

## **Appendix A**

### **Supporting DOE and City of Piqua Documents**

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Department of Energy  
Washington, DC 20585

January 17, 2019

OLM-DM-2019-001

Mr. Gary Huff,  
City Manager  
City of Piqua, Ohio  
201 West Water Street  
Piqua, OH 45356

Subject: *Addendum to Lease Agreement between the United States Department of Energy and the City of Piqua, Ohio and Amendment of Solicitation/Modification of Contract*

Dear Mr. Huff:

Enclosed for your records is an executed copy of the *Addendum to Lease Agreement between the United States Department of Energy and the City of Piqua, Ohio* (Addendum to Lease with Exhibits) and *Amendment of Solicitation/Modification of Contract* (Contract Modification). The original will be sent to the Miami County Clerk and Records office in Ohio to be recorded.

Please contact me at (303) 410-4827, or Suzie Jo Herrera of my contractor staff at (970) 248-6125, if you have any questions or concerns. Please send any correspondence to:

U.S. Department of Energy  
Office of Legacy Management  
2597 Legacy Way  
Grand Junction, CO 81503

Sincerely,

David P. McNeil  
Senior Realty Officer  
Office of Legacy Management

Digitally signed by DAVID MCNEIL  
DN: c=US, o=U.S. Government,  
ou=Department of Energy, cn=DAVID  
MCNEIL,  
0.9.2342.19200300.100.1.1=89001002941796  
Date: 2019.01.22 08:17:41 -07'00'

Enclosures



Printed with soy ink on recycled paper

Mr. Huff

2

cc w/enclosures:

F. Banks DOE (e)

R. King, DOE (e)

D. McNeil, DOE (e)

B. Sokolovich, DOE (e)

B. Taylor, DOE (e)

B. Zimmerman, DOE (e)

S. Herrera, Weston (e)

M. Miller, Navarro (e)

P. Stocking, Navarro (e)

A. Wei, Navarro (e)

LM Admin Support (e)

Project File RFS 1415.05

Property Management File RFS 1415.05



ADDENDUM  
TO  
LEASE AGREEMENT  
BETWEEN  
THE UNITED STATES DEPARTMENT OF ENERGY  
AND  
THE CITY OF PIQUA, OHIO

This addendum is entered into this <sup>7<sup>th</sup></sup> day of January, 2018<sup>9</sup>, by and between the United States of America (herein the "Government"), acting through the U.S. Department of Energy (herein "DOE"), the successor to the Atomic Energy Commission (herein the "AEC"), and the City of Piqua, Ohio (herein the "City").

Recitals

WHEREAS, on March 7, 1961, the City leased to the Government a tract of land described in Miami County Lease Book 24, Page 334, (the "premises") on which the Government constructed a Government-owned nuclear reactor, which the City operated under Contract No. AT(11-1)-652 with the AEC. Said contract was terminated on December 13, 1967. On May 10, 1968, the City and the AEC entered into Contract No. AT(11-1)-1798 (Exhibit A), which defined the responsibilities of the parties thereto in connection with certain land and facilities (the "premises") including decontamination of the premises, entombment of a Government-owned reactor located on the premises, maintenance of the premises, and future ownership of the premises; and provided that the "Government shall lease such land and the structures thereon to the City" and the "City shall thereafter assume responsibility for the non-nuclear safety and maintenance of such property;" and

WHEREAS, pursuant to Contract No. AT(11-1)-1798, the City conveyed the premises to the Government by deed of March 24, 1969, recorded in the land records of Miami County, Ohio on March 26, 1969 (**Deed Book 460, Page 599**) (Exhibit B). Section 9 of that contract references the Deed from the City to the Government, and section 2 of such Deed provides when the radioactivity level of the material has decayed to a condition permitting unrestricted use, that the "premises shall revert to, vest in, and become absolutely the property of the grantor, its successors and assigns;" and

WHEREAS, the Government, through the AEC, leased "a parcel of land, together with the building erected thereon" (Piqua facility) to the City via a lease dated June 25, 1969, recorded in the land records of Miami County, Ohio at **Lease Book 24, Page 334** (Exhibit C); and

WHEREAS, the City has informed DOE that it does not intend to utilize the reactor building and auxiliary building on the premises, as referenced in Contract No. AT(11-1)-1798, in the future, but that the City seeks continued access to the land for storage or other purposes; and

WHEREAS, the Government requires full and exclusive access to the premises to conduct work on the structures and facilities, potentially including removal of same;

NOW, THEREFORE, the Government and the City hereby agree as follows:

1. Section 3 of the Lease, is hereby modified as follows:

"The Government warrants that it has title in fee simple to the leased land and that it is free of liens and encumbrances. Effective the date of this addendum, the City's access to the entire premises for any purpose shall be held in abeyance until such time as the Government completes its contemplated work thereupon and therein, as the Government may choose to conduct, up to and including potential abatement and/or removal of any or all structures and facilities. The Government shall have full rights of access to the premises to the exclusion of the City during this time period. At the time the Government completes its contemplated work associated with the structures and facilities, it shall provide written notice to the City notifying the City of the effective date of the abeyance, and the resumption of "free and undisturbed use of such land," except for those limitations provided in the 1968 contract and the 1969 lease.

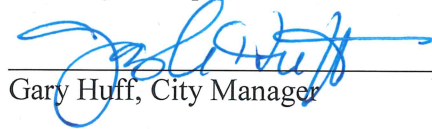
2. Effective the date hereof, the City is relieved of its current obligations for non-nuclear safety and maintenance of the reactor building and auxiliary building located on the premises, as referenced in Contract No. AT(11-1)-1798 and as described in Section 8 of Appendix A to the lease, but shall retain those obligations for the balance of the premises at the conclusion of the abeyance set forth in Section 1 hereof. Furthermore, the City specifically waives its reversionary interest in any and all structures and facilities, but not the land, at the premises as those interests may exist pursuant to the reversionary clause in the above-mentioned deed of March 26, 1969 from the City to the Government.

3. Upon termination of the abeyance set forth in Section 1 hereof, the City shall resume its responsibility for the non-nuclear maintenance and upkeep of the premises, as it then exists, excluding the aforementioned reactor building and auxiliary building, should they remain.

4. Except as modified hereby, the agreements of the parties shall continue and remain in full force and effect.

IN WITNESS WHEREOF, the Parties hereby agree to the foregoing effective as of the last date set forth below.

The City of Piqua, Ohio

  
Gary Huff, City Manager

12-31-18  
Date

UNITED STATES OF AMERICA, U.S. DEPT. OF ENERGY



Real Estate Contracting Officer

1/7/19  
Date

State of Ohio

County of Miami ss:

On this 31<sup>st</sup> day of December, 2018 appeared before me, a Notary Public in and for the State of Ohio, Gary A. Huff, the City Manager of the City of Piqua, Ohio, the municipal corporation which executed the foregoing lease amendment who acknowledged that the seal affixed to said instrument is the seal of said City of Piqua; that he did sign and seal such instrument as such City Manager on behalf of said City and by authority of its City Commission; and that said instrument is his free act and deed individually and as the City Manager, and the free and corporate act and deed of the City of Piqua, a municipal corporation.

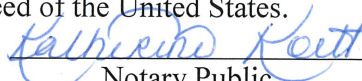


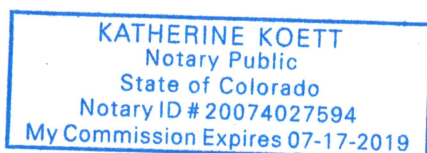
DEBORAH ANN STEIN  
Notary Public, State of Ohio  
My Commission Expires 11/14/2019

  
Notary Public

State of Colorado  
County of Jefferson ss:

On this 7<sup>th</sup> day of January, 2018 appeared before me, a Notary Public in and for the State of Colorado, Mr. David P. McNeil, Real Estate Contracting Officer of the U.S. Dept. of Energy, Legacy Management, who acknowledged that he has full authority to execute the foregoing on behalf of the United States of America, and that the above is his signature and his free act and deed, and the free act and deed of the United States.

  
Notary Public



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE 1 OF 2 PAGES	
2. AMENDMENT/MODIFICATION NUMBER 0001		3. EFFECTIVE DATE See Box 16C.		4. REQUISITION/PURCHASE REQUISITION NUMBER NA		5. PROJECT NUMBER (If applicable) NA	
6. ISSUED BY U.S. Department of Energy Office of Headquarters Procurement Services MA-64 1000 Independence Ave., S.W. Washington DC 20585		7. ADMINISTERED BY (If other than Item 6) CODE		7. ADMINISTERED BY (If other than Item 6) CODE			
8. NAME AND ADDRESS OF CONTRACTOR (Number, street, county, State and ZIP Code) City of Piqua 201 W. Water Street Piqua, Ohio 45356				(X)		9A. AMENDMENT OF SOLICITATION NUMBER NA	
						9B. DATED (SEE ITEM 11) See Box 16C.	
						10A. MODIFICATION OF CONTRACT/ORDER NUMBER AT(11-1)-1798	
						10B. DATED (SEE ITEM 13)	
CODE		FACILITY CODE					

### 11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

- ☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
- Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
- (a) By completing items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

### 13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NUMBER AS DESCRIBED IN ITEM 14.

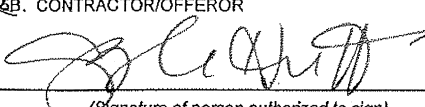
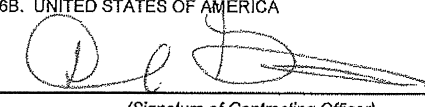
CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NUMBER IN ITEM 10A.
<input type="checkbox"/>	
<input type="checkbox"/>	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
<input type="checkbox"/>	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
<input checked="" type="checkbox"/>	D. OTHER (Specify type of modification and authority) 52.243-1 Changes - Fixed-Price

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this modification is to update the roles/responsibilities associated with AGREEMENT Section, numbers 8 and 13.

See the attached "Continuation Page" for details.

