNEL QUALITY** (Check ONLY one box)

Box A: 0 Box B: 0

# Primary Headwater Habitat Evaluation Form

**High Score (sum of matrices 1, 2, 3) :**

Class I

SITE NAME LOCATION PRP DATE NUMBER 58 RIVER BASIN DRAINAGE AREA WY 2 MI  
 LENGTH OF STREAM REACH (ft) 300 LAT. 40° 00' N LONG. 91° 00' W RIVER MILE 9  
 NAME PRP COUPPER COMMENTS DRY  
 NOTE: Complete All Items On This Form - Refer To "Field Evaluation Manual for Ohio's PWSM Systems" for Detailed one  
 NOTE: Complete All Items On This Form - Refer To "Field Evaluation Manual for Ohio's PWSM Systems" for Detailed one  
 MODIFICATIONS: ☒ NOISE / NATURAL CHANNEL, ☐ RECOVERED, ☐ PRESENT OR NO RECOVERY

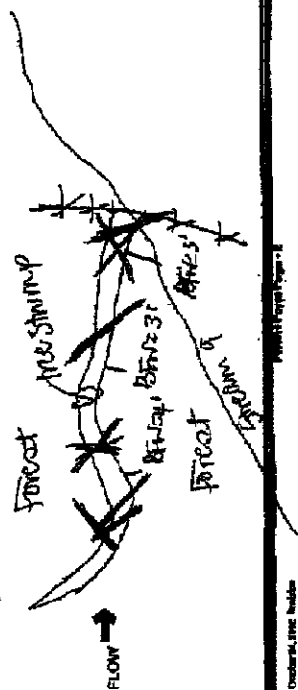
[illegible]

| REPARATION ZONE AND ECOCORRECTION QUALITY |    | ECOCORRECTION QUALITY |    | TOTAL INFORMATION REPORT (TIR) FOR ECOCORRECTION |    |
|---|----|-----------------------|----|--|----|
| REPARATION ZONE AND ECOCORRECTION QUALITY |    | ECOCORRECTION QUALITY |    | TOTAL INFORMATION REPORT (TIR) FOR ECOCORRECTION |    |
| 1   | 1  | 1                     | 1  | 1  | 1  |
| 2   | 2  | 2                     | 2  | 2  | 2  |
| 3   | 3  | 3                     | 3  | 3  | 3  |
| 4   | 4  | 4                     | 4  | 4  | 4  |
| 5   | 5  | 5                     | 5  | 5  | 5  |
| 6   | 6  | 6                     | 6  | 6  | 6  |
| 7   | 7  | 7                     | 7  | 7  | 7  |
| 8   | 8  | 8                     | 8  | 8  | 8  |
| 9   | 9  | 9                     | 9  | 9  | 9  |
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| 49  | 49 | 49                    | 49 | 49   | 49 |
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| 62  | 62 | 62                    | 62 | 62   | 62 |
| 63  | 63 | 63                    | 63 | 63   | 63 |
| 64  | 64 | 64                    | 64 | 64   | 64 |
| 65  | 65 | 65                    | 65 | 65   | 65 |
| 66  | 66 | 66                    | 66 | 66   | 66 |
| 67  | 67 | 67                    | 67 | 67   | 67 |
| 68  | 68 | 68                    | 68 | 68   | 68 |
| 69  | 69 | 69                    | 69 | 69   | 69 |
| 70  | 70 | 70                    | 70 | 70   | 70 |
| 71  | 71 | 71                    | 71 | 71   | 71 |
| 72  | 72 | 72                    | 72 | 72   | 72 |
| 73  | 73 | 73                    | 73 | 73</   |    |

**SIMPLICITY** (Number of components in 95% CI of observed)  
none ☐ 0.5 ☒ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >2  
**ADVERSE DRUG EFFECTS**  
cautionary ☐ No to Moderate ☐ Moderate to Severe ☒ Severe per se no less

October 24, 2008 Friday

**REMARKS:** ALSO RECALCULATE DECOMPOSITION OF STRESSORS (BACH) (THIS NEEDS BE COMPLETED);



**Department of Health and Human Services**











ATTACHMENT D  
Page 37 of 66

**ADDITIONAL STREAM INFORMATION (Use Information Box Also as Completed)**

ONE/PRI/PERFORMED? ☐ Yes ☒ No ONEI Score \_\_\_\_\_ (If Yes, Attach Completed ONEI Form)

COMA/STREAM DESIGNATED USE(S) \_\_\_\_\_

☐ WWF Name \_\_\_\_\_

Distance from Evaluated Stream \_\_\_\_\_

☐ CHW Name \_\_\_\_\_

Distance from Evaluated Stream \_\_\_\_\_

☐ EWI Name \_\_\_\_\_

Distance from Evaluated Stream \_\_\_\_\_

MAPS: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERWAYS AREA, CLEARLY MARK THE SITE LOCATION

UECR Coordinates Name New Haven OH NRCIS Site Map Page \_\_\_\_\_ NRCIS S-W Map Sheet Code \_\_\_\_\_

County: Niles Township / CNV \_\_\_\_\_

**MISC/LINQUOUS**

Rise Flow Condition? (Y/N) Y Date of last precipitation: ? Quantity: \_\_\_\_\_

Photograph information: Y \_\_\_\_\_

Elevated Turbidity? (Y/N) N Runoff (% open): 20% \_\_\_\_\_

When samples collected for water chemistry? (Y/N) N (Note top section no. at rd. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (dLU) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N)? X If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOLOG EVALUATION**

Periphyton? (Y/N) Y (If "Yes," Record all observations. Voucher collection optional. SCITE: All voucher samples must be labeled with the site ID number. Include appropriate field data sheets like the Primary Freshwater Habitat Assessment Manual)

Fish Observations? (Y/N) N Voucher? (Y/N) N Submersible Observer? (Y/N) N Voucher? (Y/N) \_\_\_\_\_

Frags or Toxigenic Chemicals? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Storage: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (THIS MUST BE COMPLETED)**

Include important landmarks and major features of interest for site evaluation and a narrative description of the stream's location

October 4, 2008 Revision

Project Form Page - 1

ADDITIONAL STREAM INFORMATION (This information must also be completed):

OTHER INFORMATION: ☐ Yes ☒ No CHECK SCORE: \_\_\_\_\_ IF Yes, Attach Completed Check Form)

DOWNSTREAM DESIGNATED USE(S): \_\_\_\_\_

WATER NAME: \_\_\_\_\_

CATCHMENT NAME: \_\_\_\_\_

WATER TYPE: \_\_\_\_\_

WATERING ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA, CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: NEW HARRIS OH NCEC Soil Map Page: \_\_\_\_\_ NCEC Soil Map Sheet Code: \_\_\_\_\_

County: JOHNS Township: DIKE

MISCELLANEOUS

Base Flow Condition? (Y/N): X Date of last precipitation: UNKNOWN Quantity: 2

Physical Characteristics (Y/N): X Turbidity (N open): \_\_\_\_\_

Elevated Turbidity? (Y/N): N Turbidity (N open): 57

Where sample collected for water chemistry? (Y/N): N (Note all sample no. or lot and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C): \_\_\_\_\_ Dissolved Oxygen (mg/l): \_\_\_\_\_ pH (±0.1): \_\_\_\_\_ Conductivity (µmhos/cm): \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N)? X If not, please explain: \_\_\_\_\_

Add one commensurate description of pollution impacts: \_\_\_\_\_

SOURCE EVALUATION

POTENTIAL? (Y/N): X If Yes, Ranked as a Subcategory: \_\_\_\_\_ Number of activities reported: \_\_\_\_\_ Notes on whether sample used to detect with the site ID number: \_\_\_\_\_ Include appropriate field site checks from the Primary Indicator: (Add all appropriate checks)

Fish Observance? (Y/N): N Voucher? (Y/N): \_\_\_\_\_ Submergence Observance? (Y/N): X Voucher? (Y/N): \_\_\_\_\_

Frogs or Toads as Observance? (Y/N): N Voucher? (Y/N): \_\_\_\_\_ Aquatic Macroinvertebrates (Diversity) (Y/N): N Voucher? (Y/N): \_\_\_\_\_

Other checks regarding Biology: \_\_\_\_\_

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (THIS MUST be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

BTW=3' AOT=4" POT=25"  
BTW=4"  
AOT=4"  
BTW=10"

9/20/07 12:00 PM Page 2























Instructions for specific use alternatives cover mounds. Each cover type should include a summary of the benefits of the cover type and a list of the types of mounds for which the cover type is most appropriate. The following are the types of mounds that are most commonly used in the United States:

—Serran + northern two-lined salamanders (larvae) identified in stream.


$$\text{MOH} \longrightarrow$$
[illegible]

**Chiefta** Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 63

with

[illegible]

U.S. VINTAGE

Class II

HHEL Score (sum of metrics 1, 2, 3):

52

SITE NAME/LOCATION: AKR 1000 - 1000 - 1000 - 1000SITE NUMBER: 533 RIVER BASIN: AKR 1000 RIVER CODE: AKR 1000 RIVER MILE: AKR 1000DATE: 8/1/06 SCORER: JAV COMMENTS: 

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Stream" for instructions

STREAM CHANNEL: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECENT OR NO RECOVERYMODIFICATIONS: 

