

**Hardin Solar Energy II LLC
Case No. 20-1321-EL-BGA**

Application Part 11 of 12

Part 11 includes:

- **Exhibit G U.S. Fish and Wildlife Service Communication December 2019**
- **Exhibit H ODNR-DOW January 2020**
- **Exhibit I TRC Hardin Raptor Nest Survey May 2020**
- **Exhibit J Directionally Drilled Installations Inadvertent Return Plan**
- **Exhibit K TRC Phase I Archaeological Survey Report July 2020**

Date Filed: July 31, 2020

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Exhibit G

U.S. Fish and Wildlife Service Communication

December 2019

Radford, Thomas

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Monday, December 16, 2019 9:03 AM
To: Radford, Thomas
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us; mretterer@pheasantsforever.org; Lori Stevenson
Subject: [EXTERNAL] Hardin Solar III Energy Center Project, Hardin Co. (TRC No. 370853)
Attachments: Ohio Solar Site Pollinator Habitat Planning and Assessment Form v.9 FINAL_5_3_2018.pdf

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2020-TA-0416

Dear Mr. Radford,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees ≥ 3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥ 3 inches dbh cannot be avoided, we recommend that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nlel/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

The Service is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. Attached for your use is the Ohio Solar Site Pollinator Habitat Planning and Assessment Form. This form was developed by the OPHI Solar Pollinator Program Advisory Team. We recommend that the areas between the solar panels be planted with legumes and wildflowers (i.e. forbs) that are beneficial to pollinators and other wildlife instead of non-native grass. Pollinators are beneficial to agricultural communities like the project area because they pollinate many varieties of fruits and vegetables. The recommended legumes and forbs are short (low-growing) so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should allow the project proponent to minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators (e.g., monarch butterfly and the federally listed rusty patched bumblebee) while reducing storm water runoff, standing water, and erosion. Native plants can act as host plants for insect larva while flowering plants provide nectar sources for adult butterflies as well as other pollinators such as hummingbirds. Seeds from these plants can also provide food for a wide variety of bird species. Please contact the Ohio Pollinator Habitat Initiative (<http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org) for further information on solar power facility pollinator plantings.

Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
Alsike Clover	<i>Trifolium hybridum</i>
Brown-eyed Susan	<i>Rudbeckia triloba</i>
Butterfly Milkweed	<i>Asclepias tuberosa</i>
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional

information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrice M. Ashfield". The signature is fluid and cursive, with the first name "Patrice" being more prominent.

Patrice M. Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parson, ODNR-DOW

Exhibit H

**Ohio Department of Natural Resources
Division of Wildlife
Communication**

January 8, 2020

DICKINSON  WRIGHT_{PLLC}

Attorneys for Hardin Solar Energy II LLC



Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate

John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

January 8, 2020

Thomas Radford
TRC Environmental Corporation
1382 W. Ninth St., Suite 400
Cleveland, Ohio 44113

Re: 19-1040; Hardin Solar III Energy Center Project

Project: The proposed project involves the construction of a photovoltaic solar facility.

Location: The proposed project is located in Marion, Roundhead, and McDonald Townships, Hardin County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The Division of Wildlife is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. Attached for your use is the Ohio Solar Site Pollinator Habitat Planning and Assessment Form. This form was developed by the OPHI Solar Pollinator Program Advisory Team. We recommend that the areas between and around the solar panels be planted with legumes and wildflowers (i.e. forbs) that are beneficial to pollinators and other wildlife and reduce use of non-native grass and gravel. The recommended legumes and forbs listed below are low-growing so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators while reducing storm water runoff, standing water, and erosion. Please contact the Ohio Pollinator Habitat Initiative <http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org for further information on solar power facility pollinator plantings.

Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
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Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the

DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the purple lilliput (*Toxolasma lividus*), a state endangered mussel, and the pondhorn (*Unio merus tetralasmus*), a state threatened mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2016) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federal candidate snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, the project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

Exhibit I

Hardin Raptor Nest Survey TRC Environmental Corporation

May 2020

RAPTOR NEST SURVEY REPORT

Hardin Solar II Energy Center

Addendum 1

Hardin County, Ohio

May 2020

TRC PROJECT NO. 370853.0000.0000



Prepared For:

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CONFIDENTIAL BUSINESS INFORMATION

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Attachments

Attachment A – IPaC Report

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Attachment C – Photographic Record

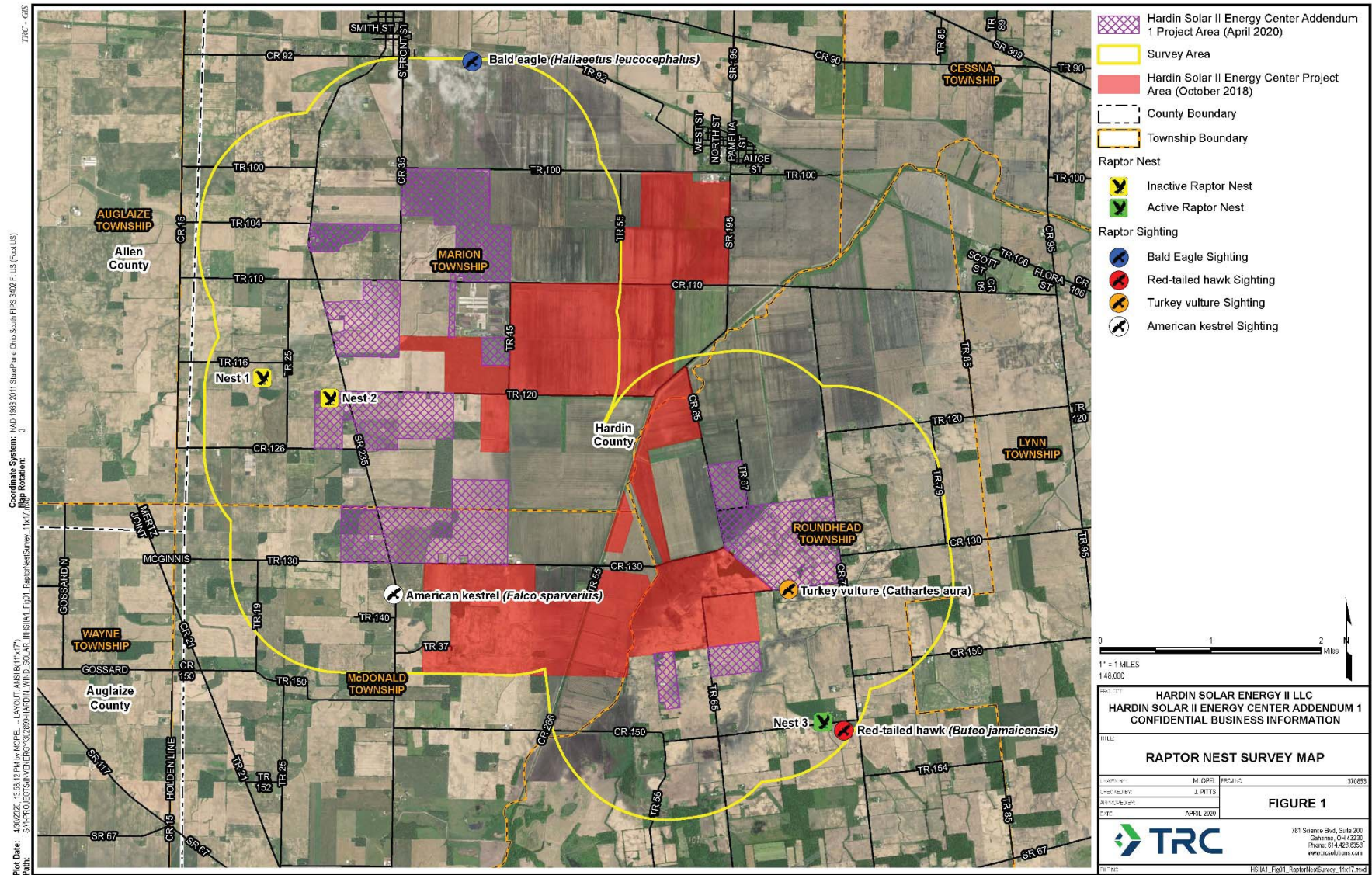
ACRONYMS

GPS	Global Positioning System
HSE II	Hardin Solar Energy II LLC
IPaC	Information for Planning and Conservation
NLCD	National Land Cover Database
October 2018 Project Area	October 2018 Hardin Solar II Energy Center Project Area
October 2018 Report	October 2018 Hardin Solar II Energy Center Raptor Nest Survey Report
ODNR	Ohio Department of Natural Resources
Project	Hardin Solar II Energy Center Project
Project Area	Hardin Solar II Energy Center Addendum 1 Project Area
PWS	Professional Wetland Scientist
Report	Addendum 1
Survey	Raptor Nest Survey
Survey Area	Hardin Solar II Energy Center Raptor Nest Addendum 1 Survey Area
TRC	TRC Environmental Corporation
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