* 5A. NAME AND TITLE OF SIGNER (Type or print) GARY A. HUFF, CITY MANAGER		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Darryl D. Groves	
* 5B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	* 5C. DATE SIGNED 12-31-18	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 01-10-19

Previous edition unusable

STANDARD FORM 30 (REV. 11/2016)  
Prescribed by GSA FAR (48 CFR) 53.243

In accordance with FAR Clause 52.243-1 Changes - Fixed-Price, the following changes are hereby incorporated into the contract:

1. AGREEMENT, Section 8 is hereby revised to, "Except for the activities referred to in Section 3. above necessitated by the presence of the sealed radioactive source, the City shall be responsible for non-nuclear maintenance of the property, excluding the reactor building and auxiliary building, during the period of time it occupies the property under the lease from the Government. The Government may remove, in a manner of the Government's choosing, all above-ground structures and facilities on the premises excluding the entombment for the sealed radioactive source".
2. AGREEMENT, Section 13 is hereby revised to, "The City Shall hold the Government harmless from any liability or claim arising out of damage or injury to persons or property resulting from non-nuclear causes in connection with the property covered by the lease from the Government to the City, except for such liability or claims which may result from a failure by the Government to fulfill any of the responsibilities or obligation assumed by it hereunder.
3. All other terms and conditions remain unchanged and in full force and effect.



## CITY'S MANAGER'S OFFICE

Gary A. Huff – City Manager  
201 West Water Street \* Piqua, Ohio 45356  
(937) 778-2051 - FAX (937) 778-2048  
ghuff@piquaoh.org

January 4, 2019

Brian Zimmerman  
Site Manager  
US Department of Energy  
Office of Legacy Management  
10995 Hamilton-Cleves Highway  
Harrison, OH 45030

Mr. Zimmerman:

The City of Piqua wishes to express our support for the proposal by the Department of Energy to demolish the Piqua Nuclear Plant structures. As we have indicated throughout this process, the City of Piqua has no future plans to utilize or maintain the facility in any fashion and it is our position that demolition is the best alternative.

However, we are interested in having access to the land where the facility is located as stated in the 1969 deed to provide outside storage for utility pipes and other maintenance supplies that can be kept outdoors. It is our hope that this request can be accommodated.

I would like to personally commend the process conducted by the Department of Energy. Everyone involved from the Department of Energy was professional, cooperative, and forthcoming with information.

Respectfully submitted,

Gary A. Huff





# OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 07  
1001 ST. MARYS AVE. • SIDNEY, OH 45365 • 937-492-1141

## **Environmental Document**

for

### **MIA Great Miami River Trail Brdg PID 108160**

**Environmental Document Level: C2**

**Approved: 2/16/2021**

**Prepared By: Libby Rushley**

Lawhon AND Associates

E-mail: lrushley@lawhon-assoc.com

District Contact: Tricia Bishop

Phone: 937-497-6721

E-mail: Tricia.Bishop@dot.ohio.gov

*The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by ODOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 14, 2020, and executed by FHWA and ODOT.*

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## C2

**PID:** 108160  
**Project Sponsor:** Piqua, City of  
**ODOT District:** 7  
**Funding Source:** Federal  
**Private Funding:** No  
**Project Description:**

The City of Piqua proposes to expand and improve access to the Great Miami River Trail on south side of the City. Under the project, the propose to construct a new ADA-compliant bicycle/pedestrian bridge over the Great Miami River at Goodrich Giles Park and extend the GMRT along the west side of the Great Miami River. The extension will run along South Main Street (CR 25A) from the existing trail connection at the Piqua Utility Bridge to the new river crossing in the Park. The extension of the GMRT will be a 10-foot wide paved trail. The river crossing will be a 12-foot wide two-span prefabricated steel truss with reinforced concrete deck, piers, and abutments. The project will also include replacement of the existing sidewalk bridge over Hemm Ditch (aka Leonard Ditch) with a precast culvert.

Construction is expected to begin Spring 2023 and require approximately eight months. The existing GMRT will be closed for approximately 30 days in the vicinity of the construction activity. Access will be maintained via a detour on local streets. Watercraft traffic on the Great Miami River will be maintained when safe; otherwise water traffic will be detoured through advance notice at upstream and downstream portage locations. No roadway traffic will be impacted by this project.

The project will require approximately 1.5 acres of permanent right-of-way and 1.9 acres of temporary right-of-way for construction access from six parcels. Minor impacts to overhead utilities will be necessary for construction.

Within the census block groups that include the project, minorities represent 0% to 21% of the population; individuals in poverty represent 6% to 48% of the population.

Within the project limits, there are no National Historic Landmarks or sites listed or known eligible for the National Register. The project has been determined to have minimal potential to cause effects to historic properties.

Three recognized recreational Section 4(f) resources will be affected by the project: The Great Miami River Trail (multi-use trail maintained by the City of Piqua in the project area); the Great Miami River (an ODNR-designated water trail managed by the Miami Conservancy District) and the City of Piqua's Goodrich Giles Park. As noted above, the GMRT and the water trail will be detoured when closures are necessary. ODOT has determined that impacts to the multi-use trail and water trail meet the criteria of "temporary no use". Due to minor permanent right-of-way from and temporary construction impacts to Goodrich Giles Park, ODOT has determined that impacts to the park meet the criteria of "de minimis".

Impacts to the Great Miami River and Hemm Ditch (aka Leonard Ditch) will occur. The Great Miami River is designated as an exceptional warm water habitat and Section 10 waterway. The project will impact suitable wooded habitat for state and federal protected bat species and cutting restrictions will be imposed on the project. Mussel beds are known to the Great Miami River at the project location; a survey and relocation prior to construction will occur. Although wetlands were identified within the project study area, the project has



been designed to avoid wetland impacts.

The project is located within the designated special flood hazard area and floodway associated with the Great Miami River. The project has been designed to result in no increase to the base flood elevation.

The former Piqua Coal Fired Plant, located on the west bank of the Great Miami River and at the north limits of the project, has undergone closure under the Voluntary Action Program. In order to meet the City's obligations under the Covenant Not to Sue and the Operations & Maintenance Plan, affected areas of the Piqua Coal Fired Plant will be protected through a "do not disturb" note in the plans.

The project is funded with federal Surface Transportation Funds and local funds. The environmental document and associated studies are being approved based on Stage 2 Design, as updated in October 2020. The project is expected to award in October 2022.

STIP Reference #:

108160:21-24 STIP

Select the appropriate project type:

(26) Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (including parking, weaving, turning, and climbing lanes), if the action meets the constraints in paragraph (e) of this section. ***Examples include: Joint or limited use of right-of-way where the proposed use would have minimal or no adverse social (including highway safety), economic or environmental impacts; Installation of new noise walls and other new noise mitigation projects; Construction of highway safety and truck escape ramps; Construction of bicycle lanes and pedestrian walkways, sidewalks, shared-use paths, or facilities and trailhead parking that do not otherwise qualify for a C1 designation; Beautification or facility improvement projects (i.e. landscaping, curb and gutter installation and replacement, ADA ramps/curb ramps, installation of park benches, decorative lighting, etc.); Construction of alternative energy facilities (fuel tank farms, wind turbines, etc.)***

(28) Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings, if the actions meet the constraints in 23 CFR 771.117(e). ***Examples include: Railroad projects that close or relocate at-grade crossings***

In accordance with 23 CFR 771.117(e), the proposed project cannot be processed as a C2 CE, if it involves -  
a. Acquisition of more than a minor amount of right-of-way  
b. Residential or non-residential displacements  
c. A Coast Guard, Individual Section 404 and/or a Section 10 permit  
d. A Section 106 finding of Adverse Effect  
e. A Section 4(f) Programmatic or Individual Evaluation  
f. A finding of May Affect, Likely to Adversely Affect to Threatened and Endangered Species  
g. Construction of temporary access, or the closure of existing road, bridge, or ramps, that would result in major traffic disruptions  
h. Changes in access control  
i. Floodplain encroachment other than functionally dependent uses (e.g., bridges, wetlands) or actions that facilitate open space use (e.g., recreational trails, bicycle and pedestrian paths)  
j. Construction activities in, across or adjacent to a river component designated or proposed for inclusion in the National System of Wild and Scenic Rivers  
k. No minor public or agency controversy on environmental grounds ( no opposition from any organized groups or agencies and no unresolved environmental coordination )  
l. If an EJ Analysis Report is required, the project must be processed as a D-level CE or higher level document For certification purposes, documentation is required to illustrate no significant impacts will occur to the following environmental resources and that no unusual circumstances exist that would warrant a higher level of NEPA document. Upload all supporting documentation to the project file.

Waterways:

Present; No Coast Guard, Individual 404, and/or Section 10 Permit required

Waterways Permit Type:

Regional General Permit



Environmental Document Level: C2  
PID 108160 MIA Great Miami River Trail Brdg  
Approved: 2/16/2021

<b>Waterways Permit Approval Date</b>	02/02/2021
<b>Isolated Wetland Permit</b>	No
<b>Endangered Species:</b>	Present; No finding of May Affect, Likely to Adversely Affect
<b>Endangered Species - Coordination</b>	May Affect, Not Likely to Adversely Affect
<b>Endangered Species - Coordination Date</b>	10/28/2019
<b>Endangered Species - Critical Habitat Present/Impacted</b>	
Rayed bean	
Snuffbox	
Indiana bat	
Northern long-eared bat	
<b>Endangered Species - Other Critical Habitat Present/Impacted:</b>	No
<b>100-Year Floodplain:</b>	Encroachment Within the SFHA is a Functionally Dependent Use
<b>EO 11988/NFIP Coordination and Documentation Completed:</b>	Yes
<b>NFIP Local Floodplain Coordinator Notification Date:</b>	11/17/2020
<b>Section 4(f):</b>	Present; No Programmatic Evaluation or Individual Evaluation Required
<b>Section 4(f) Determination:</b>	
Temporary No Use Exception - 774.13(d)	
de minimis	
<b>Section 4(f) Determination Date - 774.13(d)</b>	06/18/2019
<b>Section 4(f) Determination Date - de minimis</b>	06/18/2019
<b>Section 6(f):</b>	Not present
<b>Cultural Resources:</b>	Present; No Finding of Adverse Effect
<b>Cultural Resources Coordination:</b>	Minimum Potential to Cause Effect Appendix B
<b>Cultural Resources Coordination - ODOT Approval/SHPO Concurrent Date</b>	11/19/2018
<b>Tribal Consultation Summary/Remarks:</b>	

The Miami Tribe of Oklahoma participated as a consulting party. The Miami Tribe of Oklahoma responded without comment or



**Environmental Document Level: C2**  
PID 108160 MIA Great Miami River Trail Brdg  
Approved: 2/16/2021

objection on 12/03/2018.

Projects that meet C2 criteria are not anticipated to have impacts to the following environmental resources. If resources are present, documentation is only required if there is a potential for impacts.