1. SUBSTRATE (Calculate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 2). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

| TYPE   | PERCENT                  | TYPE   | PERCENT                  |
|--|--------------------------|--|--------------------------|
| <input type="checkbox"/> BLUR SLABS (16 pts)         | <input type="checkbox"/> | <input type="checkbox"/> SLT (16 pts)                    | <input type="checkbox"/> |
| <input type="checkbox"/> BOULDER (2-256 mm) (16 pts) | <input type="checkbox"/> | <input type="checkbox"/> LEAF PHYLLOPODY DEBRIS (16 pts) | <input type="checkbox"/> |
| <input type="checkbox"/> GRAVEL (16-256 mm) (16 pts) | <input type="checkbox"/> | <input type="checkbox"/> FINE DETRITUS (16 pts)          | <input type="checkbox"/> |
| <input type="checkbox"/> COBBLE (16-256 mm) (16 pts) | <input type="checkbox"/> | <input type="checkbox"/> CLAY or SAND/PAN (16 pts)       | <input type="checkbox"/> |
| <input type="checkbox"/> SAND (16 mm) (16 pts)       | <input type="checkbox"/> | <input type="checkbox"/> MUCK (16 pts)                   | <input type="checkbox"/> |
| <input type="checkbox"/> ARTIFICIAL (16 pts)         | <input type="checkbox"/> | <input type="checkbox"/>                                 | <input type="checkbox"/> |

TOTAL NUMBER OF SUBSTRATE TYPES: 3

2. MAXIMUM POOL DEPTH (Centimeters): 18

3. BANK FULL WIDTH (measured as the average of 2-4 measurements) (Check ONLY one box):

|   |                          |
|---|--------------------------|
| <input type="checkbox"/> < 1.0 m (3'3" - 4'7") (15 pts)       | <input type="checkbox"/> |
| <input type="checkbox"/> 1.0 m - 1.5 m (3'3" - 4'7") (15 pts) | <input type="checkbox"/> |
| <input type="checkbox"/> 1.5 m - 3.0 m (4'7" - 9'8") (20 pts) | <input type="checkbox"/> |
| <input type="checkbox"/> > 3.0 m (9'8" - 10'0") (20 pts)      | <input type="checkbox"/> |

4. AVERAGE BANKFULL WIDTH (meters): 1.8

5. COMMENTS:

6. DDWHE TYPE:

7. SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 3

8. SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 4

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1. RIVER BASIN AND FLOODPLAIN QUALITY: AKR 1000

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50. FLOODPLAIN QUALITY: AKR 1000

51. FLOODPLAIN QUALITY: AKR 1000

52. FLOODPLAIN QUALITY: AKR 1000

53. FLOODPLAIN QUALITY: AKR 1000

54. FLOODPLAIN QUALITY: AKR 1000

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57. FLOODPLAIN QUALITY: AKR 1000

58. FLOODPLAIN QUALITY: AKR 1000

59. FLOODPLAIN QUALITY: AKR 1000

60. FLOODPLAIN QUALITY: AKR 1000

61. FLOODPLAIN QUALITY: AKR 1000

62. FLOODPLAIN QUALITY: AKR 1000

63. FLOODPLAIN QUALITY: AKR 1000

64. FLOODPLAIN QUALITY: AKR 1000

65. FLOODPLAIN QUALITY: AKR 1000

66. FLOODPLAIN QUALITY: AKR 1000

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69. FLOODPLAIN QUALITY: AKR 1000

70. FLOODPLAIN QUALITY: AKR 1000

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72. FLOODPLAIN QUALITY: AKR 1000

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80. FLOODPLAIN QUALITY: AKR 1000

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82. FLOODPLAIN QUALITY: AKR 1000

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89. FLOODPLAIN QUALITY: AKR 1000

90. FLOODPLAIN QUALITY: AKR 1000

91. FLOODPLAIN QUALITY: AKR 1000

92. FLOODPLAIN QUALITY: AKR 1000

93. FLOODPLAIN QUALITY: AKR 1000

94. FLOODPLAIN QUALITY: AKR 1000

95. FLOODPLAIN QUALITY: AKR 1000

96. FLOODPLAIN QUALITY: AKR 1000

97. FLOODPLAIN QUALITY: AKR 1000

98. FLOODPLAIN QUALITY: AKR 1000

99. FLOODPLAIN QUALITY: AKR 1000

100. FLOODPLAIN QUALITY: AKR 1000

## ADDITIONAL STREAM INFORMATION (This Information Must Also Be Completed)

OILS PERFORMED: ☒ YES ☐ NO OIL SCORE: 52 (If Yes, Attach Completed OILS Form)

DO NOT RETREAT (DESIGNATED USER)

☐ WITH ROADS:  Distance from Exposed Stream☐ CULVERT:  Distance from Exposed Stream☐ ERM:  Distance from Exposed Stream

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERFED AREA, CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name:  NRCIS Soil Map Page:  NRCIS Soil Map Stream Order: County:  Township/City: 

## MISCELLANEOUS

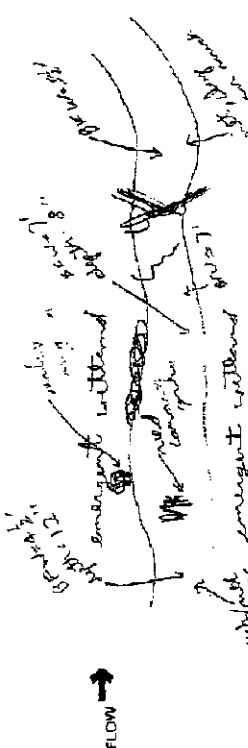
State Flow Conditions (VNR):  Date of last precipitation: unknown Country: unknownPhotograph Information: photos 14-16Estimated Turbidity (VNR): N Conductivity (µS/cm): 908Water samples collected for water chemistry? (VNR): N (No) list sample no. at 1d and attach results (Lab Number): Field Measures: Temp (°C):  Dissolved Oxygen (mg/l):  pH (SU):  Conductivity (µS/cm): If the sampling reach represents the site location (VNR):  If not, please explain: Additional comments (Description of potential impacts): 

## BIOTIC EVALUATION

Performed? (VNR): N (If Yes, attach observations. Voucher collection optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field and sheet sheets from the primary Headwater Habitat Assessment Manual)Fish Observations? (VNR):  Voucher? (VNR):  Substrate Observations? (VNR):  Voucher? (VNR): Frog or Tadpole Observations? (VNR):  Voucher? (VNR):  Aquatic Invertebrate Observations? (VNR):  Voucher? (VNR): Comments Regarding Biotics: 

## DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (THIS MUST BE COMPLETED)

Include Impacts/Landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Ohio EPA, 1998 Revision

PWH Form Page - 1

October 21, 1998 Revision



535



# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

18.5

SITE NAME/LOCATION OHIO MT. SOO

SITE NUMBER \_\_\_\_\_ RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_

LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE 4/30/06 SCORER B. O'H COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: AREA HAS BEEN LOGGED BUT DOES NOT APPEAR TO HAVE ALTERED STREAM

| 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.   |         |  |         | HHEI Metric Points<br>Substrate<br>Max = 40                    |
|---|---------|--|---------|--|
| TYPE  | PERCENT | TYPE   | PERCENT |  |
| <input type="checkbox"/> BLDG SLABS (16 pts)  |         | <input type="checkbox"/> SILT (3 pts)                              |         | <div style="border: 1px solid black; padding: 5px;">13.5</div> |
| <input checked="" type="checkbox"/> BOULDER (>256 mm) (16 pts)  | 5       | <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS (3 pts) | 10      |  |
| <input type="checkbox"/> BEDROCK (16 pts)   |         | <input type="checkbox"/> FINE DETRITUS (3 pts)                     |         |  |
| <input checked="" type="checkbox"/> COBBLE (65-256 mm) (12 pts)   | 10      | <input checked="" type="checkbox"/> CLAY or HARDPAN (0 pts)        | 45      |  |
| <input checked="" type="checkbox"/> GRAVEL (2-64 mm) (8 pts)  | 15      | <input type="checkbox"/> MUCK (0 pts)                              |         |  |
| <input checked="" type="checkbox"/> SAND (<2 mm) (8 pts)  | 15      | <input type="checkbox"/> ARTIFICIAL (3 pts)                        |         |  |
| Total of Percentages of Bldg Slabs, Boulder, Cobble, Bedrock <u>15</u>  |         | (A) <u>7.5</u>   |         |  |
| SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  |         | TOTAL NUMBER OF SUBSTRATE TYPES: (B) <u>6</u>                      |         |  |
| 2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  |         |  |         | HHEI Metric Points<br>Pool Depth<br>Max = 30                   |
| <input type="checkbox"/> > 30 centimeters (20 pts) <input type="checkbox"/> > 5 cm - 10 cm (16 pts)<br><input type="checkbox"/> > 22.5 - 30 cm (16 pts) <input type="checkbox"/> < 5 cm (5 pts)<br><input checked="" type="checkbox"/> > 10 - 22.5 cm (25 pts) <input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL (0 pts)  |         |  |         |  |
| COMMENTS <u>NO WATER</u> MAXIMUM POOL DEPTH (centimeters): <u>0</u>   |         |  |         | HHEI Metric Points<br>Bankfull Width<br>Max = 30               |
| 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  |         |  |         |  |
| <input type="checkbox"/> > 4.0 meters (> 13') (30 pts) <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 6") (15 pts)<br><input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') (25 pts) <input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") (15 pts)<br><input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 7" - 9' 8") (20 pts) |         |  |         |  |
| COMMENTS <u>FAIRLY STEEP SLOPING INTO POOL</u> AVERAGE BANKFULL WIDTH (meters): <u>5</u>  |         |  |         |  |

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) as looking downstream)

| RIPARIAN WIDTH                                 |  | FLOODPLAIN QUALITY   |   |
|--|--|--|---|
| L  | R  | L  | R |
| <input type="checkbox"/> Wide >10m             | <input type="checkbox"/> Mature Forest, Wetland              | <input type="checkbox"/> Conservation Tillage              |   |
| <input type="checkbox"/> Moderate 5-10m        | <input type="checkbox"/> Immature Forest, Shrub or Old Field | <input type="checkbox"/> Urban or Industrial               |   |
| <input checked="" type="checkbox"/> Narrow <5m | <input type="checkbox"/> Residential, Park, New Field        | <input type="checkbox"/> Open Pasture, Row Crop            |   |
| <input type="checkbox"/> None                  | <input type="checkbox"/> Fenced Pasture                      | <input checked="" type="checkbox"/> Mining or Construction |   |