On behalf of Hardin Solar Energy II LLC (HSE II), TRC Environmental Corporation (TRC) has prepared this Addendum 1 (Report) to the *October 2018 Hardin Solar II Energy Center Raptor Nest Survey Report* (October 2018 Report) for the Hardin Solar II Energy Center Project (Project) located in Hardin County, Ohio (TRC Environmental Corporation, 2018). This Report contains the methodology and results of the Raptor Nest Survey (Survey) investigations performed by TRC from March 17th through March 20th, 2020. Combined with the October 2018 Report, this Addendum ensures the Project has been adequately screened for the presence of raptor nests. The field surveys for this Project were performed by Mr. Shane Brodnick, Professional Wetland Scientist (PWS) and Mr. Thomas Radford of TRC, who have over 15 years of combined experience. The Project is located in Marion, McDonald, and Roundhead Townships, Hardin County, Ohio (Figure 1). The Hardin Solar II Energy Center Addendum 1 Project Area (Project Area) is bisected by Township Road 120 (east/west) and is bounded by Township Road 100 on the north, County Road 75 on the east, and private landholdings to the south and west. The Survey Area includes the Project Area and an additional 1-mile (1.6 kilometers) buffer and covers approximately 19,156 acres (7,752 hectares). The objective of the Survey was to locate, identify, and evaluate raptor nests within the Survey Area.

Confidential Business Information



2.0 METHODS

2.1 Background Resource Review

Prior to conducting any ground-based surveys, TRC personnel completed a background literature review of the Survey Area focused on obtaining information to identify high potential nesting areas to aid in the Survey field work. The sources utilized for the background literature review included: the Information for Planning and Conservation (IPaC) tool (USFWS, 2020a), National Land Cover Database (NLCD) (USGS, 2019), technical information requested from the United States Fish and Wildlife Service (USFWS) (USFWS, 2020), and an Environmental Review from Ohio Department of Natural Resources (ODNR) (ODNR, 2020a).

2.2 Field Survey Methodology

Due to the absence of specific solar energy project guidance, TRC conducted the ground-based Raptor Nest Survey utilizing the most applicable methods outlined in ODNR's *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio* (ODNR, 2019). TRC biologists conducted the Survey within the Survey Area from public right-of-way. The fieldwork for this Survey was completed prior to leaf out. One (1) TRC biologist drove the vehicle, while the other biologist visually searched for raptor nests. The search was aided by a 36x magnification spotting scope, which was utilized by periodically stopping the vehicle and scanning the Study Area throughout the Survey. The Survey was done in line transects from west to east, following the orientation of the existing parallel roads for the entirety of the Survey Area. When a nest was identified, a global positioning system (GPS) coordinate of the nest was captured. The nest quality rating was given utilizing observations of the substrate type (i.e. small branches), diameter, condition of substrate (i.e. loose branches, deficient substructure), and opacity of the nest substrate. During inspection of a nest, it was assessed by qualified TRC personnel and a poor, moderate, or good, quality rating was assigned using the results of the observations and best professional judgement. For all active raptor nests that were identified, biologists exercised caution when in proximity to the nest to avoid disturbance to nesting raptors. Any raptor activity observed during the surveys was noted as an incidental observation and the location recorded utilizing a GPS. To determine if the observed individual was associated with a nest, the behaviors and movements of the individuals were observed for a minimum of 30 minutes.

3.0 RESULTS

3.1 Summary

The objective of the Survey was to locate, identify, and evaluate raptor nests within the Survey Area. The Survey was performed from March 17th, 2020 through March 19th, 2020, prior to leaf out conditions. The Survey determined that there is evidence that raptors actively nest within the Survey Area. In total, three (3) nests were identified (Figure 1). Two (2) of the nests were observed to be inactive at the time of the Survey and one (1) nest was observed to be active (utilized by a red-tailed hawk). All of the nests observed were approximately 16-18 inches in diameter and made from small branches. No large nests typical of a bald eagle (4-5 feet wide and 2-4 feet deep) (USFWS, 2020b) were observed during the Survey. There were four (4) species of raptors observed within the Survey Area. The raptors identified included bald eagle (*Haliaeetus leucocephalus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), and turkey vulture (*Cathartes aura*).

3.2 Background Resources

3.2.1 National Land Cover Database

From a review of the NLCD (USGS, 2019), the Survey Area consists primarily of cultivated crop (91 percent). Most raptors are generally known to nest in forested areas with an adjacent food source (Cornell University, 2019). The Survey Area consists of approximately three (3) percent forest cover. Therefore, potential nesting habitat for raptors within the Survey Area is limited. Please see Table 3.2.2 for detailed information on land cover within the Survey Area.

Table 3.2.1 NLCD Land Cover within the Survey Area

Cover Type	Acres	Hectares	Percent (%)
Barren Land	3	1	< 1
Cultivated Crops	17,521	7,090	91
Deciduous Forest	534	216	3
Evergreen Forest	2	< 1	< 1
Emergent Herbaceous Wetland	10	4	< 1
Developed, Open Space	538	218	3
Developed, Medium Intensity	13	5	< 1
Developed, Low Intensity	105	43	< 1

Cover Type	Acres	Hectares	Percent (%)
Developed, High Intensity	12	5	< 1
Grassland/Herbaceous	328	133	2
Open Water	22	9	< 1
Woody Wetlands	68	28	< 1
Total	19,156	7,752	100

3.2.2 USFWS Information for Planning and Conservation

Based on review of the USFWS IPaC online tool and report (USFWS, 2020a) (Appendix A), the Survey Area is within the range of the bald eagle; a federally protected species under the Bald and Golden Eagle Protection Act of 1940 (USFWS, 2020a).

3.2.3 USFWS Technical Information Review

From the USFWS response regarding the Project, there were no historical nest sites or known locations of bald eagle nests identified within the Survey Area (USFWS, 2019) (Appendix B).

3.2.4 ODNR Environmental Review

From the Project's ODNR Environmental Review, there were no historical nest sites or known locations of bald eagle nests identified within the Survey Area (ODNR, 2020) (Appendix B).

3.3 FIELD SURVEY

3.3.1 Raptor Nests

During the course of the Survey, a total of three (3) nests were identified within the Survey Area (Figure 1). From the on-site observations it was concluded that two (2) nests (Nest 1, Nest 2) were inactive. These inactive nests were located towards the western portion of the Survey Area. Both Nest 1 and Nest 2 were approximately 16-18 inches in diameter, comprised of small branches, absent of leaf litter, and the substrate was observed to have medium opacity. Therefore, Nest 1 and Nest 2 were determined to be of moderate condition. It is noted that Nest 1 and Nest 2 could be potentially used in the future, although no raptors were observed utilizing either nest at the time of the survey. The third nest (Nest 3) is located in the southeastern portion of the Survey Area. A red-tailed hawk was observed flying within close proximity to Nest 3, in an abutting cultivated crop field. Due to the red-tailed hawk's time spent perched within proximity of the nest and its tight circular flying pattern within the general vicinity of the nest, it was assumed

that the red-tailed hawk was utilizing Nest 3. Nest 3 was observed to be approximately 16-18 inches in diameter, comprised of small branches, absent of leaf litter, and the substrate was observed to have high opacity. Therefore, Nest 3 was determined to be in good condition. See Table 3.3.1 for details on each nest observed.

Table 3.3.1 Raptor Nests Identified within the Survey Area

Nest Number	Nest Status	Nest Diameter (inches) and Quality Rating	Species	Latitude	Longitude	Approximate Distance to Project Area (Miles)
1	Inactive	16-18, Moderate	N/A	40.66165260	-83.86553709	0.75
2	Inactive	16-18, Moderate	N/A	40.65910151	-83.85390415	0.0
3	Active	16-18, Good	Red-tailed hawk	40.61758313	-83.76805544	1.0

3.3.2 Raptor Sightings

During the course of the Survey, there were four (4) incidental sightings of raptors identified within the Survey Area. Each sighting listed in Table 3.3.2 is described below and shown in Figure 1.