<b>Air Quality:</b>	Studies Not Required
<b>Air Quality - Coordination with OES:</b>	No
<b>Noise:</b>	Studies Not Required
<b>Noise Coordination - OES Approval Date:</b>	10/10/2019
<b>Hazardous Materials - ESA Screening Conducted</b>	Yes
<b>Hazardous Materials - OES Approval Date:</b>	01/28/2019
<b>Phase I ESA Warranted Based on Coordination with OES:</b>	No Further Studies Warranted
<b>Farmland:</b>	Urbanized Area; No Impacts in Accordance With the Farmland MOU and 7 CFR 658
<b>Scenic Rivers</b>	No National Wild and Scenic River Within 1000 Feet of the Proposed Project Area
Projects that meet C2 criteria must be in accordance with ODOT's UP Guidance and activities conducted for Public Involvement are commensurate to the project's type and scope of work.	
<b>Underserved Populations</b>	Does Not Exceed UP Guidance Criteria; No UP Analysis Report Required and No UP Issues Raised During Public Involvement
<b>Public Involvement:</b>	Minimum PI Requirements Met; No Minor Public or Agency Controversy on Environmental Grounds
<b>Environmental Commitments</b>	Yes



## Environmental Commitments

### C2

1) The City of Piqua shall arrange for preparation of the required waterway permit applications on behalf of ODOT. The City of Piqua shall be responsible for the costs, studies and design of any necessary mitigation for wetland impacts, if required. ODOT shall ensure that all waterway necessary permits are secured prior to plan file. The Contractor will be required to adhere to all permit conditions for the duration of the project.

2) The City of Piqua shall provide documentation of MCD review and approval of the final plans prior to plan file.

3) The City of Piqua must arrange for a mussel survey and relocation consistent with the current Ohio Mussel Survey Protocol prior to the start of construction activities below the ordinary high water mark. The survey is to be undertaken within six months prior to the start of instream construction activities (or the previous field season, if construction is scheduled to begin in the spring). The Survey and Relocation Report is to be submitted to the District Environmental Office for coordination with USFWS. No instream work may occur until the survey and relocation are approved by USFWS.

4) The Project Design must ensure that project Maintenance of Traffic (MOT) for the Great Miami River Trail (GMRT) provide for the following:

The GMRT closure will be limited to 30 days.

Two weeks' advance notice of the detour posted on the GMRT, to alert users to the upcoming closures. During closure of the GMRT, a signed detour on local streets will be provided.

The existing GMRT river crossing must remain open to traffic until the new river crossing is completed.

5) The Project Designer must ensure that project Maintenance of Traffic (MOT) plan for the Great Miami River Water Trail provides for the following:

Boat traffic on the Great Miami River is to be maintained when safe for users.

If feasible, temporary portage locations will be provided within the project area for use during periods when the river must be closed to boat traffic.

Whenever the river is closed to boat traffic, advance notice of river closures is to be posted upstream and downstream of the bridge and at the nearest portage points upstream and downstream of the bridge.

When partial closure of the river is required, buoys, markers and/or signage to direct boaters to the correct side of the channel must be provided upstream and downstream of the bridge.

Signage type/design and placement shall be developed in consultation with the City of Piqua and MCD. Signage shall include details about duration of closures and detailed portage instructions.

At least 15 days advance notice of river closures are to be provided to Thomas Arbour at 614-265-6575 or Thomas.arbour@dnr.state.oh.us; Travis Mart at 937-323-1582 or travis.martin@dnr.state.oh.us

6) If on-the-water law enforcement is needed during any portion of the construction activities, the City of Piqua shall contact the ODNR Division of Ohio State Parks and Watercraft law enforcement supervisor, Travis Martin at Travis.Martin@dnr.state.oh.us or (937) 477-4790.

7) The ODOT Construction Engineer shall ensure that the individual periods of impacts to the Great Miami River Water Trail, the Great Miami River Trail, and Goodrich Giles Park are less than the total time of construction.



Approved: 2/16/2021

8) The Project Designer shall include the following note in the plans: **PROTECTION OF THE INDIANA BAT AND NORTHERN LONG-EARED BAT:** The project is located within the known habitat ranges of the federally-listed Indiana bat and northern long-eared bat. No trees shall be removed under this project from April 1 through September 30. All necessary tree removals must occur from October 1 through March 31. This requirement is necessary to avoid and minimize impacts to these species as required by the Endangered Species Act. For the purposes of this note, a tree is defined as a living, dying, or dead woody plant, with a trunk three inches or greater in diameter at a height of 4.5 feet above ground surface and with a minimum height of 13 feet.

9) The Project Designer shall include the following note in the plans: **PROTECTION OF DRINKING WATER RESOURCES:** The project is located within the boundaries of a designated sole source aquifer. Best construction practices are to be implemented to minimize water quality impacts. Idle equipment, petrochemicals, and toxic/hazardous materials shall not be stored near drainage ways, ditches, or streams. Refueling shall not be undertaken near drainage way, ditches, or stream. A spill containment kit is to be maintained on-site throughout construction activities. Spills of fuels, oils, chemicals, or other materials which could pose a threat to groundwater shall be cleaned up immediately. If the spill is a reportable amount, the local fire department (911), Piqua emergency coordinator (Sky Schelle at 937-778-2059 or 937-606-0405); local emergency coordinator (937-339-6400) and the OEPA (1-800-282-9378) must be contacted within 30 minutes of knowledge of the release.

10) On the applicable plan and profile sheet(s), the Project Designer shall label the portion of right-of-way Parcel 5 (N44-250120/N44-101542) located outside of the proposed temporary right-of-way line "PIQUA COAL FIRED PLANT O&M BOUNDARY DO NOT DISTURB".

11) The Project Designer shall include the following note in the plans: **PROTECTION OF GREAT MIAMI RIVER WATER TRAIL, GREAT MIAMI RIVER TRAIL, AND GOODRICH GILES PARK:** The Contractor shall install construction fencing along the project construction limits prior to the start of construction. Public access to areas of these resources outside of the project construction limits shall be maintained at all times. On lands associated with these resources, the Contractor is not permitted to stage equipment or materials outside of the established project construction limits.

At Goodrich Giles Park, the contractor shall, in consultation with the City of Piqua (Brian Brookhart, 937-778-2095, bbrookhart@piquaoh.org), install appropriate signage to alert users of construction activities and access restrictions. Necessary signage for the Great Miami River Recreation Trail and Great Miami River Water Trail is provided under Maintenance of Traffic.

The Contractor shall maintain access to the parking lot and at least three parking spaces within the Goodrich Giles Park at all times.

The Contractor will provide the construction schedule to the ODOT Construction Engineer and the City of Piqua (Brian Brookhart, 937-778-2095, bbrookhart@piquaoh.org) prior to the start of construction.

12) The Project Designer shall include the following note in the plans if the survey/relocation has not been completed at time of project sale: **PROTECTION OF MUSSELS:** No instream work within the Great Miami River may occur until the required mussel relocation has been completed and USFWS has accepted the relocation report.



**Environmental Document Level: C2**  
PID 108160 MIA Great Miami River Trail Brdg

Approved: 2/16/2021

13) The Project Designer shall include the following note in the in the plans: PRE-CONSTRUCTION NOTIFICATION AND POST-CONSTRUCTION INSPECTION:

The Contractor shall ensure the following individuals are invited to the pre-construction meeting and are provided an opportunity to inspect the project area prior to project close-out. Construction-related conditions identified by these individuals shall be addressed to their satisfaction.

Thomas Arbour, ODNR Water Trails Manager

614-265-6575

Thomas.Arbour@dnr.state.oh.us

Sarah Hippensteel-Hall, MCD Watershed Partnerships Manager

937-223-1271

shippensteel@miamiconservancy.org

ODNR, Division of Parks and Watercraft Area Supervisor

937-323-1582

Travis.Martin@dnr.state.oh.us

Roxanne Farrier, MCD

937-233-1278 Ext. X3230

RFarrier@miamiconservancy.org

Brian Brookhart

937-778-2095

bbrookhart@piquaoh.org

14) In the plans, the Project Designer shall provide for the use of native/wildflower seed mix (659.09 Class 4, 5, or 6) for seeding and mulching beginning at Sta. 111 to the east project terminus.

15) The project team shall work with ODNR Division of Parks and Watercraft to identify possible temporary portage locations within the project area for use during periods when the river must be closed to boat traffic.



### **Preparers and Approvals**

**Form Preparer:**

Libby Rushley  
Lawhon AND Associates  
1441 King Avenue, Columbus OH 43212  
lrushley@lawhon-assoc.com

**Approvals & Electronic Signatures**

<b>Approved &amp; Electronically Signed By:</b>	<b>Approval Date:</b>
Tricia Bishop (PROGRAM ADMIN 3)	2/16/2021