COMMENTS AREA HAS BEEN LOGGED

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☐ Stream Flowing ☒ Moist Channel, isolated pools, no flow (intermittent)

☐ Subsurface flow with isolated pools (interstitial) ☐ Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None ☒ 1.0 ☐ 2.0 ☐ 3.0

☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (<0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☒ Severe (>10 ft/100 ft)

**ADDITIONAL STREAM INFORMATION (This information must also be completed):**

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_

County: \_\_\_\_\_ Township / City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): N Date of last precipitation: UNK. Quantity: \_\_\_\_\_

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 95%

Were samples collected for water chemistry? (Y/N): \_\_\_\_\_ (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) \_\_\_\_\_ If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOLOGIC EVALUATION**

Performed? (Y/N): \_\_\_\_\_ (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_  
 Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

32

SITE NAME/LOCATION OLYON MT. SPBSITE NUMBER \_\_\_\_\_ RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_

LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE 04/30/08 SCORER BEN OTTO COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS:

THE SURROUNDING AREA HAS BEEN DEFORESTED / NOT APPROPRIATELY ALTERED

| 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  |         |  |   | HHEI Metric Points<br>Substrate<br>Max = 40                                      |
|--|---------|--|---|--|
| TYPE   | PERCENT | TYPE   | PERCENT   |  |
| <input type="checkbox"/> BLDR SLABS (16 pts)   |         | <input type="checkbox"/> SILT (3 pts)  |   | <div style="border: 1px solid black; padding: 5px; text-align: center;">27</div> |
| <input type="checkbox"/> BOULDER (>256 mm) (18 pts)  | 10      | <input type="checkbox"/> LEAF PACK/WOODY DEBRIS (3 pts)                              | 10  |  |
| <input type="checkbox"/> BEDROCK (16 pts)  | 10      | <input type="checkbox"/> FINE DETRITUS (3 pts)                                       |   |  |
| <input type="checkbox"/> COBBLE (65-256 mm) (12 pts)   | 30      | <input type="checkbox"/> CLAY or HARDPAN (6 pts)                                     |   |  |
| <input type="checkbox"/> GRAVEL (2-64 mm) (9 pts)  | 20      | <input type="checkbox"/> MUCK (0 pts)  |   |  |
| <input type="checkbox"/> SAND (<2 mm) (6 pts)  | 15      | <input type="checkbox"/> ARTIFICIAL (3 pts)  |   |  |
| Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>45</u>   |         | (A) <div style="border: 1px solid black; padding: 2px; text-align: center;">21</div> | (B) <div style="border: 1px solid black; padding: 2px; text-align: center;">6</div> |  |
| SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:   |         | TOTAL NUMBER OF SUBSTRATE TYPES:   |   |  |
| 2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):   |         |  |   | Pool Depth<br>Max = 30   |
| <input type="checkbox"/> > 30 centimeters (20 pts) <input type="checkbox"/> > 5 cm - 10 cm (15 pts)<br><input type="checkbox"/> > 22.5 - 30 cm (30 pts) <input type="checkbox"/> < 5 cm (5 pts)<br><input type="checkbox"/> > 10 - 22.5 cm (25 pts) <input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL (0 pts)            |         |  |   |  |
| COMMENTS <u>FAIRLY STEEP GRADE</u> MAXIMUM POOL DEPTH (centimeters): <div style="border: 1px solid black; padding: 2px; text-align: center;">0</div>   |         |  |   | Bankfull Width<br>Max=30   |
| 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):   |         |  |   |  |
| <input type="checkbox"/> > 4.0 meters (> 13') (30 pts) <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") (15 pts)<br><input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') (25 pts) <input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") (5 pts)<br><input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 8") (20 pts) |         |  |   |  |
| COMMENTS <u>3'</u> AVERAGE BANKFULL WIDTH (meters): <div style="border: 1px solid black; padding: 2px; text-align: center;">5</div>  |         |  |   |  |

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) as looking downstream)

| RIPARIAN WIDTH (Per Bank)           |                                     | FLOODPLAIN QUALITY (Most Predominant per Bank) |                          |                                     |                                     |
|-------------------------------------|-------------------------------------|--|--------------------------|-------------------------------------|-------------------------------------|
| L                                   | R                                   | L  | R                        | L                                   | R                                   |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>                       | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>                       | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>                       | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| None                                |                                     | Fenced Pasture                                 |                          | Mining or Construction              |                                     |
| COMMENTS <u>DEFORESTED AREA</u>     |                                     |  |                          |                                     |                                     |

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☐ Stream Flowing ☐ Moist Channel, isolated pools, no flow (Intermittent)

☐ Subsurface flow with isolated pools (Intermittent) ☒ Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None ☒ 1.0 ☐ 2.0 ☐ 3.0

☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 N/100 ft) ☐ Flat to Moderate ☐ Moderate (2 N/100 ft) ☒ Moderate to Severe ☐ Severe (10 N/100 ft)

**ADDITIONAL STREAM INFORMATION (This information must also be completed):**

GHEI PERFORMED? - ☐ Yes ☒ No GHEI Score \_\_\_\_\_ (If Yes, Attach Completed GHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_

County: \_\_\_\_\_ Township / City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 1/2/02 Quantity: \_\_\_\_\_

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): \_\_\_\_\_

Were samples collected for water chemistry? (Y/N): \_\_\_\_\_ (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream? (Y/N): \_\_\_\_\_ If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

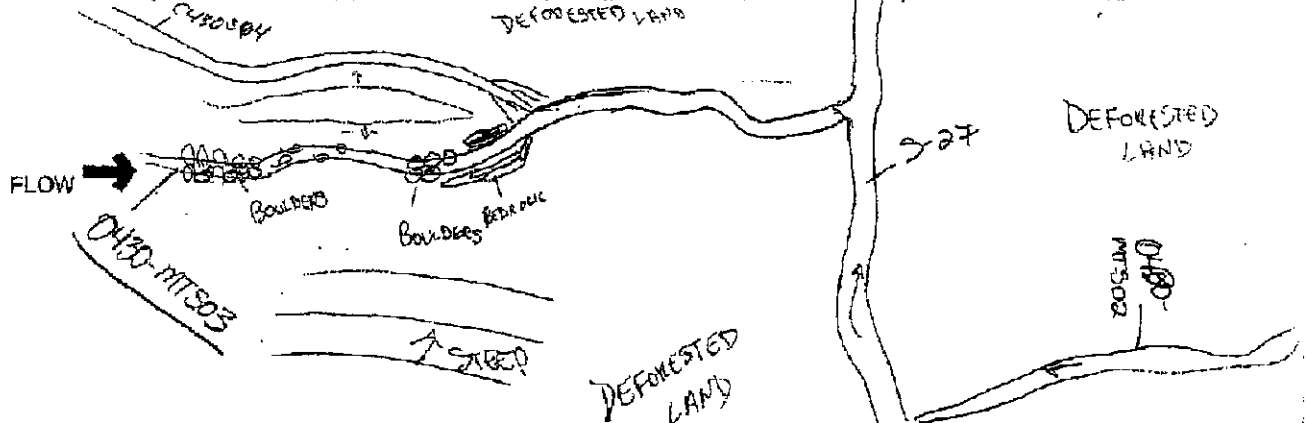
Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



538

# OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

23

SITE NAME/LOCATION 0430-561a

SITE NUMBER \_\_\_\_\_ RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_

LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE 04/30/08 SCORER B.OTTO COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
MODIFICATIONS:

| 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. |         |   |              | HHEI Metric Points       |
|---|---------|---|--------------|--------------------------|
| TYPE  | PERCENT | TYPE  | PERCENT      |                          |
| <input type="checkbox"/> BLDR SLABS [16 pts]  | _____   | <input type="checkbox"/> SILT [3 pts]                                 | _____        | Substrate<br>Max = 40    |
| <input type="checkbox"/> BOULDER (>256 mm) [16 pts]   | _____   | <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]               | _____        |                          |
| <input type="checkbox"/> BEDROCK [16 pts]   | _____   | <input type="checkbox"/> FINE DETRITUS [3 pts]                        | _____        | A + B                    |
| <input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]   | 35      | <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pts]           | 35           |                          |
| <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]   | 15      | <input type="checkbox"/> MUCK [0 pts]                                 | _____        | Pool Depth<br>Max = 30   |
| <input checked="" type="checkbox"/> SAND (<2 mm) [8 pts]  | 5       | <input type="checkbox"/> ARTIFICIAL [3 pts]                           | _____        |                          |
| Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>35</u>  |         | (A) <u>12</u>   | (B) <u>6</u> | Bankfull Width<br>Max=30 |
| SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  |         | TOTAL NUMBER OF SUBSTRATE TYPES:                                      |              |                          |
| 2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):                            |         |   |              |                          |
| <input type="checkbox"/> > 30 centimeters [20 pts]  |         | <input type="checkbox"/> > 5 cm - 10 cm [15 pts]                      |              | 0                        |
| <input type="checkbox"/> > 22.5 - 30 cm [30 pts]  |         | <input type="checkbox"/> < 5 cm [5 pts]                               |              |                          |
| <input type="checkbox"/> > 10 - 22.5 cm [25 pts]  |         | <input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts] |              |                          |
| COMMENTS _____ MAXIMUM POOL DEPTH (centimeters):  |         |   |              |                          |
| 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  |         |   |              |                          |
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts]  |         | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 6") [15 pts]   |              | 5                        |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   |         | <input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]         |              |                          |
| <input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   |         |   |              |                          |
| COMMENTS _____ AVERAGE BANKFULL WIDTH (meters):   |         |   |              |                          |