Table 3.3.2 Incidental Raptor Sightings within the Survey Area

Species Common Name	Latitude	Longitude	Approximate Distance to Project Area (Miles)
Bald eagle	40.70352305	-83.83014376	< 1.0
American kestrel	40.63355512	-83.84236668	< 0.25
Red-tailed hawk	40.61713706	-83.76602302	< 0.25
Turkey vulture	40.63640127	-83.77673305	0.0

Bald eagle

TRC biologists identified one (1) adult bald eagle on March 18th, 2020 near the northern most boundary of the Survey Area. The bald eagle was observed on the ground in a cultivated crop field foraging and congregating with a cluster of American crows (*Corvus brachyrhynchos*) (see Appendix C for photograph). The bald eagle eventually took flight, hovered around the location, and then flew outside of the Survey Area to perch in a nearby stand of dead trees. The bald eagle was observed for 45 minutes to determine if a nest was in the general vicinity. No nest was identified at the time the bald eagle was observed. During the last day of field survey, March 19th,

2020, TRC biologists returned to the location of the bald eagle sighting to determine the fidelity of the site and if a nest could be determined. No nest was identified during the subsequent site visit.

American kestrel

On March 18th, 2020, TRC biologists identified one (1) American kestrel in flight alongside State Route 235. The individual was observed within the Survey Area, perched on a box-elder (*Acer negundo*), consuming prey. The American kestrel was identified as an adult female. During observations of the American kestrel, it was concluded that the individual was not associated with a nest. No photos were taken of this individual due to the inability to park safely on the roadside.

Red-tailed hawk

On March 19th, 2020, TRC biologists identified one (1) adult red-tailed hawk in a cultivated crop field searching for food in the southeastern portion of the Survey Area. The red-tailed hawk was observed taking flight, circling the Survey Area, and then perching in a woodlot next to Nest 3. After approximately 15 minutes, the red-tailed hawk was seen utilizing the nest. Photos were taken of the nest; however, no photos were taken of the red-tailed hawk due to inability to capture a clear picture of the individual.

Turkey vulture

On March 19th, 2020, TRC biologists identified two (2) adult turkey vultures in flight together toward the southeastern portion of the Survey Area. From observations of the two (2) adult turkey vultures determined that no nests in the Survey Area were associated with these individuals. No photos were taken due to the inability to safely park on the roadside.

4.0 REFERENCES

- Cornell University. (2019, November 14). *Birds of North America*. Retrieved from The Cornell Lab of Ornithology: <https://birdsna.org/SpeciesAccount/bna/species/baleag/introduction>
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Hardin Solar II Energy Center
Addendum 1
Raptor Nest Survey Report
May 2020

Confidential Business Information

Attachment A
IPaC Report

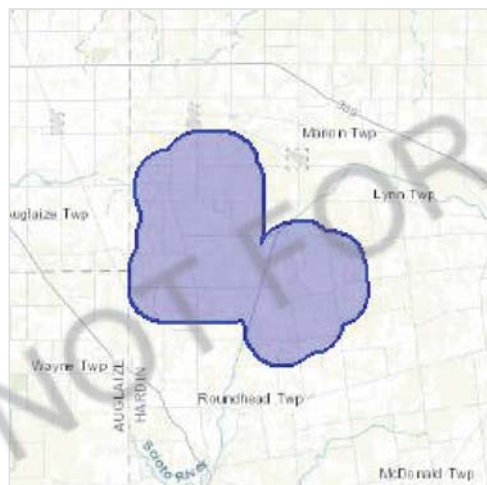
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Hardin County, Ohio



Local office

Ohio Ecological Services Field Office

☎ (614) 416-8993

📠 (614) 416-8994

4625 Morse Road, Suite 104
Columbus, OH 43230-8355

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Indiana Bat *Myotis sodalis***Endangered**

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/5949>

Northern Long-eared Bat *Myotis septentrionalis***Threatened**

This species only needs to be considered if the following condition applies:

- Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at <https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html>

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

Reptiles

NAME

STATUS

Copperbelly Water Snake *Nerodia erythrogaster neglecta***Threatened**

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7253>

Clams

NAME

STATUS

Clubshell *Pleurobema clava***Endangered**

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3789>

Rayed Bean *Villosa fabalis***Endangered**

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/5862>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE
BIRD MAY BREED IN YOUR
PROJECT AREA SOMETIME WITHIN
THE TIMEFRAME SPECIFIED,
WHICH IS A VERY LIBERAL
ESTIMATE OF THE DATES INSIDE
WHICH THE BIRD BREEDS
ACROSS ITS ENTIRE RANGE.
"BREEDS ELSEWHERE" INDICATES

THAT THE BIRD DOES NOT LIKELY
BREED IN YOUR PROJECT AREA.)

American Bittern *Botaurus lentiginosus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/6582>

Breeds Apr 1 to Aug 31

Bobolink *Dolichonyx oryzivorus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

Cerulean Warbler *Dendroica cerulea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2974>

Breeds Apr 21 to Jul 20

Henslow's Sparrow *Ammodramus henslowii*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3941>

Breeds May 1 to Aug 31

Lesser Yellowlegs *Tringa flavipes*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be

used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

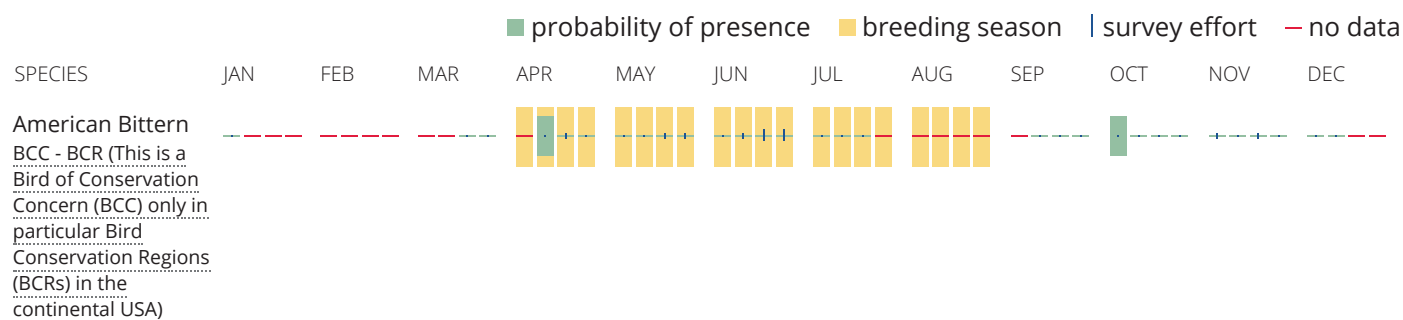
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