## **Appendix**

### **General**

Aerial Map.pdf

County Map.pdf

STIP Listing.pdf

USGS Quadrangle Topographical Map.pdf

### **Purpose and Need**

Purpose and Need Statement.pdf

### **Alternatives**

District Acceptance - Feasibility Study.pdf

### **ESA**

OES Recommendation - Screening Updated.pdf

OES Recommendations - Screening.pdf

### **Cultural Resources**

Minimal Potential to Cause Effect - Appendix B

### **Ecological**

Coordination with ODNR and USFWS.pdf

Coordination with USFWS Mussel Survey.pdf

Ecoregion Map.pdf

HUC-12 Map.pdf

Nationwide Rivers Inventory.pdf

NWI Map.pdf

ODNR Comments.pdf

Physiographic Regions Map.pdf

Scenic Rivers Buffer Map.pdf

Stream B Stream Stat.pdf

USFWS Comments Consult Form MIA-GMR Tr Br PID108160.pdf

USFWS Comments.pdf

### **Other Resources**

NRCS Comments.pdf



Water Source Protection Area Map.pdf

Well Log Data.pdf

**Section 4(f)**

OES Recreational 4(f) Determination 2.pdf

OES Recreational 4(f) Determination.pdf

Project Related Correspondence - 4f Commitment Mod.pdf

Section 4f Resources Map.pdf

**Section 6(f)**

LWCF Grant Listing.pdf

Section 6f Resources Map.pdf

**Underserved Populations**

Census Mapping.pdf

Public Housing Map.pdf

Underserved Populations Documentation Form.pdf

**Public Involvement**

District 7 Meeting Notes.pdf

News Article Piqua Daily Call 2-13-2019.pdf

News Article Piqua Daily Call 2-8-2019.pdf

Press Release.pdf

Property Owner Notification Letter.pdf

Public Comments Received.pdf

Public Meeting Exhibits.pdf

Public Meeting Handouts.pdf

Public Meeting Notification.pdf

Public Meeting Sign In Sheet.pdf

Public Notification Mailing List 2.pdf

Public Notification Mailing List.pdf

Response to Public Comments.pdf

Statement of Findings Posted 2.pdf

Statement of Findings Posted.pdf

**Permits**

Correspondence with Local Floodplain Administrator 11-2020.pdf



**Environmental Document Level: C2**  
**PID 108160 MIA Great Miami River Trail Brdg**  
**Approved: 2/16/2021**

Correspondence with Local Floodplain Administrator.pdf

District Hydraulic Engineer Approval of Hydraulic Analysis.pdf

FEMA FIRM.pdf

Floodplain 8-Step Analysis.pdf

Letter of Compliance - ODOT Form LD-51 - MCD.pdf

Letter of Compliance - ODOT Form LD-51.pdf

No Rise Certification - ODOT Form LD-50 11-2020.pdf

No Rise Certification - ODOT Form LD-50.pdf

ODOT Form LD-52.pdf

Statement of Findings 2.pdf

Statement of Findings.pdf

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## **Appendix B**

### **Piqua Reactor Demolition Grading Plan**

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## **Appendix C**

### **Supplements for Affected Environmental Conditions**

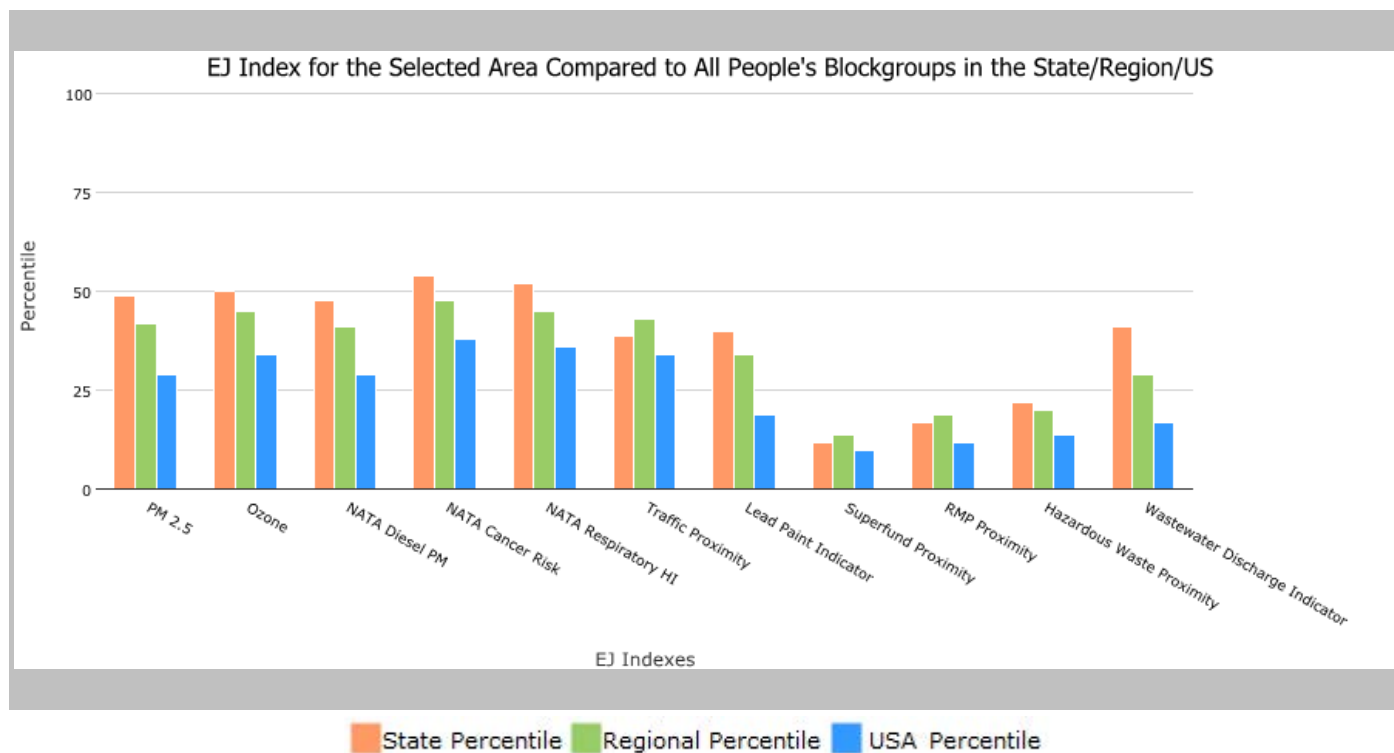
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5 mile Ring Centered at 40.131862,-84.234736, OHIO, EPA Region 5

Approximate Population: 26,944

Input Area (sq. miles): 78.53

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	49	42	29
EJ Index for Ozone	50	45	34
EJ Index for NATA* Diesel PM	48	41	29
EJ Index for NATA* Air Toxics Cancer Risk	54	48	38
EJ Index for NATA* Respiratory Hazard Index	52	45	36
EJ Index for Traffic Proximity and Volume	39	43	34
EJ Index for Lead Paint Indicator	40	34	19
EJ Index for Superfund Proximity	12	14	10
EJ Index for RMP Proximity	17	19	12
EJ Index for Hazardous Waste Proximity	22	20	14
EJ Index for Wastewater Discharge Indicator	41	29	17

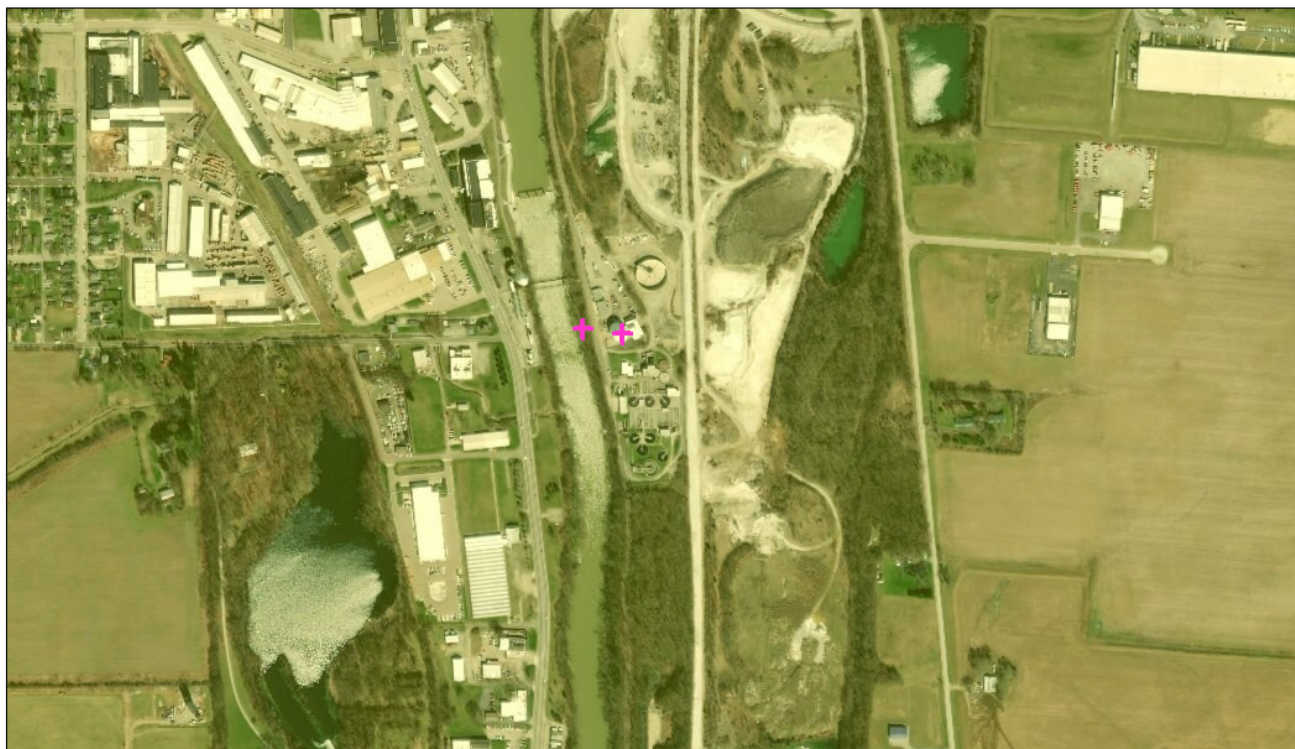


This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

5 mile Ring Centered at 40.131862,-84.234736, OHIO, EPA Region 5

Approximate Population: 26,944

Input Area (sq. miles): 78.53



January 17, 2019

Buffer Area

Digitized Point

1:9,028  
0 0.075 0.15 0.3 mi  
0 0.1 0.2 0.4 km  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

#### Sites reporting to EPA

Superfund NPL

1

Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)

3

## EJSCREEN Report (Version 2018)

5 mile Ring Centered at 40.131862,-84.234736, OHIO, EPA Region 5

Approximate Population: 26,944

Input Area (sq. miles): 78.53

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	11.7	11.4	79	10.8	73	9.53	90
Ozone (ppb)	44.5	44.4	53	42.6	83	42.5	71
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.835	0.997	43	0.932	<50th	0.938	50-60th
NATA* Cancer Risk (lifetime risk per million)	31	37	27	34	<50th	40	<50th
NATA* Respiratory Hazard Index	1.4	1.8	33	1.7	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	29	170	41	370	35	600	32
Lead Paint Indicator (% Pre-1960 Housing)	0.49	0.41	64	0.38	66	0.29	75
Superfund Proximity (site count/km distance)	0.2	0.09	91	0.12	87	0.12	86
RMP Proximity (facility count/km distance)	1.1	0.69	79	0.81	76	0.72	79
Hazardous Waste Proximity (facility count/km distance)	1.6	1.6	70	1.5	71	4.3	73
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0027	17	54	4.2	64	30	73
<b>Demographic Indicators</b>							
Demographic Index	23%	27%	55	28%	53	36%	36
Minority Population	10%	20%	49	25%	40	38%	22
Low Income Population	36%	33%	60	32%	63	34%	59
Linguistically Isolated Population	1%	1%	69	2%	60	4%	46
Population With Less Than High School Education	13%	11%	69	10%	70	13%	60
Population Under 5 years of age	6%	6%	55	6%	54	6%	52
Population over 64 years of age	17%	16%	64	15%	68	14%	70