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) as looking downstream)

| RIPARIAN ZONE                                      |  | FLOODPLAIN QUALITY   |  |
|--|--|--|--|
| L  | R  | L  | R  |
| <input type="checkbox"/> Wide >10m                 | <input checked="" type="checkbox"/> Moderate 5-10m | <input checked="" type="checkbox"/> Mature Forest, Wetland   | <input type="checkbox"/> Conservation Tillage              |
| <input checked="" type="checkbox"/> Moderate 5-10m | <input type="checkbox"/> Narrow <5m                | <input type="checkbox"/> Immature Forest, Shrub or Old Field | <input type="checkbox"/> Urban or Industrial               |
| <input type="checkbox"/> None                      | <input type="checkbox"/> Fenced Pasture            | <input type="checkbox"/> Residential, Park, New Field        | <input type="checkbox"/> Open Pasture, Row Crop            |
|  |  | <input type="checkbox"/> Fenced Pasture                      | <input checked="" type="checkbox"/> Mining or Construction |

COMMENTS \_\_\_\_\_

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

|   |  |
|---|--|
| <input type="checkbox"/> Stream Flowing                                     | <input type="checkbox"/> Moist Channel, isolated pools, no flow (intermittent) |
| <input type="checkbox"/> Subsurface flow with isolated pools (interstitial) | <input checked="" type="checkbox"/> Dry channel, no water (ephemeral)          |

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

|                               |   |                              |                              |
|-------------------------------|---|------------------------------|------------------------------|
| <input type="checkbox"/> None | <input checked="" type="checkbox"/> 1.0 | <input type="checkbox"/> 2.0 | <input type="checkbox"/> 3.0 |
| <input type="checkbox"/> 0.6  | <input type="checkbox"/> 1.5            | <input type="checkbox"/> 2.5 | <input type="checkbox"/> >3  |

STREAM GRADIENT ESTIMATE

|   |   |   |   |   |
|---|---|---|---|---|
| <input type="checkbox"/> Flat (0.5 ft/100 ft) | <input type="checkbox"/> Flat to Moderate | <input type="checkbox"/> Moderate (2 ft/100 ft) | <input type="checkbox"/> Moderate to Severe | <input checked="" type="checkbox"/> Severe (10 ft/100 ft) |
|---|---|---|---|---|

**ADDITIONAL STREAM INFORMATION (This information must also be completed):**

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_

County: \_\_\_\_\_ Township / City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: UNKNOWN Quantity: \_\_\_\_\_

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 10

Were samples collected for water chemistry? (Y/N): \_\_\_\_\_ (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) \_\_\_\_\_ If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOLOGIC EVALUATION**

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

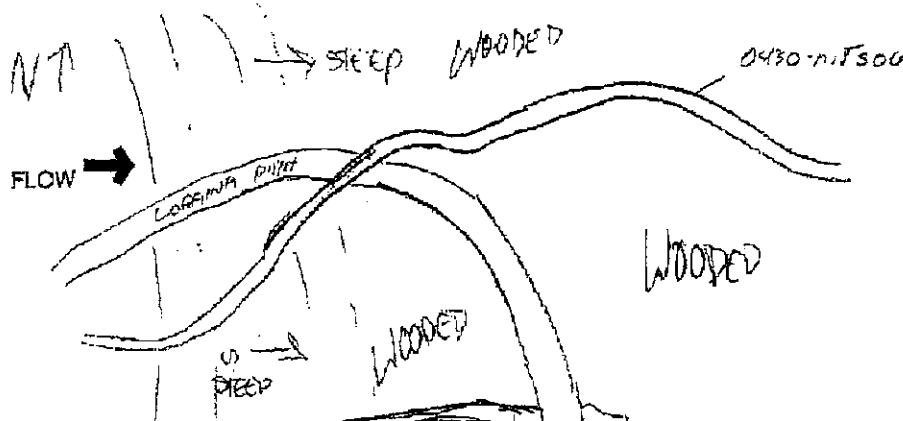
Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

44

SITE NAME/LOCATION AMP-01 Alternate Transmission Line

SITE NUMBER 539 RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_

LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE 2-July-2008 SCORER McThomson COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS:

| 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY (w/ predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. |   |  |           | HHEI Metric Points   |
|---|---|--|-----------|--|
| TYPE  | PERCENT   | TYPE   | PERCENT   | Substrate<br>Max = 40<br><br><div style="border: 1px solid black; padding: 5px; display: inline-block;">14</div>   |
| <input type="checkbox"/> BLDR SLABS [16 pts]  | _____   | <input checked="" type="checkbox"/> SILT [3 pt]                    | <u>10</u> |  |
| <input type="checkbox"/> BOULDER (>256 mm) [16 pts]   | _____   | <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts] | <u>5</u>  |  |
| <input type="checkbox"/> BEDROCK [16 pt]  | _____   | <input type="checkbox"/> FINE DETRITUS [3 pts]                     | _____     |  |
| <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]  | _____   | <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]         | <u>60</u> |  |
| <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]  | <u>20</u>   | <input type="checkbox"/> MUCK [0 pts]                              | _____     |  |
| <input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]  | <u>15</u>   | <input type="checkbox"/> ARTIFICIAL [3 pts]                        | _____     |  |
| Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>0</u> (A) <u>9</u>  |   | (B) <u>5</u>   |           |  |
| SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  |   | TOTAL NUMBER OF SUBSTRATE TYPES:                                   |           |  |
|   |   |  |           |  |
| 2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):                            |   |  |           | HHEI Metric Points   |
| <input type="checkbox"/> > 30 centimeters [20 pts]  | <input type="checkbox"/> > 5 cm - 10 cm [15 pts]                    |  |           | Pool Depth<br>Max = 30<br><br><div style="border: 1px solid black; padding: 5px; display: inline-block;">25</div>  |
| <input checked="" type="checkbox"/> > 22.5 - 30 cm [30 pts]   | <input type="checkbox"/> < 5 cm [5 pts]                             |  |           |  |
| <input type="checkbox"/> > 10 - 22.5 cm [25 pts]  | <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]          |  |           |  |
| COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): <u>6"</u>  |   |  |           |  |
| 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  |   |  |           | HHEI Metric Points   |
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts]  | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |  |           | Bankfull Width<br>Max=30<br><br><div style="border: 1px solid black; padding: 5px; display: inline-block;">5</div> |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   | <input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 8") [5 pts]       |  |           |  |
| <input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   |   |  |           |  |
| COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): <u>3'</u>   |   |  |           |  |

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) as looking downstream)

| RIPARIAN WIDTH   |           | FLOODPLAIN QUALITY  |                        |
|--|-----------|---|------------------------|
| <input checked="" type="checkbox"/> L <input checked="" type="checkbox"/> R (Per Bank) | Wide >10m | <input type="checkbox"/> L <input type="checkbox"/> R (Most Predominant per Bank) | Conservation Tillage   |
| <input type="checkbox"/> Moderate 5-10m  |           | <input checked="" type="checkbox"/> Mature Forest                                 | Urban or Industrial    |
| <input type="checkbox"/> Narrow <5m  |           | <input checked="" type="checkbox"/> Immature Forest                               | Open Pasture, Row Crop |
| <input type="checkbox"/> None  |           | <input type="checkbox"/> Residential, Park, New Field                             | Mining or Construction |
| COMMENTS _____   |           |   |                        |

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☒ Stream Flowing ☐ Moist Channel, isolated pools, no flow (Intermittent)

☐ Subsurface flow with isolated pools (Interstitial) ☐ Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None ☒ 1.0 ☐ 2.0 ☐ 3.0

☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☒ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

**ADDITIONAL STREAM INFORMATION (This information must also be completed):**QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_

County: Meigs Township / City: \_\_\_\_\_**MISCELLANEOUS**Base Flow Conditions? (Y/N): unsure Date of last precipitation: unknown Quantity: \_\_\_\_\_Photograph information: 2 photosElevated Turbidity? (Y/N): N Canopy (% open): 5Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream? (Y/N) \_\_\_\_\_ If not, please explain: \_\_\_\_\_

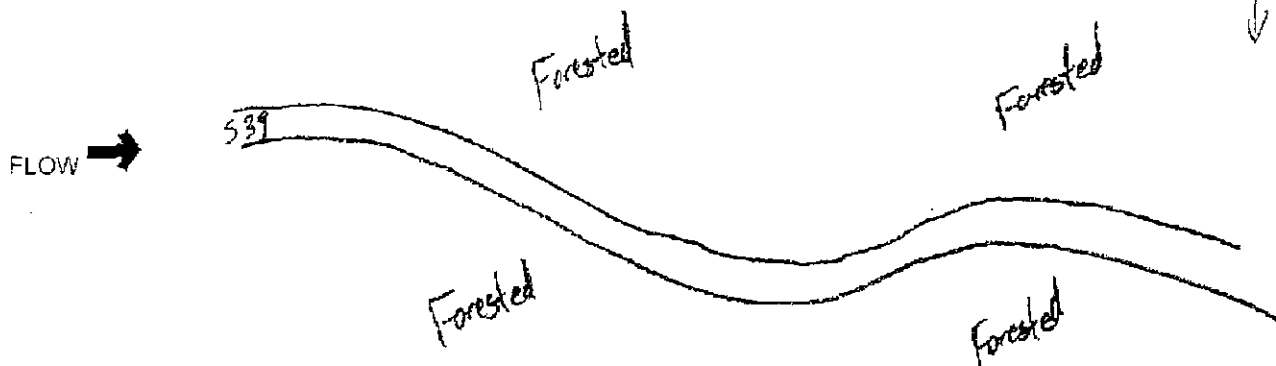
Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOLOGIC EVALUATION**Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)Fish Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_  
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





# OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

28

SITE NAME/LOCATION AMP Ohio Alternate Transmission Line

SITE NUMBER 540 RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_

LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE 2 July 2008 SCORER N. Thayer COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
MODIFICATIONS:

| 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. |   |  |              | HHEI Metric Points                          |
|---|---|--|--------------|---|
| TYPE  | PERCENT   | TYPE   | PERCENT      | Substrate<br>Max = 40<br><div>8</div>       |
| <input type="checkbox"/> BLDR SLABS [16 pts]  | _____   | <input checked="" type="checkbox"/> SILT [3 pt]                    | 10           |   |
| <input type="checkbox"/> BOULDER (>256 mm) [16 pts]   | _____   | <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts] | 20           |   |
| <input type="checkbox"/> BEDROCK [16 pt]  | _____   | <input type="checkbox"/> FINE DETRITUS [3 pts]                     | _____        |   |
| <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]  | _____   | <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]         | 55           |   |
| <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]  | 10  | <input type="checkbox"/> MUCK [0 pts]                              | _____        |   |
| <input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]  | 5   | <input type="checkbox"/> ARTIFICIAL [3 pts]                        | _____        |   |
| Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>0</u>   |   | (A) <u>3</u>   | (B) <u>5</u> |   |
| SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  |   |  |              | TOTAL NUMBER OF SUBSTRATE TYPES:            |
| 2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):                            |   |  |              | Pool Depth<br>Max = 30                      |
| <input type="checkbox"/> > 30 centimeters [20 pts]  | <input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]         |  |              | 15  |
| <input type="checkbox"/> > 22.5 - 30 cm [30 pts]  | <input type="checkbox"/> < 5 cm [5 pts]                             |  |              |   |
| <input type="checkbox"/> > 10 - 22.5 cm [25 pts]  | <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]          |  |              |   |
| COMMENTS _____  |   |  |              | MAXIMUM POOL DEPTH (centimeters): <u>2"</u> |
| 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  |   |  |              | Bankfull<br>Width<br>Max=30                 |
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts]  | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |  |              | 5   |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   | <input checked="" type="checkbox"/> < 1.0 m (< 3' 3") [5 pts]       |  |              |   |
| <input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]   |   |  |              |   |
| COMMENTS _____  |   |  |              | AVERAGE BANKFULL WIDTH (meters): <u>2'</u>  |

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) as looking downstream)

| RIPARIAN WIDTH  |            | FLOODPLAIN QUALITY  |                             | CONSERVATION TILLAGE                                  |  |
|---|------------|---|-----------------------------|---|--|
| <input checked="" type="checkbox"/> L <input checked="" type="checkbox"/> R | (Per Bank) | <input checked="" type="checkbox"/> L <input checked="" type="checkbox"/> R | (Most Predominant per Bank) | <input type="checkbox"/> L <input type="checkbox"/> R |  |
| <input checked="" type="checkbox"/> Wide >10m                               |            | <input checked="" type="checkbox"/> Mature Forest, Wetland                  |                             | <input type="checkbox"/> Conservation Tillage         |  |
| <input type="checkbox"/> Moderate 5-10m                                     |            | <input type="checkbox"/> Immature Forest, Shrub or Old Field                |                             | <input type="checkbox"/> Urban or Industrial          |  |
| <input type="checkbox"/> Narrow <5m   |            | <input type="checkbox"/> Residential, Park, New Field                       |                             | <input type="checkbox"/> Open Pasture, Row Crop       |  |
| <input type="checkbox"/> None   |            | <input type="checkbox"/> Fenced Pasture                                     |                             | <input type="checkbox"/> Mining or Construction       |  |

COMMENTS \_\_\_\_\_

4. FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☒ Stream Flowing ☐ Moist Channel, isolated pools, no flow (Intermittent)

☐ Subsurface flow with isolated pools (interstitial) ☐ Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

5. SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None ☒ 1.0 ☐ 2.0 ☐ 3.0

☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

6. STREAM GRADIENT ESTIMATE

☐ Flat (0 to 1000 ft) ☐ Flat to Moderate ☒ Moderate (2 to 1000 ft) ☐ Moderate to Severe ☐ Severe (10 to 1000 ft)

**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_

County: Meigs Township / City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): unsure Date of last precipitation: unknown Quantity: \_\_\_\_\_

Photograph Information: 2 photos

Elevated Turbidity? (Y/N): \_\_\_\_\_ Canopy (% open): 15

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N): \_\_\_\_\_ If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

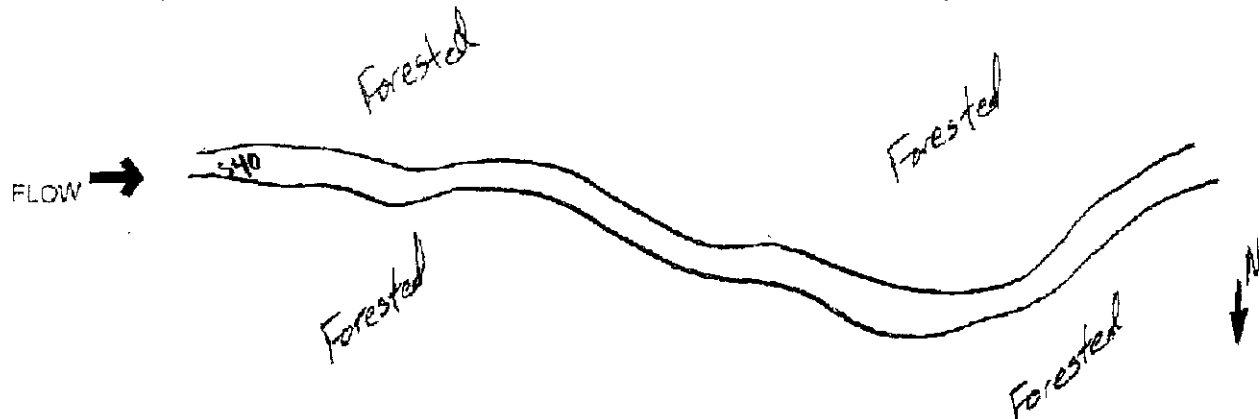
Performed? (Y/N): \_\_\_\_\_ (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_  
 Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Stream 46



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

37

ck.  
II

SITE NAME/LOCATION 4-MP-01 Preferred Route Transmission

SITE NUMBER 089-100000 RIVER BASIN \_\_\_\_\_

DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_

LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE 19 Aug 2008 SCORER M. Thomas COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
MODIFICATIONS:

| 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.) |           |   |              | HHEI Metric Points            |
|--|-----------|---|--------------|-------------------------------|
| TYPE   | PERCENT   | TYPE  | PERCENT      |                               |
| <input type="checkbox"/> BLDR SLABS [16 pts]   | _____     | <input type="checkbox"/> SILT [3 pt]                                | _____        | Substrate<br>Max = 40         |
| <input type="checkbox"/> BOULDER (>256 mm) [16 pts]  | _____     | <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]  | <u>10</u>    |                               |
| <input type="checkbox"/> BEDROCK [16 pt]   | _____     | <input type="checkbox"/> FINE DETRITUS [3 pts]                      | _____        | A + B                         |
| <input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]  | <u>30</u> | <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]          | <u>10</u>    |                               |
| <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [8 pts]   | <u>16</u> | <input type="checkbox"/> MUCK [0 pts]                               | _____        | 17                            |
| <input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]   | <u>20</u> | <input type="checkbox"/> ARTIFICIAL [3 pts]                         | _____        |                               |
| Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>20</u>   |           | (A) <u>12</u>   | (B) <u>5</u> |                               |
| SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:   |           | TOTAL NUMBER OF SUBSTRATE TYPES:                                    |              |                               |
| 2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):                             |           |   |              |                               |
| <input type="checkbox"/> > 30 centimeters [20 pts]   |           | <input type="checkbox"/> > 5 cm - 10 cm [15 pts]                    |              | Pool Depth<br>Max = 30        |
| <input type="checkbox"/> > 22.5 - 30 cm [30 pts]   |           | <input checked="" type="checkbox"/> < 5 cm [5 pts]                  |              |                               |
| <input type="checkbox"/> > 10 - 22.5 cm [25 pts]   |           | <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]          |              | 5                             |
| COMMENTS _____   |           | MAXIMUM POOL DEPTH (centimeters):                                   |              |                               |
| 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):   |           |   |              |                               |
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts]   |           | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |              | Bankfull<br>Width<br>Max = 30 |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  |           | <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]                  |              |                               |
| <input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 7" - 9' 8") [20 pts]  |           |   |              | 15                            |
| COMMENTS _____   |           | AVERAGE BANKFULL WIDTH (meters):                                    |              |                               |

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

| RIPARIAN WIDTH                                |  | FLOODPLAIN QUALITY   |  | L R   |  |
|---|--|--|--|---|--|
| <input checked="" type="checkbox"/> Wide >10m |  | <input checked="" type="checkbox"/> Mature Forest, Wetland   |  | <input type="checkbox"/> Conservation Tillage   |  |
| <input type="checkbox"/> Moderate 5-10m       |  | <input type="checkbox"/> Immature Forest, Shrub or Old Field |  | <input type="checkbox"/> Urban or Industrial    |  |
| <input type="checkbox"/> Narrow <5m           |  | <input type="checkbox"/> Residential, Park, New Field        |  | <input type="checkbox"/> Open Pasture, Row Crop |  |
| <input type="checkbox"/> None                 |  | <input type="checkbox"/> Fenced Pasture                      |  | <input type="checkbox"/> Mining or Construction |  |
| COMMENTS _____                                |  |  |  |   |  |

FLOW REGIME (At Time of Evaluation) (Check ONLY one box)

☐ Stream Flowing

☐ Subsurface flow with isolated pools (Intermittent)

☒ Moist Channel, isolated pools, no flow (Intermittent)

☐ Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None

☐ 0.5

☒ 1.0

☐ 1.5

☐ 2.0

☐ 2.5

☐ 3.0

☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft)

☐ Flat to Moderate

☐ Moderate (2 ft/100 ft)

☒ Moderate to Severe

☐ Severe (10 ft/100 ft)

**ATTACHMENT D**  
**Page 64 of 66**

**ADDITIONAL STREAM INFORMATION (This information must also be completed):**

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_

County: Meigs Township / City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: unknown Quantity: \_\_\_\_\_