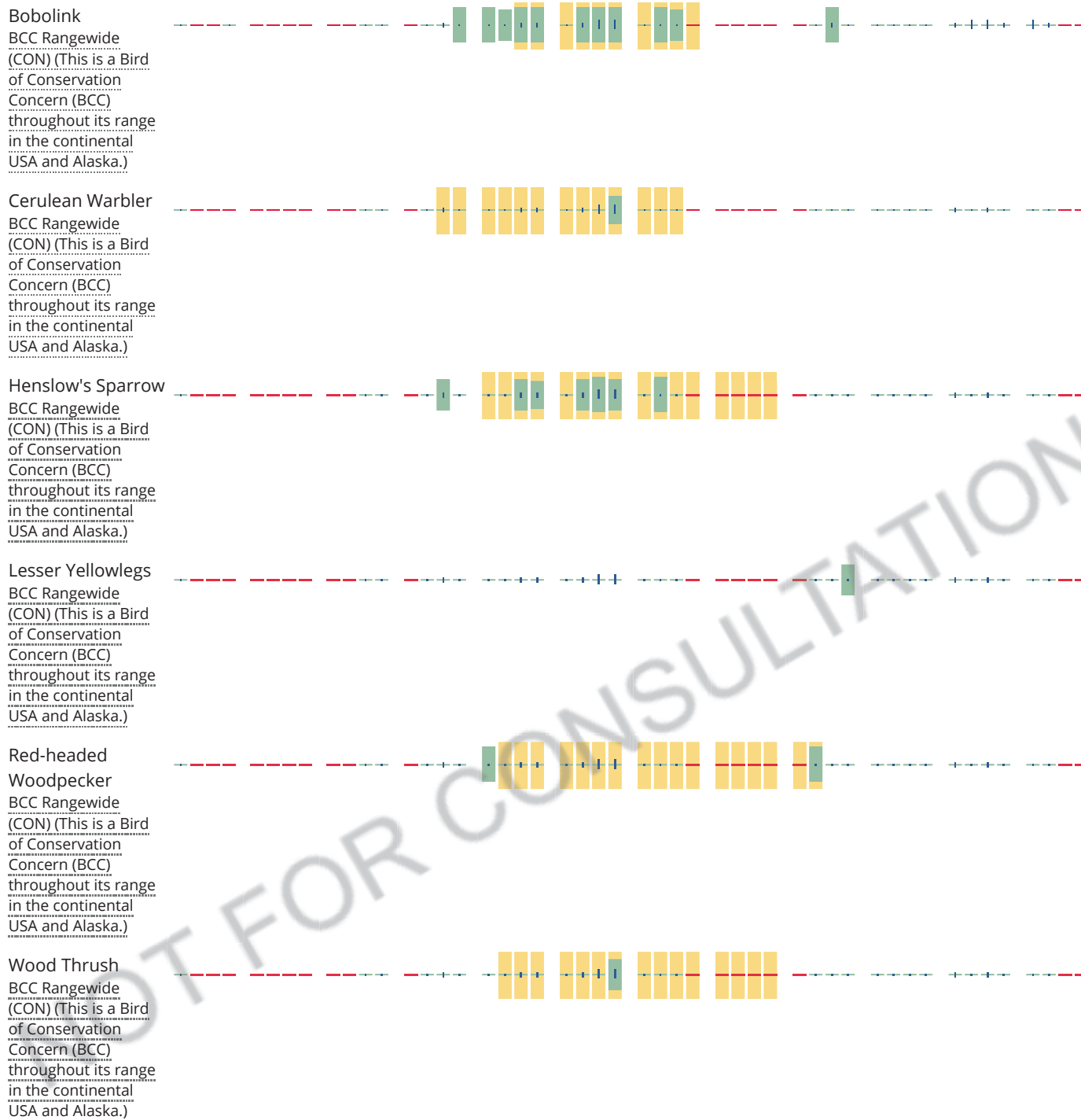
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Hardin Solar II Energy Center
Addendum 1
Raptor Nest Survey Report
May 2020

Confidential Business Information

Attachment B
Agency Coordination

Radford, Thomas

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Monday, December 16, 2019 9:03 AM
To: Radford, Thomas
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us; mretterer@pheasantsforever.org; Lori Stevenson
Subject: [EXTERNAL] Hardin Solar III Energy Center Project, Hardin Co. (TRC No. 370853)
Attachments: Ohio Solar Site Pollinator Habitat Planning and Assessment Form v.9 FINAL_5_3_2018.pdf

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2020-TA-0416

Dear Mr. Radford,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees ≥ 3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥ 3 inches dbh cannot be avoided, we recommend that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nlel/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

The Service is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. Attached for your use is the Ohio Solar Site Pollinator Habitat Planning and Assessment Form. This form was developed by the OPHI Solar Pollinator Program Advisory Team. We recommend that the areas between the solar panels be planted with legumes and wildflowers (i.e. forbs) that are beneficial to pollinators and other wildlife instead of non-native grass. Pollinators are beneficial to agricultural communities like the project area because they pollinate many varieties of fruits and vegetables. The recommended legumes and forbs are short (low-growing) so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should allow the project proponent to minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators (e.g., monarch butterfly and the federally listed rusty patched bumblebee) while reducing storm water runoff, standing water, and erosion. Native plants can act as host plants for insect larva while flowering plants provide nectar sources for adult butterflies as well as other pollinators such as hummingbirds. Seeds from these plants can also provide food for a wide variety of bird species. Please contact the Ohio Pollinator Habitat Initiative (<http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org) for further information on solar power facility pollinator plantings.

Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
Alsike Clover	<i>Trifolium hybridum</i>
Brown-eyed Susan	<i>Rudbeckia triloba</i>
Butterfly Milkweed	<i>Asclepias tuberosa</i>
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional

information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrice M. Ashfield".

Patrice M. Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parson, ODNR-DOW



Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate

John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

January 8, 2020

Thomas Radford
TRC Environmental Corporation
1382 W. Ninth St., Suite 400
Cleveland, Ohio 44113

Re: 19-1040; Hardin Solar III Energy Center Project

Project: The proposed project involves the construction of a photovoltaic solar facility.

Location: The proposed project is located in Marion, Roundhead, and McDonald Townships, Hardin County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The Division of Wildlife is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. Attached for your use is the Ohio Solar Site Pollinator Habitat Planning and Assessment Form. This form was developed by the OPHI Solar Pollinator Program Advisory Team. We recommend that the areas between and around the solar panels be planted with legumes and wildflowers (i.e. forbs) that are beneficial to pollinators and other wildlife and reduce use of non-native grass and gravel. The recommended legumes and forbs listed below are low-growing so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators while reducing storm water runoff, standing water, and erosion. Please contact the Ohio Pollinator Habitat Initiative <http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org for further information on solar power facility pollinator plantings.

Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
Alsike Clover	<i>Trifolium hybridum</i>
Brown-eyed Susan	<i>Rudbeckia triloba</i>
Butterfly Milkweed	<i>Asclepias tuberosa</i>
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the

DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the purple lilliput (*Toxolasma lividus*), a state endangered mussel, and the pondhorn (*Unio merus tetralasmus*), a state threatened mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2016) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federal candidate snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, the project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

Attachment C
Photographic Record



PHOTOGRAPHIC RECORD

Hardin Solar II Energy Center

Addendum 1

Raptor Nest Survey Report

Client Name:

Hardin Solar Energy II LLC

Site Location:

Marion, Roundhead, and McDonald Townships,
Hardin County, Ohio

Project No.

370853.0000.0000

Photo No. 1.**Date:**

3/17/2020

Feature:

UPL-SJB-1

Description:

Looking toward representative agricultural field observed within the Survey Area, looking northeast.

**Photo No. 2.****Date:**

3/17/2020

Feature:

UPL-SJB-1

Description:

Looking toward representative agricultural field observed within the Survey Area, looking southeast.





PHOTOGRAPHIC RECORD

Hardin Solar II Energy Center

Addendum 1

Raptor Nest Survey Report

Client Name:

Hardin Solar Energy II LLC

Site Location:

Marion, Roundhead, and McDonald, Hardin County, Ohio

Project No.

370853.0000.0000

Photo No. 3.**Date:**

3/17/2020

Feature:

UPL-SJB-1

Description:

Looking toward representative agricultural field observed within the Survey Area, looking east.

**Photo No. 4.****Date:**

3/18/2020

Feature:

Nest 1

Description:

Looking towards Nest 1 (inactive), facing northeast.





PHOTOGRAPHIC RECORD

Hardin Solar II Energy Center

Addendum 1

Raptor Nest Survey Report

Client Name:

Hardin Solar Energy II LLC

Site Location:

Marion, Roundhead, and McDonald, Hardin County, Ohio

Project No.

370853.0000.0000

Photo No. 5.**Date:**

3/18/2020

Feature:

Nest 2

Description:

Looking up towards Nest 2 (inactive), identified within Survey Area.

**Photo No. 6.****Date:**

3/18/2020

Feature:

Bald eagle

Description:

Looking towards bald eagle observed within the Survey Area, facing west.





PHOTOGRAPHIC RECORD

Hardin Solar II Energy Center

Addendum 1

Raptor Nest Survey Report

Client Name:

Hardin Solar Energy II LLC

Site Location:

Marion, Roundhead, and McDonald, Hardin County,
Ohio

Project No.

370853.0000.0000

Photo No. 7.**Date:**

3/18/2020

Feature:

Nest 3

Description:

Looking toward Nest 3 (active),
identified to be occupied by a
red-tailed hawk, observed within
the Survey Area.



Exhibit J

Directionally Drilled Installations Inadvertent Return Plan

July 2020

DICKINSON  WRIGHT_{PLLC}

Attorneys for Hardin Solar Energy II LLC



HARDIN SOLAR II ENERGY CENTER

DIRECTIONALLY DRILLED INSTALLATIONS
INADVERTENT RETURN PLAN

HARDIN COUNTY, OH

July 2020

Horizontal Directional Drilling Inadvertent Return Control Plan

NOTE: Before any drilling operations begin, all applicable erosion and sedimentation controls included in the Stormwater Pollution Prevention Plan (SWPPP) will be properly installed per the included drawings and specifications and inspected by a qualified environmental inspector. The SWPPP, state permit(s), landowner restriction list, and any other applicable documents must be carefully reviewed before any disturbance occurs.