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

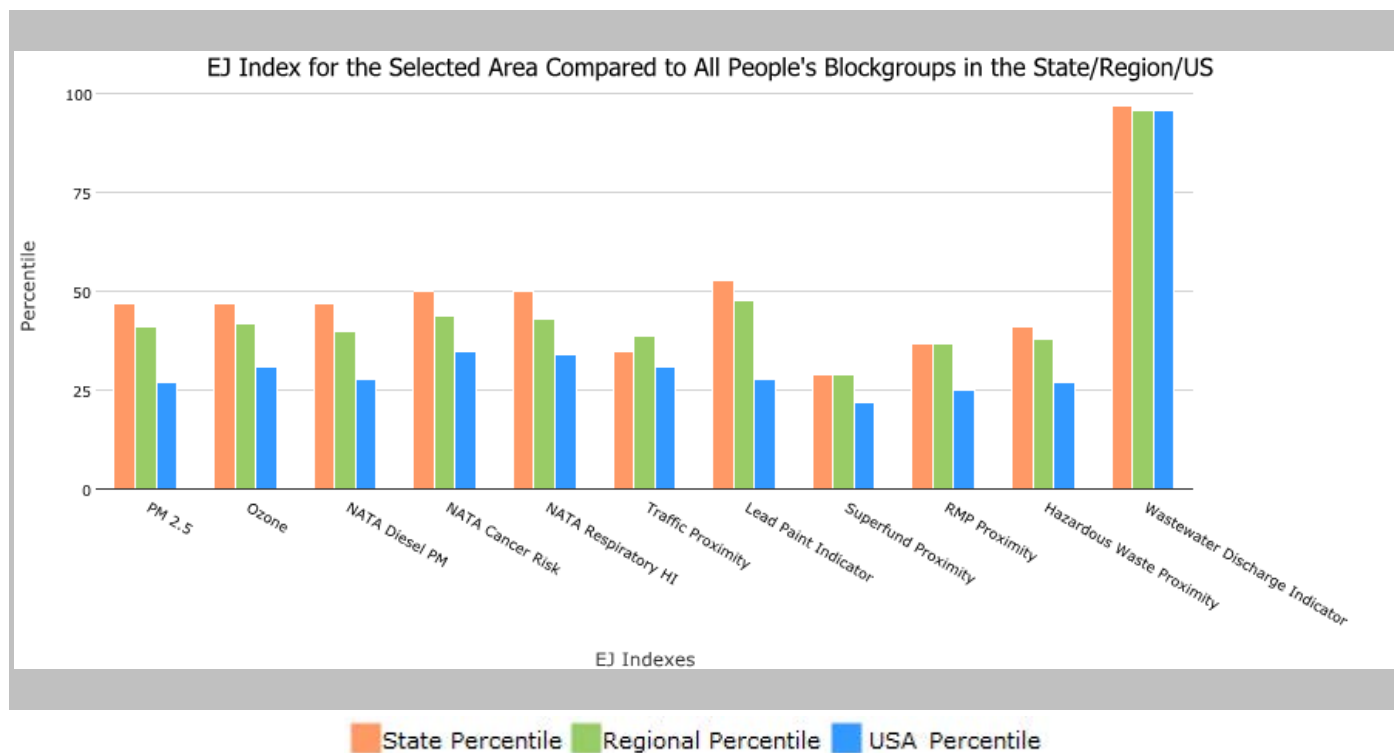
50 mile Ring around the Area, OHIO, EPA Region 5

Approximate Population: 1,762,211

Input Area (sq. miles): 7922.97

io, Decommissioned Nuclear Reactor Site (The study area contains 1 blockgroup(s) with zero po

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	47	41	27
EJ Index for Ozone	47	42	31
EJ Index for NATA* Diesel PM	47	40	28
EJ Index for NATA* Air Toxics Cancer Risk	50	44	35
EJ Index for NATA* Respiratory Hazard Index	50	43	34
EJ Index for Traffic Proximity and Volume	35	39	31
EJ Index for Lead Paint Indicator	53	48	28
EJ Index for Superfund Proximity	29	29	22
EJ Index for RMP Proximity	37	37	25
EJ Index for Hazardous Waste Proximity	41	38	27
EJ Index for Wastewater Discharge Indicator	97	96	96



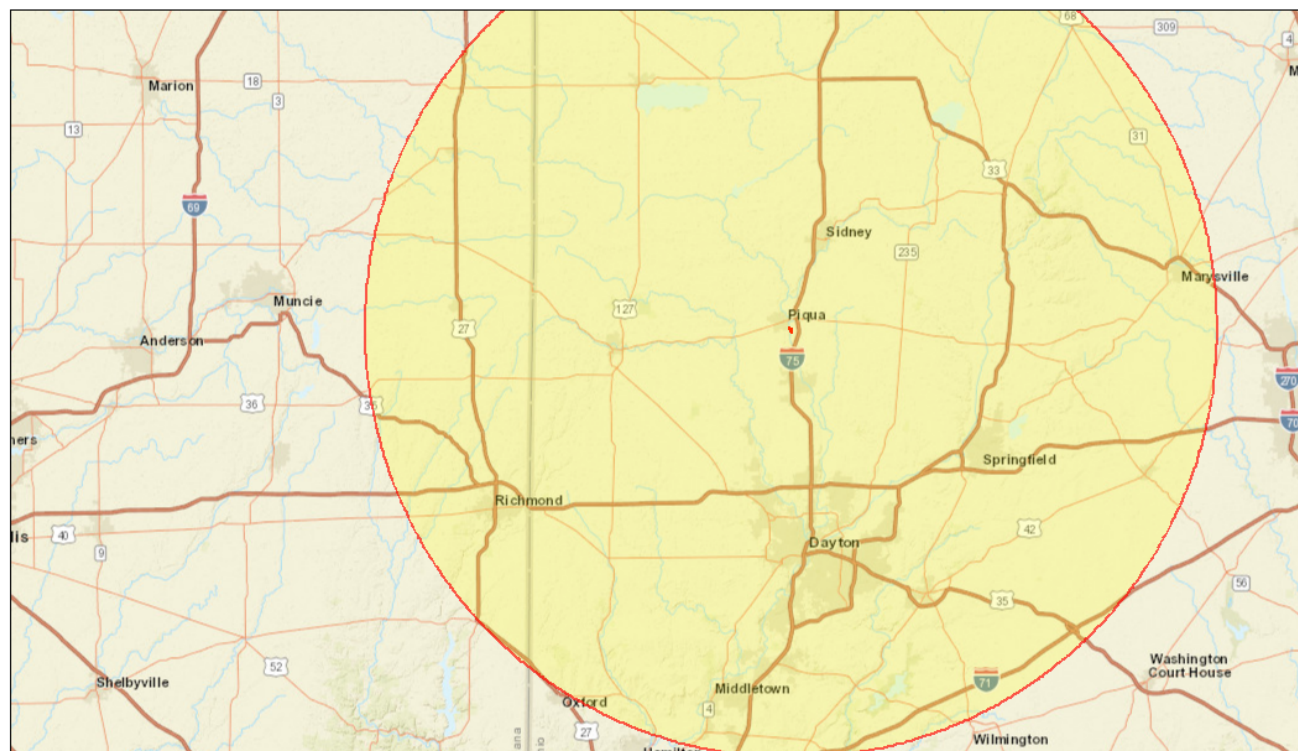
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

50 mile Ring around the Area, OHIO, EPA Region 5

Approximate Population: 1,762,211

Input Area (sq. miles): 7922.97

io, Decommissioned Nuclear Reactor Site (The study area contains 1 blockgroup(s) with zero po



October 9, 2018

Buffer Area

Digitized Polygon

1:1,155,581

0 10 20 40 mi

0 15 30 60 km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, OpenStreetMap contributors, and the GIS User Community

#### Sites reporting to EPA

Superfund NPL

14

Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)

129



## EJSCREEN Report (Version 2018)

50 mile Ring around the Area, OHIO, EPA Region 5

Approximate Population: 1,762,211

Input Area (sq. miles): 7922.97

io, Decommissioned Nuclear Reactor Site (The study area contains 1 blockgroup(s) with zero po

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	11.7	11.4	72	10.8	70	9.53	89
Ozone (ppb)	45.6	44.4	67	42.6	90	42.5	78
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.987	0.997	54	0.932	50-60th	0.938	60-70th
NATA* Cancer Risk (lifetime risk per million)	37	37	53	34	60-70th	40	<50th
NATA* Respiratory Hazard Index	1.7	1.8	47	1.7	60-70th	1.8	50-60th
Traffic Proximity and Volume (daily traffic count/distance to road)	120	170	69	370	57	600	53
Lead Paint Indicator (% Pre-1960 Housing)	0.41	0.41	56	0.38	59	0.29	70
Superfund Proximity (site count/km distance)	0.18	0.09	90	0.12	86	0.12	85
RMP Proximity (facility count/km distance)	0.66	0.69	67	0.81	62	0.72	67
Hazardous Waste Proximity (facility count/km distance)	1	1.6	60	1.5	61	4.3	65
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.23	17	91	4.2	92	30	92
<b>Demographic Indicators</b>							
Demographic Index	25%	27%	60	28%	57	36%	40
Minority Population	16%	20%	62	25%	54	38%	33
Low Income Population	34%	33%	56	32%	59	34%	55
Linguistically Isolated Population	1%	1%	70	2%	61	4%	46
Population With Less Than High School Education	11%	11%	61	10%	63	13%	53
Population Under 5 years of age	6%	6%	56	6%	55	6%	53
Population over 64 years of age	16%	16%	57	15%	62	14%	65

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

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# National Flood Hazard Layer FIRMette



84°14'24"W 40°8'8"N



USGS The National Map: Orthoimagery. Data refreshed October, 2020.