Photograph Information: 2 photos; 1 upstream, 1 downstream

Elevated Turbidity? (Y/N): N Canopy (% open): 5

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or ID, and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N): Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOLOGIC EVALUATION**

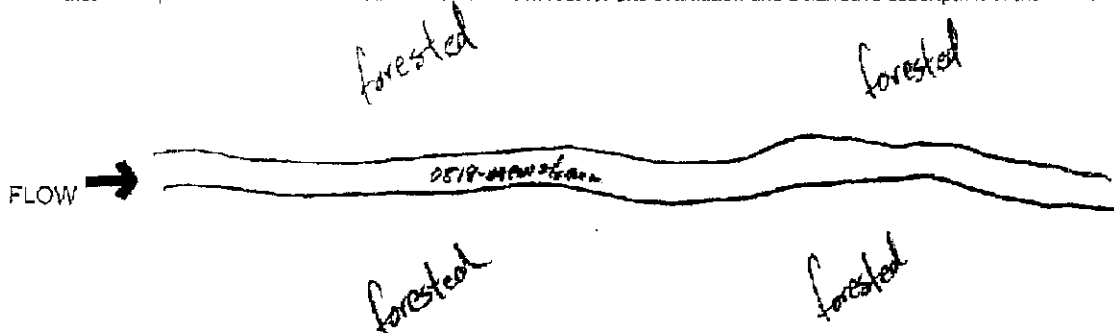
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N): N Voucher? (Y/N): \_\_\_\_\_ Salamanders Observed? (Y/N): N Voucher? (Y/N): \_\_\_\_\_  
Frogs or Tadpoles Observed? (Y/N): N Voucher? (Y/N): \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N): N Voucher? (Y/N): \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Stream 47



# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

Class I  
21

SITE NAME/LOCATION AMP-011 Preferred Route Transmission

SITE NUMBER 158-0000002 RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_

LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE 19 Aug 2008 SCORER A. Thayer COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
MODIFICATIONS:

|   |   |   |  |  |
|---|---|---|--|--|
| <p>1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A &amp; B.)</p>   |   |   |  | <p><b>HHEI Metric Points</b></p> <p>Substrate Max = 40</p> <p><b>16</b></p> <p>A + B</p> |
| <p><b>TYPE</b></p> <p><input type="checkbox"/> BLDR SLABS [16 pts]</p> <p><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</p> <p><input type="checkbox"/> BEDROCK [16 pts]</p> <p><input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]</p> <p><input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</p> <p><input type="checkbox"/> SAND (&lt;2 mm) [5 pts]</p>        | <p><b>PERCENT</b></p> <p>_____</p> <p>_____</p> <p>_____</p> <p><u>40</u></p> <p><u>10</u></p> <p>_____</p> | <p><b>TYPE</b></p> <p><input type="checkbox"/> SILT [3 pt]</p> <p><input checked="" type="checkbox"/> LEAF PACKWOODY DEBRIS [3 pts]</p> <p><input type="checkbox"/> FINE DETRITUS [3 pts]</p> <p><input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]</p> <p><input type="checkbox"/> MUCK [0 pts]</p> <p><input type="checkbox"/> ARTIFICIAL [3 pts]</p> | <p><b>PERCENT</b></p> <p>_____</p> <p><u>20</u></p> <p>_____</p> <p><u>30</u></p> <p>_____</p> |  |
| <p>Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>40</u> (A)</p>   |   | <p>(B) <u>4</u></p>   |  |  |
| <p>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: _____</p>   |   | <p>TOTAL NUMBER OF SUBSTRATE TYPES: <u>4</u></p>  |  |  |
| <p>2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</p>   |   |   |  | <p>Pool Depth Max = 30</p> <p><b>0</b></p>   |
| <p><input type="checkbox"/> &gt; 30 centimeters [20 pts]</p> <p><input type="checkbox"/> &gt; 22.5 - 30 cm [30 pts]</p> <p><input checked="" type="checkbox"/> &gt; 10 - 22.5 cm [25 pts]</p> <p><input type="checkbox"/> &gt; 5 cm - 10 cm [15 pts]</p> <p><input checked="" type="checkbox"/> &lt; 5 cm [5 pts]</p> <p><input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]</p>         |   |   |  |  |
| <p>COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): _____</p>   |   |   |  |  |
| <p>3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):</p>   |   |   |  | <p>Bankfull Width Max=30</p> <p><b>5</b></p>   |
| <p><input type="checkbox"/> &gt; 4.0 meters (&gt; 13') [30 pts]</p> <p><input type="checkbox"/> &gt; 3.0 m - 4.0 m (&gt; 9' 7" - 13') [25 pts]</p> <p><input checked="" type="checkbox"/> &gt; 1.0 m - 1.5 m (&gt; 3' 3" - 4' 8") [15 pts]</p> <p><input type="checkbox"/> &gt; 1.5 m - 3.0 m (&gt; 4' 8" - 9' 8") [20 pts]</p> <p><input type="checkbox"/> &gt; 1.0 m (&lt; 3' 3") [5 pts]</p> |   |   |  |  |
| <p>COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): <u>1.1</u></p>   |   |   |  |  |

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY \*NOTE: River Left (L) and Right (R) as looking downstream\*

| RIPARIAN WIDTH                                |  | FLOODPLAIN QUALITY       |                          |
|---|--|--------------------------|--------------------------|
| (Per Bank)                                    | (Most Predominant per Bank)                                  | L                        | R                        |
| <input checked="" type="checkbox"/> Wide >10m | <input checked="" type="checkbox"/> Mature Forest, Wetland   | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Moderate 5-10m       | <input type="checkbox"/> Immature Forest, Shrub or Old Field | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Narrow <5m           | <input type="checkbox"/> Residential, Park, New Field        | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> None                 | <input type="checkbox"/> Fenced Pasture                      | <input type="checkbox"/> | <input type="checkbox"/> |
| COMMENTS _____                                |  |                          |                          |

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☐ Stream Flowing

☐ Subsurface flow with isolated pools (Intermittent)

☒ Moist Channel, isolated pools, no flow (Intermittent)

☐ Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None

☒ 0.5

☐ 1.0

☐ 1.5

☐ 2.0

☐ 2.5

☐ 3.0

☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 m/100 ft)

☐ Flat to Moderate

☐ Moderate (2 m/100 ft)

☒ Moderate to Severe

☐ Severe (10 m/100 ft)

**ATTACHMENT D**  
**Page 66 of 66**

**ADDITIONAL STREAM INFORMATION (This information must also be completed):**

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_

County: Heigs Township / City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: unknown Quantity: \_\_\_\_\_

Photograph information: 3 photos; 1 upstream (branch a) 1 upstream (branch b), 1 downstream

Elevated Turbidity? (Y/N): N Canopy (% open): \_\_\_\_\_

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

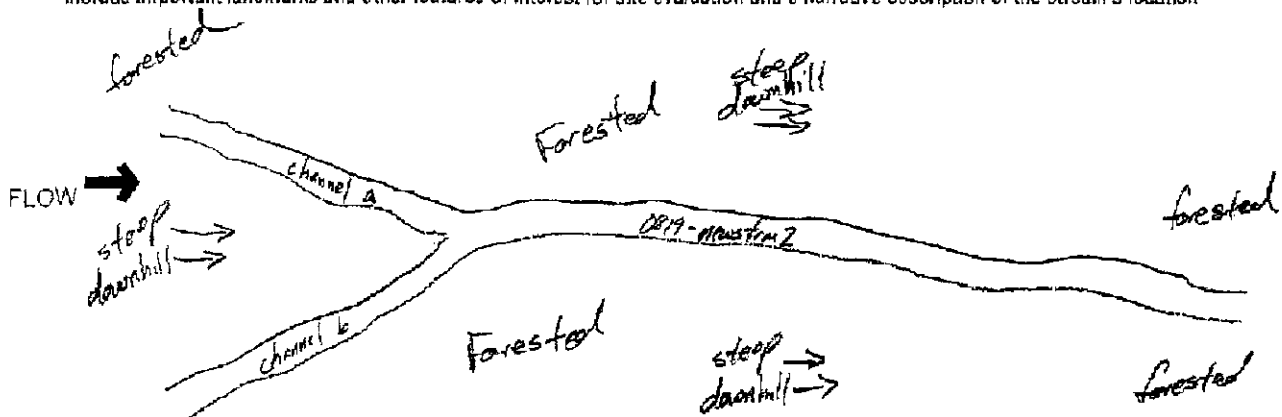
Fish Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



## **Attachment E**

### **Photographic Record Preferred Transmission Route**

ATTACHMENT E  
Page 1 of 1  
**PHOTOGRAPHIC RECORD**  
AMP-Ohio 345 kV Preferred Transmission  
Line Route

| Client Name:                           | Site Location:     | Project No. |
|--|--------------------|-------------|
| American Municipal Power-Ohio (AMP-OH) | Meigs County, Ohio | 14946376    |