Horizontal directional drilling (HDD) is a pipeline installation method typically used to avoid disturbance of sensitive surface features, including water bodies and wetlands. There is however, the potential for surface disturbance through an inadvertent drilling fluid release. Drilling fluid releases are typically caused by pressurization of the drill hole beyond the containment capability of the overburden soil material, which allows the drilling fluid to flow to the ground surface. Releases can also be caused by fractures in bedrock or other voids in the geologic strata that allow the fluid to surface even if down hole pressures are low.

The directional drilling process uses drilling fluid to remove the cuttings from the borehole, stabilize the borehole, and act as a coolant and lubricant during the drilling process. The fluid consists primarily of water and bentonite, naturally occurring clay, active clays, inert solids and water. Drilling fluid is not a hazardous material, as it is composed of benign components; however, an inadvertent release will require mitigation measures to reduce the impact to a water body or sensitive area.

The areas that present the highest potential for drilling fluid seepage are the drill entry and exit points where the overburden depth is minimal. At the entry and exit points, a pit will be constructed to collect and provide temporary storage for the drilling fluid seepage until it can be removed. These pits will be lined with geotextile and sized adequately to accommodate the maximum volume of drilling fluid that may need to be contained in the pits. Secondary containment of the pits will contain any seepage and minimize any migration of the mud from the work area. This containment system may consist of straw bales and silt fencing around the pit.

To determine if an inadvertent release has occurred, horizontal directional drilling activities will constantly be monitored by the contractor.

The monitoring procedures will include:

- Inspection along the drill path
- Continuous examination of drilling mud pressures and return flows
- Periodic documentation of status of conditions during drilling activities

The contractor will address an inadvertent return immediately upon discovery.

If a wetland/water body release occurs, inspection to determine the potential movement of released drilling mud within the wetland/water body will be necessary. To contain and control drilling fluid seepage on land or in a water body, the contractor will have equipment and materials available onsite. Containment equipment including portable pumps, hand tools, sandbags, straw bales, silt fencing, inadvertent return barrel, and lumber will be readily available and stored at the drilling site.

The following measures will be implemented to minimize or prevent further release, contain the release, and clean up the affected area:

Upland Release

The contractor will place containment structures at the affected area to prevent migration of the release.

If the amount of the release is large enough to allow collection, the drilling mud released into containment structures will be collected and disposed of per the *HDD Fluid/Cutting Disposal* procedures at the end of this document. If the amount of the release is not large enough to allow collection, the affected area will be diluted with fresh water and restored as necessary. Steps will be taken to prevent silt-laden water from flowing into a wetland or water body.

If public health and safety are threatened by an inadvertent release, drilling operations will be shut down until the threat is eliminated.

All disturbed areas associated with the project will be stabilized and restored per the specifications outlined in the project SWPPP.

Water Body Release

If a release occurs within a water body, the contractor will attempt to place containment structures at the affected area to prevent migration of the release if feasible. If public health and safety are threatened by an inadvertent release, drilling operations will be shut down until the threat is eliminated.

All disturbed areas associated with the project will be stabilized and restored per the specifications outlined in the project SWPPP.

In the event of a return to a stream, wetland, or other water body, the contractor will contact the construction environmental manager immediately. The Contractor will use the contact information included in the *Project Information Table* at the beginning of this document to contact the appropriate parties as necessary.

Drilling Operation Controls/Adjustments

If an inadvertent return takes place, the contractor will immediately cease operations and contact the Owner. If directed by the Owner, drilling operations will be further reduced or suspended to assess the extent of the release and to implement corrective actions. Drilling will resume after the Owner's assessment of the situation. If public health and safety are threatened, drilling fluid circulation pumps will be turned off. This measure will be taken as a last resort because of the potential for drill hole collapse resulting from loss of down-hole pressure.

After a drilling fluid seepage has been contained, the contractor will make every effort to determine the cause of the seepage. After the cause has been determined, measures will be implemented to control the factors causing the seepage and to minimize the chance of recurrence.

For either water body or upland returns, the contractor, in conjunction with environmental inspectors, drill operator, etc., will attempt to adjust the drilling technique or composition of drilling fluid and implement any modifications to minimize or prevent further releases of drilling mud. This may include:

- Thickening of mud by increasing bentonite content
- Changing the drilling rate

Invenergy

- Changing the fluid pumping rate
- Attempting a deeper directional drill

Developing the corrective measure will be a joint effort of the Owner and the contractor and will be site and problem specific. In some cases, the corrective measure may involve a determination that the existing hole encountered a void, which may be bypassed with a slight change in the profile. In other cases, it may be determined that the existing hole encountered a zone of unsatisfactory soil material and the hole may have to be abandoned. If abandoned, the hole will be filled with cuttings and drilling fluid.

Containment equipment and materials, including lumber for temporary shoring, sandbags, portable pumps, hand tools, silt fence, and hay bales, etc., will be stored on-site. The drilling contractor will also have heavy equipment such as track excavators that can be utilized to control and clean up drilling fluid seepage. Equipment associated with fluid removal shall be of sufficient enough quality (i.e., pump capacity, hose condition) and quantity (i.e. hose length, number of pumps), to efficiently manage any returns associated with the project.

Equipment on Site

The items listed below are recommended equipment to contain an inadvertent return. Additionally, for all projects, the Material Safety Data Sheet for the fluid being used must be on site at all times.

- Vacuum Truck
- 55 Gal. drums with bottoms cut out
- Track Excavators
- Hay Bales
- Leak free portable pumps
- Spill Kits
- Sandbags
- Leak free hoses
- Plastic Sheeting
- Filter Sock/Fence

HDD Fluid/Cutting Disposal

If applicable, a VacBox/Tank/Container for containment will be placed on site or on call (within 3 hours) to contain the drilling fluids and cuttings associated with the drilling operation. A composite sample of the drilling fluids will be collected for analytical testing and completion of the Form U (chemical data reporting) composite. Once the drilling fluids have passed the analytical testing and the Form U has been approved, drilling fluid will be disposed of at an approved disposal facility. However, if drilling fluid is found to be impacted or contaminated, the contractor will defer to The Owner for disposal instructions as well as any cost associated with removal of impacted or contaminated soils.

***All residual directional drill material must be disposed of at a properly certified facility or location in accordance with all applicable laws and regulations.**

Exhibit K

Phase I Archaeological Survey Report TRC Companies

July 2020

DICKINSON  WRIGHT_{PLLC}

Attorneys for Hardin Solar Energy II LLC



Phase I Archaeological Survey

July 2020

2020-HAR-43182 Addendum I

**Hardin Solar II Energy Center,
Hardin County, Ohio**

Prepared For:

Hardin Solar Energy II LLC
One South Wacker Drive, Suite 1800
Chicago, IL 60606

Prepared By:

TRC
2200 Liberty Avenue
Pittsburgh, Pennsylvania 15222





Phase I Archaeological Investigation of the Hardin Solar II Energy Center, Hardin County, Ohio

2020-HAR-43182 Addendum I

Prepared for:

Hardin Solar Energy II LLC
One South Wacker Drive, Suite 1800
Chicago, IL 60606

Submitted by:

TRC Companies
Liberty Technology Center
2200 Liberty Avenue, Suite 100
Pittsburgh, PA 15222
Email cbiondich@trcsompanies.com

TRC Project #370853

A handwritten signature in blue ink, reading "Curtis Biondich", with a stylized, cursive script.

Curtis L. Biondich, MS, RPA, Principal Investigator

July 2020

Management Summary

TRC Environmental Corporation (TRC), under contract to Hardin Solar Energy II LLC (Hardin Solar II), prepared this Addendum I (Report) to the *August 2019 (Second Revision March 2020) Phase I Archaeological Survey of the Hardin Solar Energy Center Project, Hardin County, Ohio (2020-HAR-43182)*. The newly acquired, approximately 668 hectares (ha) (1651.49 acres [ac]) of rolling agricultural fields reviewed for the purposes of this Report (the Project) are proposed additional areas of the Hardin Solar II Energy Center, which received a Certificate of Environmental Compatibility and Public Need from the Ohio Power Siting Board on May 16, 2019. This Report summarizes the results of the third field survey conducted for the Hardin Solar II Energy Center.