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Page C-7

84°13'46"W 40°7'41"N

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

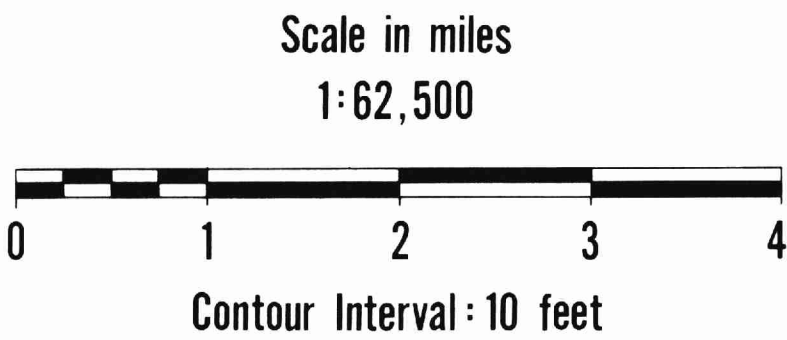
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/16/2020 at 2:36 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



# Ground-Water Resources of MIAMI COUNTY

by  
James J. Schmidt  
1984



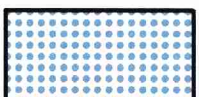
The ground-water characteristics of Miami County have been mapped regionally based upon interpretations of over 2600 water well records and the geology and hydrology. Water well data on the map were selected as typical for the area shown. Information regarding specific sites may be obtained from the Division of Water.

AREAS IN WHICH YIELDS OF 500 TO 1000, OR MORE, GALLONS PER MINUTE MAY BE DEVELOPED.



Permeable sand and gravel deposits beneath floodplain of Miami River. Properly constructed large diameter drilled wells may yield in excess of 1000 gallons per minute at depths of 95 to 150 feet.

AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE MAY BE DEVELOPED.



Regionally extensive, thick permeable deposits of sand and gravel. Extensive test drilling is recommended to locate coarse deposits at depths ranging from 40 to 155 feet.



Relatively shallow, permeable deposits of sand and gravel adjacent to Miami River. Potential yields of as much as 300 gallons per minute may be projected for properly constructed wells developed at depths of less than 75 feet.

AREAS IN WHICH YIELDS OF AS MUCH AS 75 GALLONS PER MINUTE MAY BE DEVELOPED.



Niagaran limestone aquifer beneath glacial drift of variable thickness. Wells range from 40 to 235 feet deep, although average well is less than 90 feet deep.

AREAS IN WHICH YIELDS OF 5 TO 20 GALLONS PER MINUTE MAY BE DEVELOPED.



Relatively shallow, basal Silurian limestone aquifer yields as much as 20 gallons per minute at depths of less than 100 feet. Deeper drilling to the non-water-bearing Ordovician shaly limestone is not recommended.



Ground water obtained from thin, not extensive, sand and gravel deposits interbedded with relatively thick layers of clayey till. Wells are developed at depths of less than 80 feet and deeper drilling into underlying bedrock may be non-productive.

AREAS IN WHICH YIELDS OF 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED.

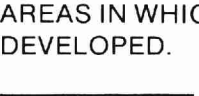


Thin to exceptionally thick unconsolidated deposits above thin limestone and shaly limestone bedrock. Thin layers of permeable sand and gravel may be encountered at average depths of less than 115 feet. However, deeper drilling to as much as 285 feet may encounter silty sand with meager to no usable ground-water supplies.



Relatively thin layers of sand and gravel interbedded with clayey till. Domestic supplies should be available. Deeper drilling into underlying impervious bedrock is not recommended.

AREAS IN WHICH YIELDS OF LESS THAN 2 GALLONS PER MINUTE MAY BE DEVELOPED.

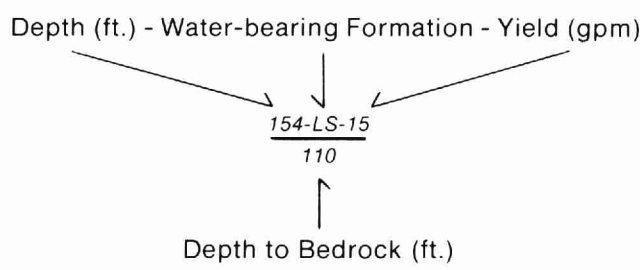


Clayey till usually less than 10 feet thick overlying non-water-bearing Ordovician shaly limestone bedrock. Meager supplies are developed, with cisterns and/or additional storage necessary to maintain daily water requirements.

- Domestic Well
- ⊙ Public or Industrial Well
- Ⓢ Well Site-Chemical Analysis

## FORMATIONS

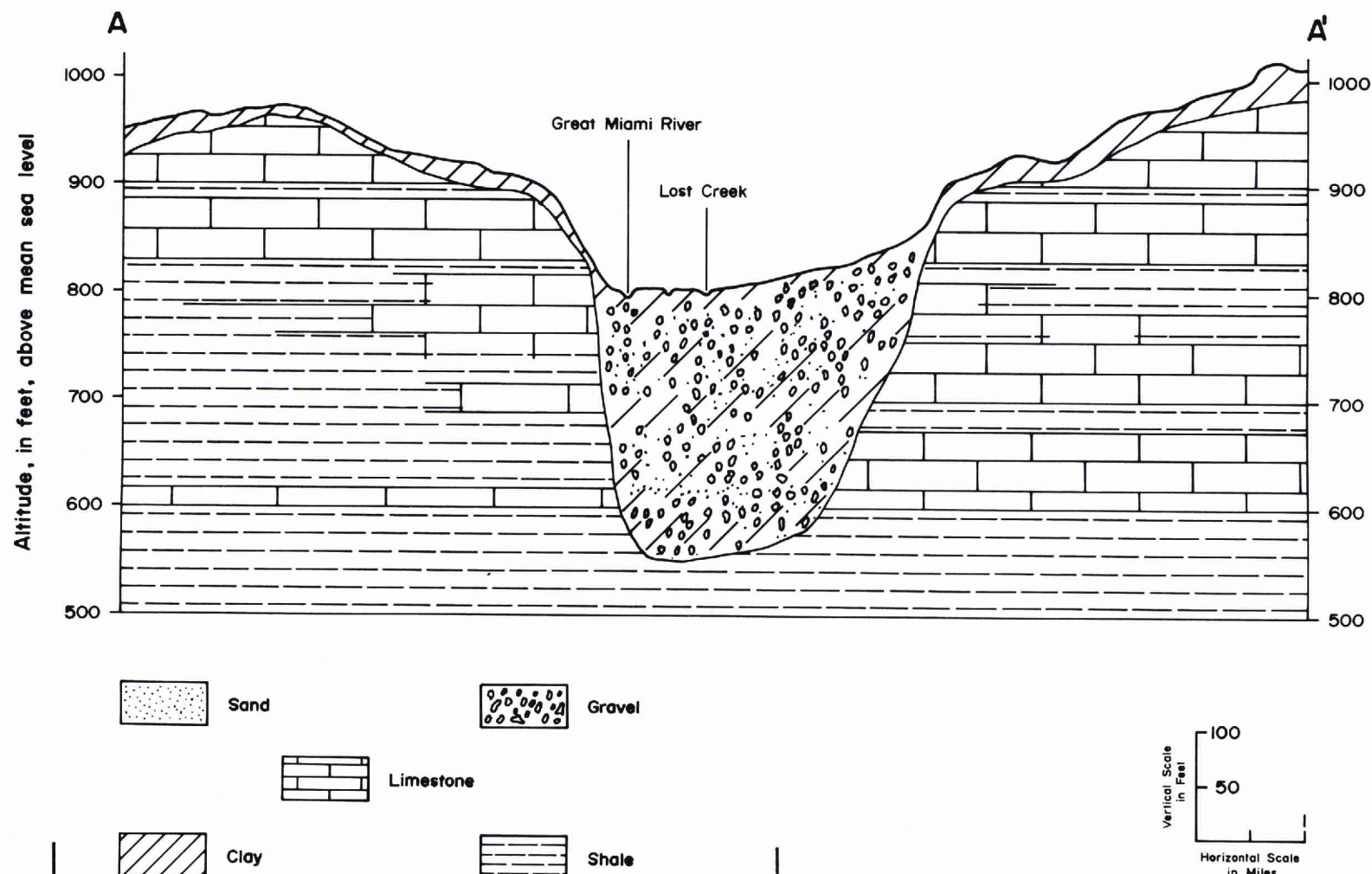
- LS - Limestone
- G - Gravel
- S - Sand
- FS - Fine Sand
- SH - Shale



**ODNR**  
OHIO DEPARTMENT OF  
NATURAL RESOURCES

Cartography: Douglas E. Keen

Published, 1984



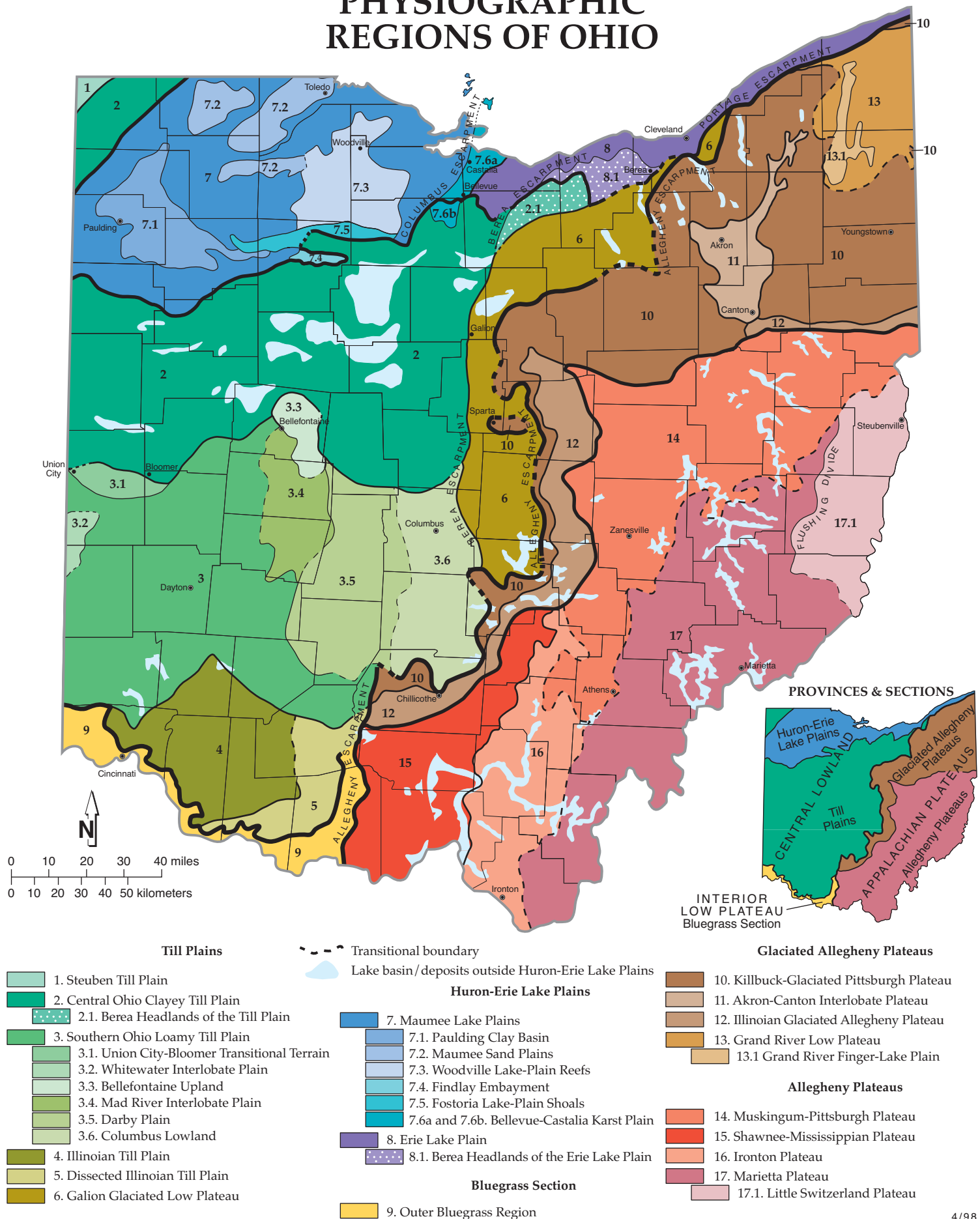
LOCATION	SITE	DEPTH	Fe IRON	HARDNESS AS CaCO <sub>3</sub>	DIS-SOLVED SOLIDS	Cl CHLORIDE	Na SODIUM	SO <sub>4</sub> SULFATES	AQUIFER
Piqua a	A	75	2.0	154	270	12	43	1.2	SG
Piqua (ODOT)	B	77	18	172	288	6.0	47	2	SG
Troy b	C	177	1.5	350	410	18	NA	55	SG