Photo Date:  
April 30, 2008

Facing west across valley  
containing streams S27, S35  
and S36

HHEI for S27 scored 8/24/06  
prior to landowner clearing



Photo Date:  
April 30, 2008

Facing south near S27

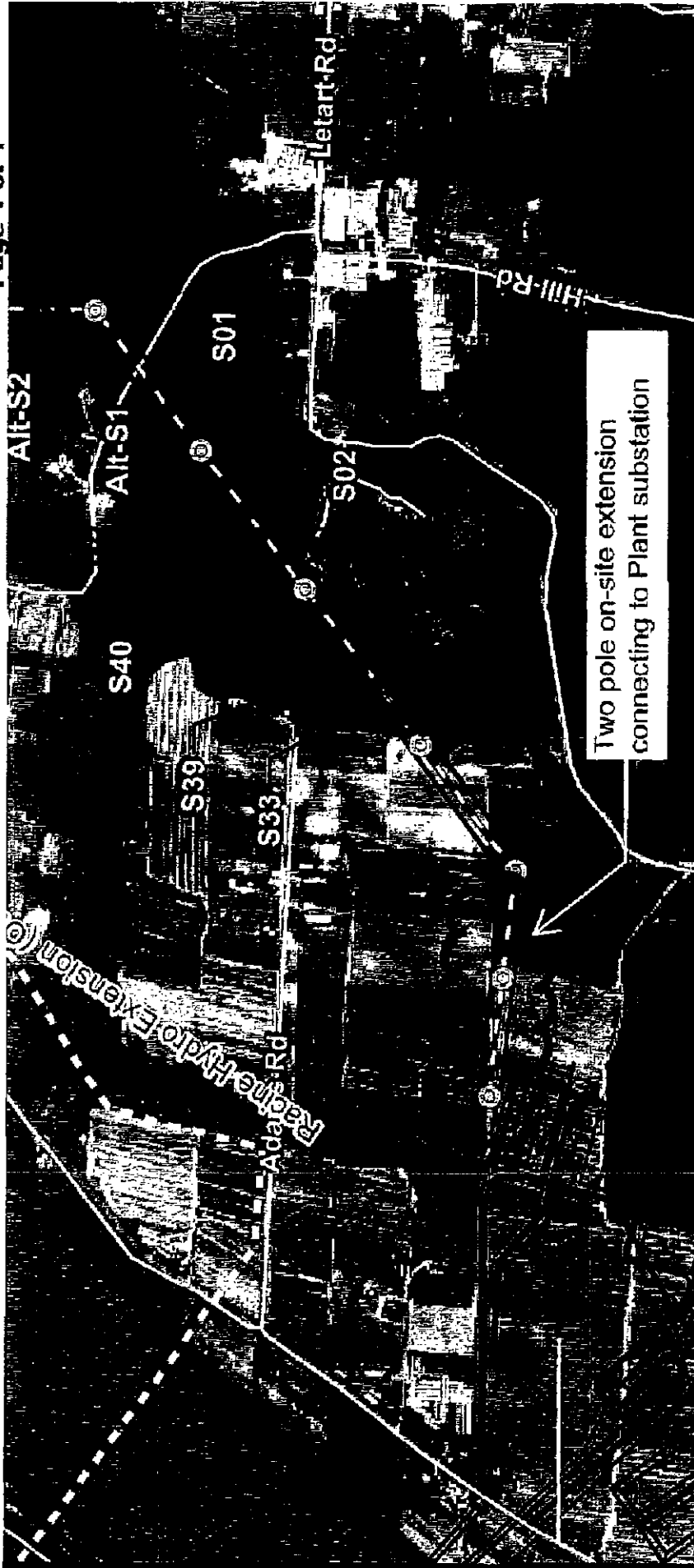
HHEI for S27 scored 8/24/06  
prior to landowner clearing





## **Attachment F**

### **Transmission Line Preferred and Alternate Routes Extension to Plant Substation**



LEGEND:

- Preferred Route
- Preferred Route 150 ft Corridor
- Alternate Route
- Alternate Route 150 ft Corridor
- Preferred Route Poles
- Delineated Wetlands
- Delineated Streams
- Drainages

- Switchyard
- Existing Transmission Line
- Generation Station
- Streets



**CASE #06-1357-EL-BTX**  
**345 kV TRANSMISSION LINE**  
**PREFERRED AND ALTERNATE ROUTES**  
**EXTENSION TO PLANT SUBSTATION**  
 (Approximately 1512 feet extension)

# **Applicant Exhibit No. 4**

FILE

CHESTER WILLCOX & SAXBE LLP

*Attorneys and Counselors at Law*

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117  
norosz@cwslaw.com

August 20, 2008

*Via Hand Delivery*

Renee Jenkins  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street – 13<sup>th</sup> Floor  
Columbus, Ohio 43215

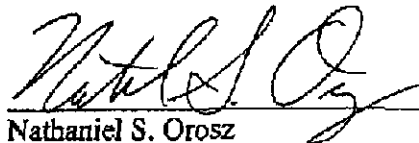
**RE: OPSB Case No. 06-1357-EL-BTX  
Proof of Publication**

RECEIVED-DOCKETING DIV  
2008 AUG 20 AM 11:20  
PUCO

Dear Ms. Jenkins:

As required by Ohio Administrative Code §4906-5-09, enclosed please find the proof of publication in the local newspaper of the revised initial public notice regarding Ohio Power Siting Board Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities. Also enclosed is a copy of the notice as it appeared in *The Daily Sentinel*.

Respectfully,



Nathaniel S. Orosz  
Counsel for American Municipal Power-Ohio, Inc.

cc: Judge Gregory Price – 12<sup>th</sup> Floor

[illegible][illegible][illegible][illegible]

FAVE's chairman said (left) that he was "not a Jew," while Jewish-Johansen said (right) that he was "not a Jew." FAVE's chairman said (left) that he was "not a Jew," while Jewish-Johansen said (right) that he was "not a Jew." FAVE's chairman said (left) that he was "not a Jew," while Jewish-Johansen said (right) that he was "not a Jew."

# The Daily Sentinel

POMEROY, OH

## PROOF OF PUBLICATION

The State of Ohio,

Meigs County, ss:

I, Charlene Hoeflich, General Manager,

The Daily Sentinel

Make solemn oath that notice, of which the attached

Is a true copy, was published in The Pomeroy Daily Sentinel,

a newspaper printed in the Village of Pomeroy in said

County of Meigs, and of general circulation in said

County, 1 time(s), beginning on

8/8 2008 and ending 8/8 2008

*Charlene Hoeflich*  
Pomeroy, OH *Judy A. Clark* 8/8/2008

Sworn to and subscribed before me this day.

Printer's fees \$470.00



Official Seal  
Judy A. Clark  
Notary Public - State of Ohio  
My Commission Expires June 23, 2012  
Recorded in Meigs County, Ohio

FILE

CHESTER WILLCOX & SAXBE LLP

*Attorneys and Counselors at Law*

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117  
norosz@cwslaw.com

October 15, 2008

*Via Hand Delivery*

Renee Jenkins  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street -- 13<sup>th</sup> Floor  
Columbus, Ohio 43215

PUCO

2008 OCT 15 PM 4:46

RECEIVED-DOCKETING DIV

**RE: OPSB Case No. 06-1357-EL-BTX  
Proof of Publication**

Dear Ms. Jenkins:

As required by Ohio Administrative Code §4906-5-09, enclosed please find the proof of publication in the local newspaper of the second public notice regarding Ohio Power Siting Board Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities. Also enclosed is a copy of the notice as it appeared in *The Daily Sentinel* on October 9, 2008.

Respectfully,



Nathaniel S. Orosz  
Counsel for American Municipal Power-Ohio, Inc.

cc: Judge Gregory Price -- 12<sup>th</sup> Floor

This is to certify that the images appearing are an  
accurate and complete reproduction of a case file  
document delivered in the regular course of business  
Technician                      Date Processed                      **OCT 15 2008**

# Notice of Proposed Major Utility Facility

This is the second noticed published in regard to this Proposed Major Utility Facility. AMP-Ohio published the first notice in the Daily Sentinel newspaper, Pomeroy, Ohio, on August 8, 2008.

## Name and Description of the Proposed Facility

American Municipal Power-Ohio (AMP-Ohio) proposes to construct an electric transmission line and associated interconnection switchyard located in Letart Township and Sutton Township, Meigs County, Ohio. This project is known as the AMP-GS Transmission Line. As required by the Ohio Revised Code Chapter 4906, AMP-Ohio seeks a Certificate of Environmental Compatibility and Public Need from the State of Ohio's Power Siting Board.

## Date, Time and Location of Public Hearing

The Ohio Power Siting Board will be holding hearings where the public is invited to provide written or oral comments regarding this proposed transmission line. The non-adjudicatory hearing will be held on October 22, 2008, at 6 p.m. at Southern High School, 920 Elm Street, Racine, Ohio, 45771.

An adjudicatory hearing will be held October 27, 2008, beginning at 10 a.m. at the offices of the Public Utilities Commission of Ohio, 180 East Broad Street, Columbus, Ohio, 43215-3793, Hearing Room 11C.

This notice serves as the second notice published regarding this project and the project's respective hearing dates.

The project includes construction of an approximately 5-mile long 345 kilovolt transmission line and related facilities necessary to transmit the electricity generated by a proposed 960 Megawatt net electric generation facility, consisting of two 480 MW net electric generating units, to be built in the vicinity of Letart Falls, Meigs County, Ohio. To honor its public power function, the proposed generation facility is named the American Municipal Power Generating Station ("AMP-GS"). The transmission project is an inextricable component of the AMPGS project, and is not being undertaken on a stand-alone basis.



The application for a Certificate of Environmental Compatibility and Public Need is now pending before the State of Ohio Power Siting Board. This application has been assigned Case Number 06-1357-EL-BTX. This number should be included in all communications with respect to this proceeding.

The accompanying map depicts the proposed and alternate routes. The project is located in Meigs County, Ohio. It should be noted that due to the reduced scale and limited detail, this map should be used only as a general guide. Copies of the actual siting application, including specific details of location and construction, are available for public inspection at the following locations:

Meigs County District Library  
Ms. Kristi Eblin, Director  
216 West Main Street  
Pomeroy, Ohio 45769  
(740) 592-5813

Ohio Power Siting Board  
Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus, Ohio 43215-3793  
(866) 270-6772

American Municipal Power-Ohio  
Kerr Carson, Director of Communications  
2600 Airport Drive  
Columbus, Ohio 43219  
(614) 337-6222

An electronic version of the application can be found at the Ohio Power Siting Board's Web site at <http://opsb.ohio.gov>. To retrieve the application, search under "Current

Cases" for case number 06-1357-EL-BTX.