Initially, in 2018, the Hardin Solar II Energy Center consisted of approximately 1200 acres. Cultural resources were reviewed in June of that year and on April 29, 2019 the Ohio Historic Preservation Office (OHPO) confirmed that no additional archaeological study was required. In 2019 additional areas were added to the Hardin Solar II Energy Center, and were subsequently reviewed in May, June, and July 2019. The *Phase I Archaeological Survey of the Hardin Solar Energy Center Project, Hardin County, Ohio* was submitted in August 2019 (Final Revision in March 2020), and the OHPO responded with a letter dated September 4, 2019 (Final letter dated April 17, 2020). The response indicated additional archaeological investigations could move forward for the potentially eligible archaeological sites identified during this work. These additional investigations are on-going.

Later in 2019, additional properties were again added to the Hardin Solar II Energy Center. This Report is intended to review all areas of the Hardin Solar II Energy Center that were not previously cleared of cultural resources by OHPO in the previous reports.

Hardin Solar II intends to build ground-mounted solar arrays. When constructed, the solar arrays will be approximately 4.6 meters (m) (15 feet [ft]) in height and will be surrounded by 2.1 m (7 ft) chain link security fencing. There are only minor earth moving activities planned for construction. Grading will be minimized and existing vegetation, where present, will be kept in place as much as possible. The solar racking piles (approximately 3 m [15 ft] embedment) will be driven into the ground using pressure and vibrations at 6 to 9 m (20 to 30 ft) intervals. The proposed access roads will be 4.8 m (16 ft) wide with 0.6 m (2 ft) shoulders and will be constructed near the center and perimeters of the facility for access by maintenance vehicles.

This report details the Phase I Archaeology Survey that TRC performed under the guidelines set by the Ohio Historic Preservation Office's Archaeological Guideline (1994), the Guidelines for Conducting History/Architecture Surveys in Ohio (Revised 2014) and in consultation with the Ohio State Historic Preservation Office (SHPO) which is housed under the Ohio History Connection (OHC). The investigation was conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC § 470), as amended; the Advisory Council on Historic Preservation regulations carried forth in 36 Code of Federal Regulations Part 800 (36 § 800); and Section 149.53 and 149.54 of the Ohio Revised Code. As per the Secretary of the Interior's Professional Qualification Standards (36 CFR § 61), an archaeologist meeting the

professional qualification for archaeological investigation oversaw the cultural resource investigation.

The area of potential effects (APE) for direct effects will consist of 668 ha (1651.49 ac) of existing agricultural fields. Acreage within the APE at the time of survey included plowed corn and soybean fields.

During the months of October through December 2019 and March through May 2020, TRC conducted additional Phase I archaeological investigations for the Project. The survey followed the field standards for terrestrial Phase I Cultural Resource Survey set by the OHC.

In total, TRC's survey efforts identified 46 newly recorded archaeological resources (site designation number assignments are in progress): seven (7) prehistoric lithic scatters, 11 historic scatters, five (5) multicomponent historic/prehistoric sites, 22 prehistoric isolated finds and one (1) historic isolated find. In addition, five (5) previously recorded sites were reidentified as a result of the survey. A total of 514 artifacts throughout the entire APE were recovered. Based on the results of the survey, 17 of the newly recorded sites, all 23 isolated finds, and two (2) of the previously recorded sites are recommended not eligible for listing on the NRHP as they will not provide additional information to the history or prehistory of the region (Criterion D). This recommendation is based on the absence of above ground and/ or subsurface features, the level of disturbance exhibited within project APE associated with annual agricultural practices, and the paucity of artifacts recovered in those locations.

TRC recommends that the remaining nine (9) sites are potentially eligible for listing in the NRHP and could provide additional information to the prehistory of the region (Criterion D). These sites should be avoided; if they cannot be avoided, additional investigations may be necessary. These determinations are based on the diagnostic artifacts and the potential for buried intact archaeological deposits. If avoidance is not a project design option, additional archaeological survey evaluation is recommended for six (6) new sites (Pohlman 5 Site 1, Richardson 3 Site 1, Watkins 3 Site 2, Harpster Site 1, Harpster Site 2, and TRC-HC-7), and three (3) previously recorded sites (33HR202, 33HR204, and 33HR226), based on the artifacts recovered and their potential to contribute to the overall prehistory/history of the area, similar to those resources identified as a result of the *Phase I Archaeological Survey of the Hardin Solar Energy Center Project, Hardin County, Ohio* (August 2019, Second Revision March 2020).

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1.0 Introduction

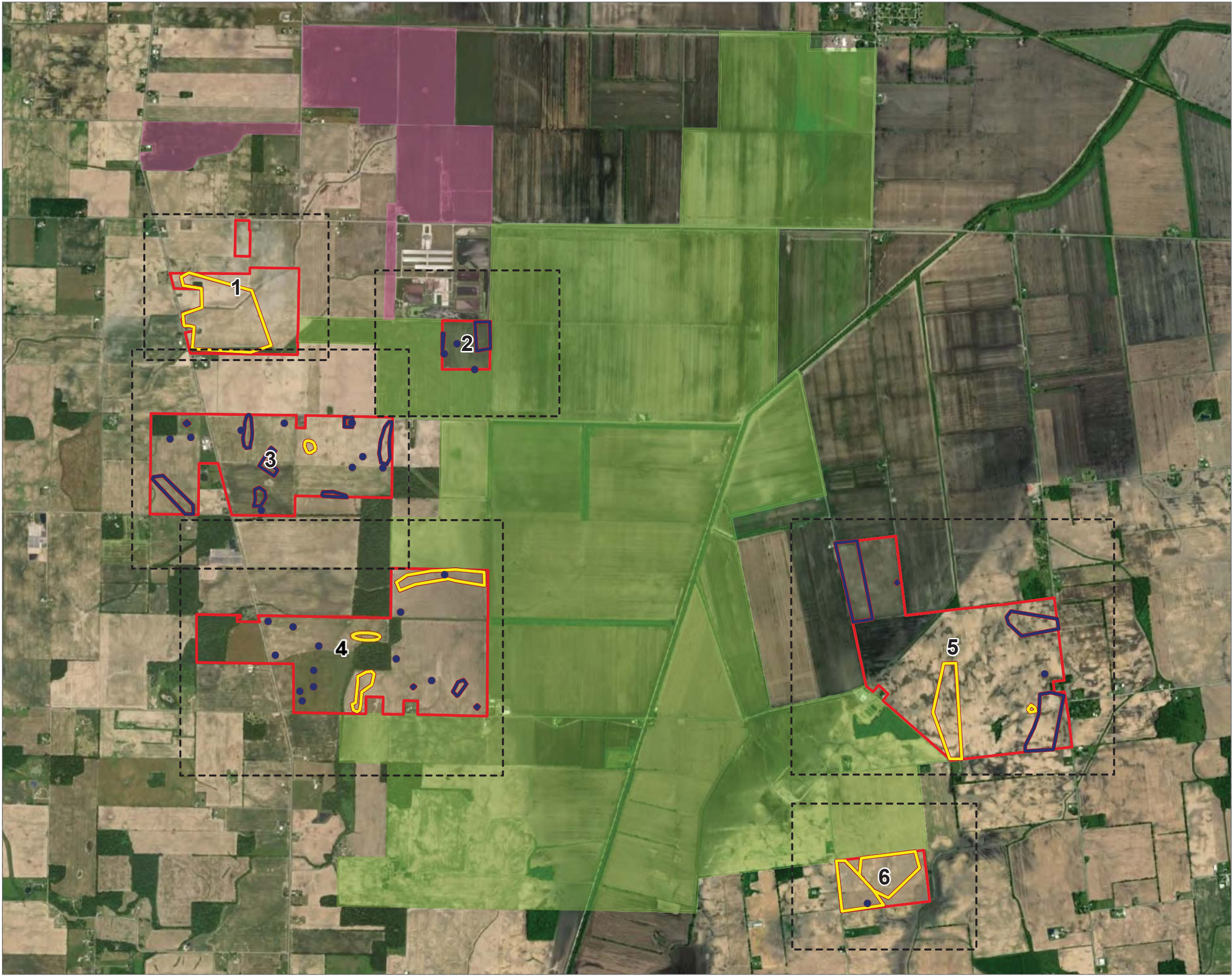
On behalf of Hardin Solar Energy II LLC, TRC has prepared this Addendum I (Report) to the *August 2019 (Second Revision March 2020) Phase I Archaeological Survey of the Hardin Solar Energy Center Project, Hardin County, Ohio (2020-HAR-43182)*. Hardin Solar II intends to install ground-mounted solar arrays on approximately 668 ha (1651.49 ac) of agricultural land for the Hardin Solar II Energy Center. The APE is located about 16 kilometers (km) (10 miles [mi]) west of the city of Kenton, Ohio, and 25.7 km (16 mi) southeast of the city of Lima, Ohio.