a. Test Well  
b. Well #6

Chemical Constituents in mg/l



# PHYSIOGRAPHIC REGIONS OF OHIO



# PHYSIOGRAPHIC REGIONS OF OHIO

Major Divisions	Provinces	Sections *	DISTINGUISHING CHARACTERISTICS OF REGIONS & DISTRICTS			GEOLOGY		BOUNDARIES			
			1. <b>Steuben Till Plain.</b> Hummocky terrain with rolling hills, interspersed flats and closed depressions; wetlands, few streams, deranged drainage; only a small part of the region is in Ohio; elevation 950'-1100', moderately low relief (60')			Wisconsinan-age (latest Ice-Age) loamy till from a northern source (Saginaw glacial lobe) over Mississippian-age Coldwater Shale		Southeast: edge of Wabash Moraine			
			2. <b>Central Ohio Clayey Till Plain.</b> Surface of clayey till; well-defined moraines with intervening flat-lying ground moraine and intermorainal lake basins; no boulder belts; about a dozen silt-, clay- and till-filled lake basins range in area from a few to 200 square miles; few large streams; limited sand & gravel outwash; elevation 700'-1150', moderate relief (100')			Clayey, high-lime Wisconsinan-age till from a northeastern source (Erie glacial lobe) and lacustrine materials over Lower Paleozoic-age carbonate rocks and, in the east, shales; loess thin to absent		North: Lake Plain; northeast: limit of Berea Sandstone; east: Berea Escarpment; south: Powell and Union City/Bloomer Moraines; northern segment boundaries: Wabash Moraine and lake plain			
			2.1. <b>Berea Headlands of the Till Plain.</b> Gently rolling to flat terrain of thin drift descending to Lake Erie; punctuated by more than 20 streamlined "whalebacks" of Berea Sandstone, 0.5 to 2.5 miles long, 30'-60' high; somewhat poorly drained; elevation 800'-1000', low relief (20')			Thin, clayey, medium-lime Wisconsinan-age till over resistant Mississippian-age Berea Sandstone		South: limit of Berea Sandstone; elsewhere: Berea Escarpment and/or margin of highest Pleistocene lake			
Till Plains			3. <b>Southern Ohio Loamy Till Plain.</b> Surface of loamy till; end and recessional moraines, commonly associated with boulder belts, between relatively flat-lying ground moraine, cut by steep-valleyed large streams; stream valleys filled with outwash and alternate between broad floodplains and narrows; buried valleys common; elevation 530'-1150', moderate relief (200')			Loamy, high-lime Wisconsinan-age till, outwash, and loess over Lower Paleozoic-age carbonate rocks and, in the east, shales		East: Berea and Allegheny Escarpments; north: Powell and Union City/Bloomer Moraines; south: limit of Wisconsinan-age till			
			3.1. <b>Union City-Bloomer Transitional Terrain.</b> Well-defined moraines with low-relief, hummocky ground moraine like the Central Ohio Clayey Till Plain to the north; loamy till with loess cap like Southern Ohio Loamy Till Plain to the south; elevation 920'-1075', moderately low relief (30')			Loamy, high-lime Wisconsinan-age till with thin loess cap over Silurian-age dolomites		North: Bloomer Moraine and limit of loamy till; south: Union City Moraine			
			3.2. <b>Whitewater Interlobate Plain.</b> An upland between two converging glacial lobes with hummocky moraines, moraine complexes, kames, boulder belts, and broad outwash trains/plains; contains highest elevations in Indiana (1257') and in adjacent Ohio counties (1240'); elevation in Ohio 980'-1240', moderate relief (150')			Loamy, high-lime Wisconsinan-age till and sand and gravel outwash over resistant Silurian-age carbonate rocks (north) and less resistant Ordovician-age shales and limestones (south)		North: limit of Knightstown/Farmersville Moraines and kame fields; east: high, dissected hills draining to Whitewater River			
			3.3. <b>Bellevuefontaine Upland.</b> Moderately high relief (250') dissected topography with moraine complexes, boulder belts, high-gradient major streams, caves and sinkholes; few glacial depressions/kettles compared to surrounding areas; elevation 1100'-1549', includes highest elevation in Ohio (Campbell Hill, 1549')			Loamy, high-lime Wisconsinan-age till over generally deeply buried Silurian- to Devonian-age carbonate rocks and Ohio Shale		North: areas with hilltops above 1200'; elsewhere: hilltops above about 1300'			
			3.4. <b>Mad River Interlobate Plain.</b> Area between two major converging glacial lobes with extensive outwash, outwash terraces, and bordering moraines; springs and cool, ground-water-fed surface waters; elevation 800'-1350', moderate relief (200')			Loamy, high-lime Wisconsinan-age till and sand and gravel outwash over Silurian- to Devonian-age carbonate rocks and Ohio Shale		East and north: rear edge of Cable Moraine Complex; south: outwash to Clifton Gorge; west: western edge of Mad River Outwash			
			3.5. <b>Darby Plain.</b> Moderately low relief (25'), broadly hummocky ground moraine with several broad, indistinct recessional moraines; between hummocks are broad, poorly drained swales which held wet prairies/meadows in pioneer days; few large streams; elevation 750'-1100'			Loamy, high-lime Wisconsinan-age till and sparse outwash over Silurian- and Devonian-age carbonate rocks and Ohio Shale in the southeast		South and west: front of Reesville and rear of Cable Moraines; north: Powell Moraine; east: increasing eastward slope (see 3.6)			
			3.6. <b>Columbus Lowland.</b> Lowland surrounded in all directions by relative uplands, having a broad regional slope toward the Scioto Valley; many larger streams; elevation 600'-850' (950' near Powell Moraine), moderately low relief (25')			Loamy, high-lime (west) to medium-lime (east) Wisconsinan-age till and extensive outwash in Scioto Valley over deep Devonian- to Mississippian-age carbonate rocks, shales, and siltstones		North: Powell Moraine; east and south: Berea and/or Allegheny Escarpments; west: flatter and higher Darby Plain			
			4. <b>Illinoian Till Plain.</b> Rolling ground moraine of older till generally lacking ice-constructional features such as moraines, kames, and eskers; many buried valleys; modern valleys alternating between broad floodplains and bedrock gorges; elevation 600'-1100', moderately low relief (50')			Silt-loam, high-lime, Illinoian-age till with loess cap; soils leached several feet; underlain by Ordovician- and Silurian-age carbonate rocks and calcareous shales		North: Wisconsinan glacial margin (Cuba and Hartwell Moraines); elsewhere: limit of common till-covered hillslopes			
			5. <b>Dissected Illinoian Till Plain.</b> Hilly former till plain in which glacial deposits have been eroded from many valley sides; relatively high stream density; elevation 600'-1340', moderate relief (200')			Hilltops of high-lime Illinoian-age till with loess cap; slopes of bedrock- and till-derived colluvium and Ordovician- and Silurian-age carbonate rocks and calcareous shales		East: maximum glacial margin; elsewhere: limit of general absence of till on hillslopes			
			6. <b>Galion Glaciated Low Plateau.</b> Rolling upland transitional between the gently rolling Till Plain and the hilly Glaciated Allegheny Plateau; mantled with thin to thick drift; elevation 800'-1400', moderate relief (100')			Medium- to low-lime Wisconsinan-age till over Mississippian-age shales and sandstones		North: limit of Berea Sandstone; west: Berea Escarpment; south and east: Allegheny Escarpment			
			7. <b>Maumee Lake Plains.</b> Flat-lying Ice-Age lake basin with beach ridges, bars, dunes, deltas, and clay flats; contained the former Black Swamp; slightly dissected by modern streams; elevation 570'-800', very low relief (5')			Pleistocene-age silt, clay, and wave-planed clayey till over Silurian- and Devonian-age carbonate rocks and shales		Northeast: Lake Erie; elsewhere: margin of highest Pleistocene lake			
			7.1. <b>Paulding Clay Basin.</b> Nearly flat lacustrine plain; most clayey of all Lake Plain subregions; low-gradient, highly meandering streams; easily ponded soils; elevation 700'-725', extremely low relief (less than 5')			Pleistocene-age lacustrine clay over clay till and Silurian-age dolomites		Northeast: subdued ("drowned") remnant of Defiance Moraine; elsewhere: limit of lacustrine clay			
			7.2. <b>Maumee Sand Plains.</b> Lacustrine plain mantled by sand; includes low dunes, inter-dunal pans, beach ridges, and sand sheets of glacial lakeshores; well to poorly drained; elevation 600'-800', very low relief (10')			Late Wisconsinan-age sand over clay till and lacustrine deposits; Silurian- and Devonian-age carbonate rocks and shales buried deeply.		Limit of sandy deposits and/or low dunes			
			7.3. <b>Woodville Lake-Plain Reefs.</b> Very low relief (10') lacustrine plain with low dunes and lake-margin features, punctuated by more than 75 ancient bedrock reefs rising 10' to 40' above the level of the plain and ranging in area from 0.1 to 3.0 square miles; the oblong reefs are thinly draped with drift; elevation 600'-775'			Thin to absent Wisconsinan-age wave-planed clay till, lacustrine deposits, and sand over Silurian-age reefal Lockport Dolomite		Limit of thinly mantled Lockport Dolomite (Bowling Green Fault to the west and the Defiance Moraine to the south)			