Pursuant to Rule 4906-5-06 of the Ohio Administrative Code, the following local government officials in Meigs County have been served with a copy of the application:

Meigs County Commissioners  
Mr. Michael Davenport, President  
100 East Second Street  
Pomeroy, Ohio 45769

Meigs County Health Department  
Mr. Larry Marshall, Health Commissioner  
112 East Memorial Drive  
Pomeroy, Ohio 45771

Mr. Robert Morris  
Letart Township Trustee  
49435 Lighthouse Road  
Racine, Ohio 45771

Meigs County District Library  
Ms. Kristi Eblin, Director  
216 West Main Street  
Pomeroy, Ohio 45769

Meigs SWCD  
Mr. Joe Bolin, Chairman  
33101 Hiland Road  
Pomeroy, Ohio 45769

Tupper Plains-Chester Water District  
Mr. Donald Poole, Operations General Manager  
39561 Holly Lane  
Pomeroy, Ohio 45769

Meigs County Office of Economic and Workforce Development  
Mr. Perry Varnadoe, Executive Director  
238 West Main Street  
Pomeroy, Ohio 45769

Meigs County Engineer  
Mr. Eugene Triplett  
106 Holly Lane  
Pomeroy, Ohio 45769

Sutton Township Trustee  
Mr. Larry Ebersbach  
P.O. Box 147  
Syracuse, Ohio 45779

The Ohio Power Siting Board has served the following state agencies with copies of the application:  
Public Utilities Commission of Ohio  
Ohio Department of Agriculture  
Ohio Department of Development  
Ohio Department of Health

Ohio Department of Natural Resources  
Ohio Department of Transportation  
Ohio Environmental Protection Agency  
Ohio Historical Society

## Criteria Used to Review the Application

The following eight criteria are set forth in Section 4906.10 (A) of the Revised Code and will be used, along with additional information, by the Board in the reviewing of the application for a certificate to construct, operate and maintain the AMPGS Transmission Line:

- The basis of the need for the facility. In the case of a major utility facility described in division (B)(1) of Section 4906.01 of the Revised Code, the Board shall presume the need for the facility as that need is stated in an application pursuant to division (A)(3) of Section 4906.06 of the Revised Code;
- The nature of the probable environmental impact of the proposed facility;
- Whether the facility represents the minimum adverse environmental impact, considering the state of available technology, the nature and economics of various alternatives, and other pertinent considerations;
- In the case of electric transmission lines, that the facility is consistent with regional plans for expansion of the regional power grid of electric systems serving this state and interconnected utility systems, and the facility will serve the interests of electric system economy and reliability;
- The facility will comply with Chapters 3704, 3734, and 6111 of the Revised Code and all rules and standards adopted under those chapters and under Sections 1501.33, 1501.34, and 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under Section 4561.32 of the Revised Code, the Board shall consult with the office of aviation of the division of the multi-modal planning and programs of the Department of Transportation under Section 4561.341 of the Revised Code;
- The facility will serve the public interest, convenience, and necessity;
- The facility's impact on the viability as agricultural land of any land in an existing agricultural district es-

tablished under Chapter 929 of the Revised Code that is located within the site of the proposed major utility facility; and

• The facility incorporates maximum feasible water conservation practices as determined by the Board, considering available technology and the nature and economics of the various alternatives.

Section 4906.07 of the Revised Code provides that:

(A) Upon the receipt of an application complying with Section 4906.06 of the Revised Code, the Power Siting Board shall promptly fix a date for a public hearing thereon, not less than sixty nor more than ninety days after such receipt, and shall conclude the proceeding as expeditiously as practicable.

(B) On an application for an amendment of a certificate, the Board shall hold a hearing in the same manner as a hearing is held on an application for a certificate if the proposed change in the facility would result in any material increase in any environmental impact of the facility or a substantial change in the location of all or a portion of such a facility other than as provided in the alternatives set forth in the application.

(C) The Chairman of the Power Siting Board shall cause each application filed with the Board to be investigated and shall, not less than fifteen days prior to the date of any application is set for hearing, submit a written report to the Board and to the applicant. A copy of such report shall be made available to any person upon request. Such report shall set forth the nature of the investigation, and shall contain recommended findings with regard to division (A) of section 4906.10 of the Revised Code and shall become part of the record and served upon all parties to the proceeding.

American Municipal Power-Ohio  
2600 Airport Drive  
Columbus, Ohio 43219  
(614) 337-6222  
[www.amp-ohio.org](http://www.amp-ohio.org)



# The Daily Sentinel

Pomeroy, OH

## PROOF OF PUBLICATION

The State of Ohio,

Meigs County, ss:

I, Charlene Hoefflich, General Manager,

The Daily Sentinel

Make solemn oath that notice, of which the attached

is a true copy, was published in The Pomeroy Daily Sentinel,

a newspaper printed in the Village of Pomeroy in said

County of Meigs, and of general circulation in said

County, 1 time(s), beginning on

10/9 2008 and ending 10/9 2008

[Signature] AD Rep

Pomeroy, OH Judy A. Clark 10/10/2008

Sworn to and subscribed before me this day.

Printer's fees \$ 470.00



Official Seal  
Judy A. Clark  
Notary Public - State of Ohio  
My Commission Expires June 23, 2012  
Recorded in Meigs County, Ohio

# **Applicant Exhibit No. 5**

FILE

CHESTER WILLCOX & SAXBE LLP

*Attorneys and Counselors at Law*

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117  
norosz@cwslaw.com

September 22, 2008

*Via Hand Delivery or U.S. Mail*

Renee Jenkins  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street - 13<sup>th</sup> Floor  
Columbus, OH 43215

PUCO

2008 SEP 22 PM 2:44

RECEIVED-DOCKETING DIV

**RE: OPSB Case No. 06-1357-EL-BTX**  
**List of Recipients of Notice Letters**

Dear Renee Jenkins:

In accordance with O.A.C. 4906-5-08(C)(3), enclosed for docketing in the above-captioned matter is a list of persons who received letters sent via first class mail describing the American Municipal Power Generating Station Transmission Line ("AMPGS Transmission Line"), the certification process before the Ohio Power Siting Board, and hearing dates. Copies of the letters sent are attached.

|   |                          |                            |
|---|--------------------------|----------------------------|
| Ms. Carol Adams                           | 2121 Carrol Street       | Syracuse, OH 45779         |
| Mr. Todd Adams                            | 3819 Stonestrow Lane     | Hilliard, OH 43026-5712    |
| Mr. and Mrs. Jack and Vicki Cummins       | 25741 Hill Road          | Racine, OH 45771           |
| Mr. Russell Cummins                       | 47820 Plants Road        | Racine, OH 45771           |
| Mr. and Mrs. Melvin and Mary Forester     | 48380 Blind Hollow Road  | Racine, OH 45771           |
| Mr. Charles Gaskill                       | 310 Quail Hollow Port    | Pickerington, OH 43147     |
| Mr. and Mrs. Larry and Kristina Goodnight | 48137 Cleland Road       | Racine, OH 45771           |
| Ms. Shelley Haskins                       | 8751 State Route 7 North | Cheshire, OH 45620         |
| Mr. Mike and Virginia Hayman              | Route 2                  | Letart, WV 25253           |
| Mr. Angela Hubbard                        | 25710 McNickle Road      | Racine, OH 45771           |
| Mr. and Mrs. Joey and Ashli Jarrel        | 25790 McNickle Road      | Racine, OH 45771           |
| Mr. Gary Milmine                          | 700 Morrison Road        | Gahanna, OH 43230          |
| Mr. Rodney Neigler                        | 25561 McNickle Road      | Racine, OH 45771           |
| Mr. and Mrs. Bruce and Lesli Pittenger    | 354 Emmaus Road          | Belpre, OH 45714           |
| Ms. Diane Miko                            | 1831 Kleben Street       | Pittsburgh, PA 15212       |
| Mr. and Mrs. Chris and Penny Preston      | 161 N. Scott Street      | Sheridan, WY 82801         |
| Mr. Gary Roush                            | 24320 Hill Road          | Racine, OH 45771           |
| Mr. Lester Manuel                         | 48790 Manuel Road        | Racine, OH 45771           |
| Ms. Dorothy Shain                         | 48435 Blind Hollow Road  | Racine, OH 45771           |
| Mr. and Mrs. Paul and Davia Johnson, Jr.  | 48510 Township Road 631  | Racine, OH 45771           |
| Mr. and Mrs. Tom and Linda Tucker         | 131 McBride Road         | Mt. Airy, NC 27030-9255    |
| Ms. Sharon Wilson                         | 12263 River Road         | Columbia Station, OH 44028 |
| Mr. George Johnson                        | 48301 Township Road 631  | Racine, OH 45771           |
| Mr. Christopher Wolfe                     | 48529 Blind Hollow Road  | Racine, OH 45771           |

September 22, 2008

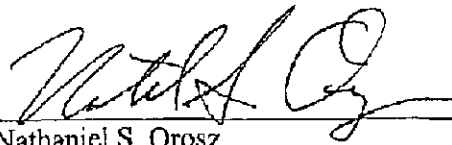
Page 2

Mr. Christopher Wolfe  
Mr. and Mrs. Phillip and Anna Wolfe  
Ms. Pauline Hill  
Ms. Joan and Regina Wolfe  
Mr. Sam Hatcher

48520 Blind Hollow Road  
48760 Canter Road  
49080 State Route 338  
P.O. Box 296  
P.O. Box 870

Racine, OH 45771  
Racine, OH 45771  
Racine, OH 45771  
Racine, OH 45771  
New Haven, WV 25265

Respectfully,

A handwritten signature in dark ink, appearing to read 'Nathaniel S. Orosz', written over a horizontal line.

Nathaniel S. Orosz  
Counsel for American Municipal Power-Ohio, Inc.

cc: Judge Gregory Price – 12<sup>th</sup> Floor

ND: 4819-8661-1971, v. 1