This report details the Phase I Archaeology Survey that TRC performed under the guidelines set by the Ohio Historic Preservation Office's Archaeological Guideline (1994), the Guidelines for Conducting History/Architecture Surveys in Ohio (Revised 2014) and in consultation with the SHPO which is housed under the OHC. The investigation was conducted in compliance with Section 106 of the NHPA of 1966 (16 USC § 470), as amended; the Advisory Council on Historic Preservation regulations carried forth in 36 Code of Federal Regulations Part 800 (36 § 800); and Section 149.53 and 149.54 of the Ohio Revised Code. As per the Secretary of the Interior's Professional Qualification Standards (36 CFR § 61), an archaeologist meeting the professional qualification for archaeological investigation oversaw the cultural resource investigation.

This Phase I archaeological survey was conducted during the months of October through December of 2019 and March through May of 2020. Curtis Biondich MS, RPA, served as the Principal Investigator. Field work was conducted by Pete Mayers, and TRC archaeological field technicians. TRC personnel served as report authors and graphics were prepared by Rebecca Spring.

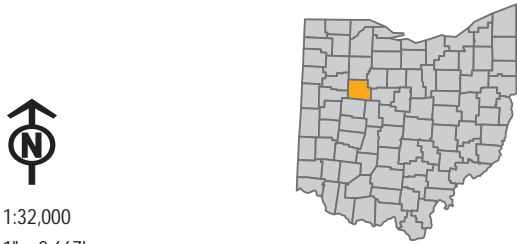
Based on the results of the survey a total of 46 newly recorded archaeological resources were identified; in addition, five (5) previously recorded sites were reidentified (Figure 1). A total of 514 artifacts throughout the entire APE were recovered (Appendix A and B). Based on the results of the survey, 17 of the newly recorded sites, all 23 isolated finds, and two (2) of the previously recorded sites are recommended not eligible for listing on the NRHP as they will not provide additional information to the history or prehistory of the region (Criterion D). This recommendation is based on the absence of above ground and/ or subsurface features, the level of disturbance exhibited within project APE associated with annual agricultural practices, and the paucity of artifacts recovered in those locations.

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- Page Index
- Isolated Site - No Additional Work Needed
- Site Boundary - Recommended Phase II Investigation
- Site Boundary - No Additional Work Needed
- Hardin Solar II Energy Center Amendment Area
- Area Surveyed, Not within Permitted Boundary
- Previously approved by OHPO Project

BASE MAP: ESRI "WORLD IMAGERY" ONLINE SERVICE LAYER
DATA SOURCES: TRC, ESRI



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1" = 2,667'
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2020-HAR-43182
ADDENDUM I**

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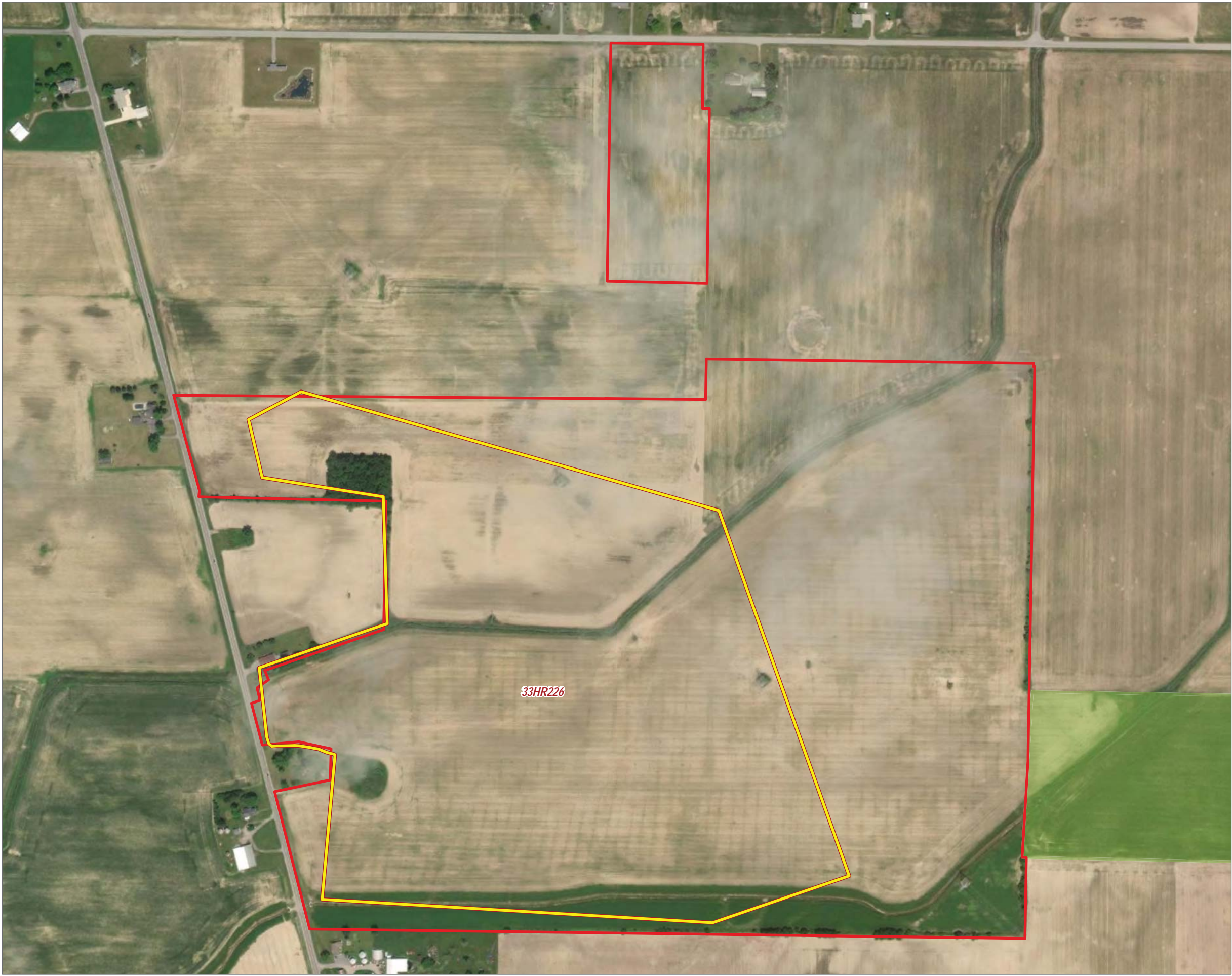
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