			7.4. <b>Findlay Embayment.</b> Very low relief (10'), broadly rolling lacustrine plain; embayment of ancestral Lake Erie in which relatively coarse lacustrine sediments collected; elevation 775'-800'			Silty to gravely Wisconsinan-age lacustrine deposits and wave-planed clayey till over Silurian-age Lockport Dolomite		West: 775' beach ridge; north: Defiance Moraine; south: margin of highest Pleistocene lake level			
			7.5. <b>Fostoria Lake-Plain Shoals.</b> Portion of the Defiance Moraine lightly eroded by shallow Lake Maumee with low north-south trending hillocks and shallow, closed depressions; many sandy areas; elevation 750'-825', low relief, decreasing westward (10'-15')			Silty to gravely Wisconsinan-age lacustrine deposits and wave-planed clay till over deeply covered Silurian-age dolomite		South and east: unmodified Defiance Moraine; elsewhere: very low-relief lake plain			
			7.6a and 7.6b. <b>Bellevue-Castalia Karst Plain.</b> Hummocky plain of rock knobs and numerous sinkholes, large solution features, and caves; large springs; thinly mantled by drift; region straddles both Lake Plain (7.6a) and Till Plain (7.6b); 7.6a has greatest relief of any Lake Plain region (25'); elevation 570'-825'			Columbus and Delaware Limestones overlain by thin clay till in 7.6b, and thin silty and sandy Wisconsinan-age lacustrine deposits and wave-planed clay till in 7.6a		Limit of thinly mantled Columbus and Delaware Limestones, which is marked in the west by the Columbus Escarpment			
			8. <b>Erie Lake Plain.</b> Edge of very low-relief (10') Ice-Age lake basin separated from modern Lake Erie by shoreline cliffs; major streams in deep gorges; elevation 570'-800'			Pleistocene-age lacustrine sand, silt, clay, and wave-planed till over Devonian- and Mississippian-age shales and sandstones		North: Lake Erie; south: margin of highest Pleistocene lake			
			8.1 <b>Berea Headlands of the Erie Lake Plain.</b> Portion of the Erie Lake Plain underlain by resistant Berea Sandstone; several large sandstone headlands jut into the Ice-Age lake basin; contains several streamlined "whalebacks" of Berea Sandstone, 0.5 to 2.0 miles long, 20'-35' high; poorly drained; elevation 670'-800', very low relief (10')			Thin lacustrine deposits over thin, wave-planed, clayey, medium-lime Wisconsinan-age till; underlain by resistant Berea Sandstone		North: portion of Lake Plain underlain by soft shales; south: margin of highest Pleistocene lake			
			9. <b>Outer Bluegrass Region.</b> Moderately high relief (300') dissected plateau of carbonate rocks; in east, caves and other karst features relatively common; in west, thin, early drift caps narrow ridges; elevation 455'-1120'			Ordovician- and Silurian-age dolomites, limestones, and calcareous shales; thin pre-Wisconsinan drift on ridges in west; silt-loam colluvium		Eastern segment: maximum glacial margin and high eastern ridges capped by noncarbonate rocks; connected by Ohio River bluffs to western segment which is bounded by nondissected till plain			
			10. <b>Killbuck-Glaciated Pittsburgh Plateau.</b> Ridges and flat uplands generally above 1200', covered with thin drift and dissected by steep valleys; valley segments alternate between broad drift-filled and narrow rock-walled reaches; elevation 600'-1505', moderate relief (200')			Thin to thick Wisconsinan-age clay to loam till over Mississippian- and Pennsylvanian-age shales, sandstones, conglomerates and coals		West and north: resistant sandstones of the Allegheny and Portage Escarpments; south and east: Wisconsinan glacial margin			
			11. <b>Akron-Canton Interlobate Plateau.</b> Hummocky area between two converging glacial lobes dominated by kames, kame terraces, eskers, kettles, kettle lakes, and bogs/fens; deranged drainage with many natural lakes; elevation 900'-1200', moderate relief (200')			Sandy Wisconsinan-age and older drift over Devonian- to Pennsylvanian-age sandstones, conglomerates and shales		Limit of common, sandy ice-contact features and deposits			
			12. <b>Illinoian Glaciated Allegheny Plateau.</b> Dissected, rugged hills; loess and older drift on ridgetops, but absent on bedrock slopes; dissection similar to unglaciated regions of the Allegheny Plateau; elevation 600'-1400', moderate relief (200')			Colluvium and Illinoian-age till over Devonian- to Pennsylvanian-age shales, siltstones and sandstones		North and west: Wisconsinan glacial margin; south and east: Illinoian (maximum) glacial margin			
			13. <b>Grand River Low Plateau.</b> Gently rolling ground and end moraine having thin to thick drift; poorly drained areas and wetlands relatively common; elevation 760'-1200', low relief (20') except near Grand River Valley (200')			Clayey, low-lime Wisconsinan-age till over deeply buried, soft Devonian-age shales and near-surface Mississippian-age sandstones and shales		North: Portage Escarpment; south and west: Defiance Moraine; southeast: increasing relief from proximity of buried Pennsylvanian-age sandstones			
			13.1. <b>Grand River Finger-Lake Plain.</b> Very low relief (10') lake deposits in steep-sided troughs (200' relief) within the Grand River Low Plateau; cut by glacial and stream erosion; extensive wetlands; elevation 800'-900'			Surficial lacustrine clay and drift over deeply buried, soft Devonian-age shales		Margins of steeply sloping troughs containing the Grand River and parts of Rock and Mosquito Creeks			
			14. <b>Muskingum-Pittsburgh Plateau.</b> Moderately high to high relief (300'-600') dissected plateau having broad major valleys that contain outwash terraces, and tributaries with lacustrine terraces; medium-grained bedrock sequences coarser than those in Marietta Plateau (17) but finer than those in Ironton Plateau (16); remnants of ancient Teays-age drainage system uncommon; elevation 650'-1400'			Mississippian and Pennsylvanian-age siltstones, shales, sandstones and economically important coals and claystones; Wisconsinan-age sand, gravel, and lacustrine silt; silt-loam colluvium		North and west: maximum glacial margin; southeast: transition to finer grained bedrock; southwest: transition to coarser grained bedrock			
			15. <b>Shawnee-Mississippian Plateau.</b> High relief (400'-800'), highly dissected plateau of coarse and fine grained rock sequences; most rugged area in Ohio; remnants of ancient lacustrine clay-filled Teays drainage system are extensive in lowlands, absent in uplands; elevation 490'-1340'			Devonian- and Mississippian-age shales, siltstones, and locally thick sandstones; Pleistocene-age sandy outwash in Scioto River; Teays-age Minford Clay; silt-loam and channery colluvium		North: Maximum glacial margin; west: carbonate bedrock; east: limit of Mississippian-age bedrock			
			16. <b>Ironton Plateau.</b> Moderately high relief (300') dissected plateau; coarser grained coal-bearing rock sequences more common than in other regions of the Allegheny Plateau; common lacustrine clay-filled Teays Valley remnants; elevation 515'-1060'			Pennsylvanian-age (Pottsville, Allegheny and Conemaugh Groups) cycles of sandstones, siltstones, shales and economically important coals; Pleistocene (Teays)-age Minford Clay; silt-loam and channery colluvium		West: limit of common Pennsylvanian-age bedrock; north and east: gradation to finer rock sequences			
			17. <b>Marietta Plateau.</b> Dissected, high-relief (generally 350', to 600' near Ohio River) plateau; mostly fine-grained rocks; red shales and red soils relatively common; landslides common; remnants of ancient lacustrine clay-filled Teays drainage system common; elevation 515'-1400'			Pennsylvanian-age Upper Conemaugh Group through Permian-age Dunkard Group cyclic sequences of red and gray shales, and siltstones, sandstones, limestones and coals; Pleistocene (Teays)-age Minford Clay; red and brown silty-clay loam colluvium; landslide deposits		North and west: transition to medium-grained Lower Conemaugh rocks; east: Flushing Divide			
			17.1. <b>Little Switzerland Plateau.</b> Highly dissected, high-relief (generally 450', to 750' along Ohio River) plateau; mostly fine-grained rocks; red shales and red soils relatively common; landslides common; high-gradient shale-bottomed streams subject to flash flooding; no remnants of ancient Teays drainage system; elevation 540'-1400'			Similar to Marietta Plateau but lacking Pleistocene (Teays)-age Minford Clay		North: transition to medium-grained rocks; west and south: Flushing Divide; east: Ohio River			
APPALACHIAN HIGHLANDS			APPALACHIAN PLATEAUS								
			Glaciated Allegheny (Southern New York) Plateaus								
			Allegheny (Kanawha) Plateaus								

\* Section names modified from Fenneman (1938, 1946).

**From:** Seymour, Megan

**Sent:** Wednesday, June 30, 2021 12:42 PM

**To:** Mcfadden, Thomas Steele (Steele) CIV USARMY CELRL (USA)

**Subject:** [Non-DoD Source] Re: [EXTERNAL] Project Consultation and Bat habitat locations

TAILS: 03E15000-2021-TA-0445

Thank you Steele,

The US Fish and Wildlife Service has reviewed your survey report and we agree that the buildings proposed for demolition are unlikely to support federally listed bat species. Therefore demolition of these structures within the next 3 years is not likely to result in take of Indiana bat (*Myotis sodalis*) or northern long-eared bat (*Myotis septentrionalis*).

If you have additional questions, please let me know.

Sincerely,

Megan Seymour

Wildlife Biologist

U.S. Fish and Wildlife Service

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