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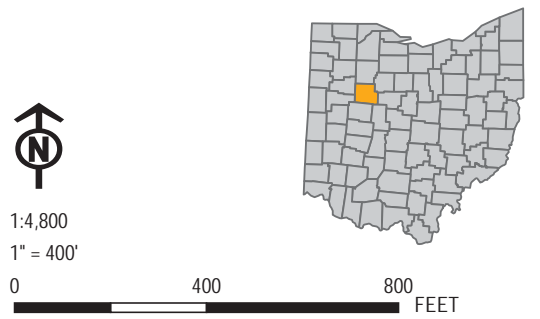
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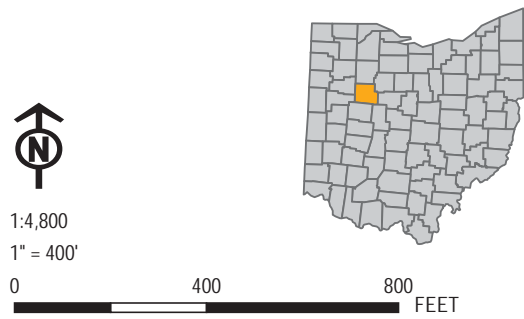
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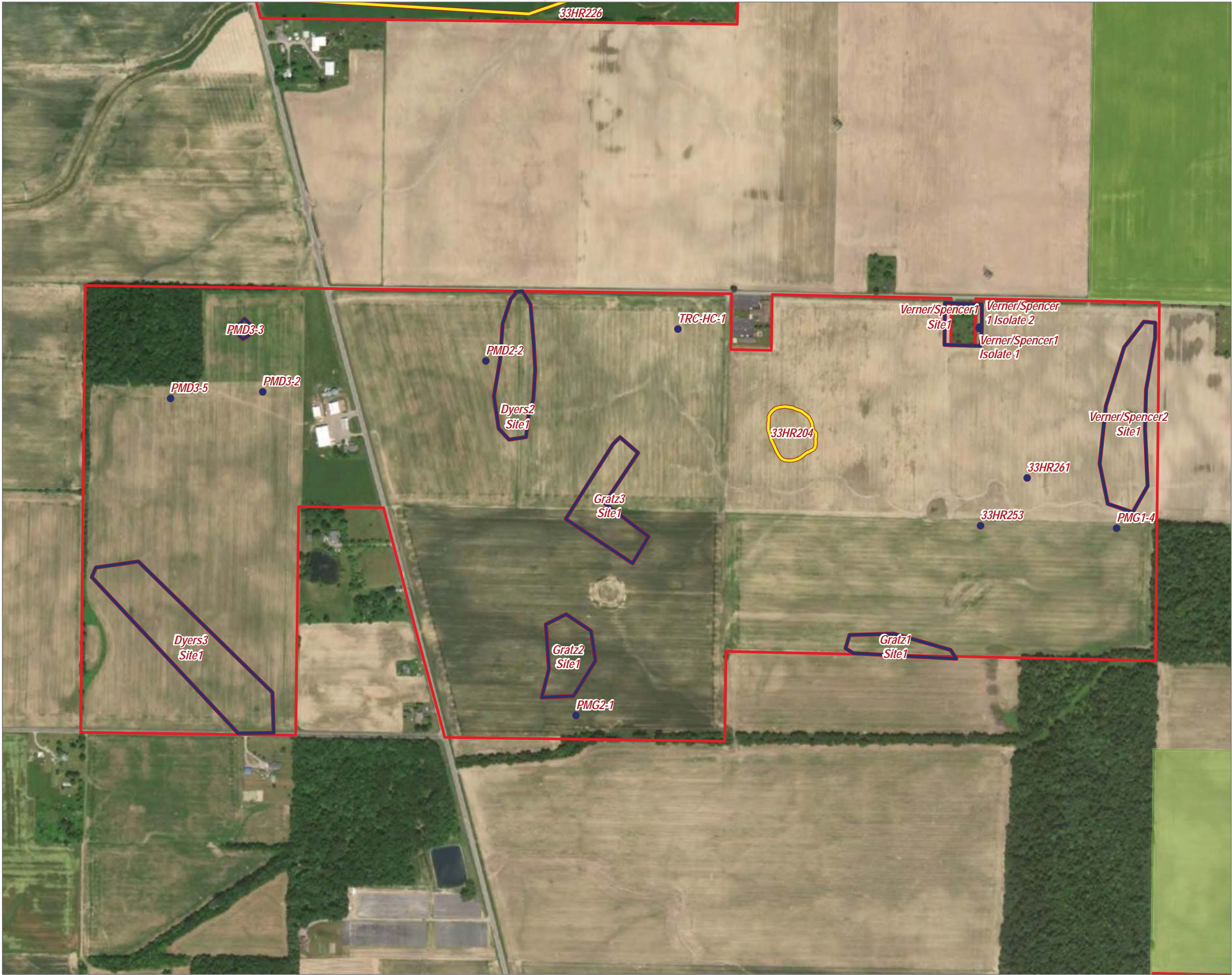
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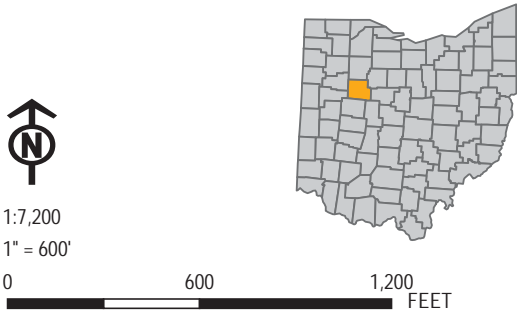
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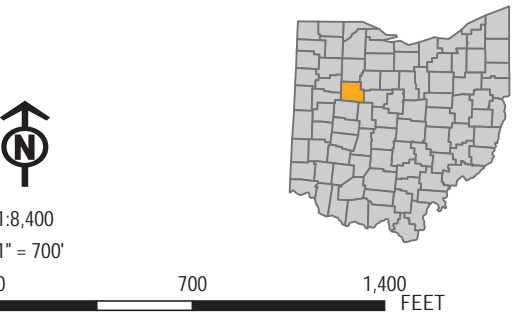
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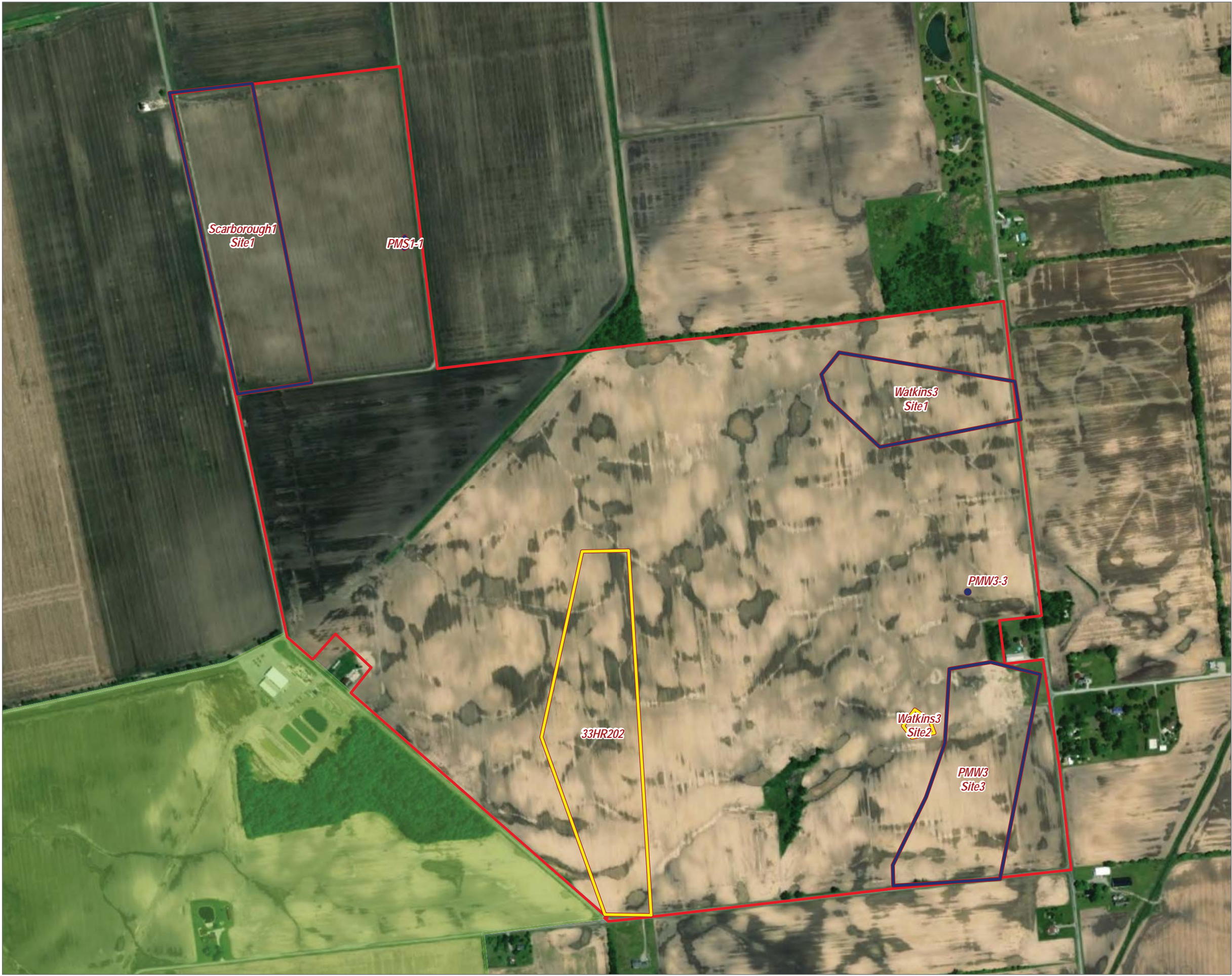
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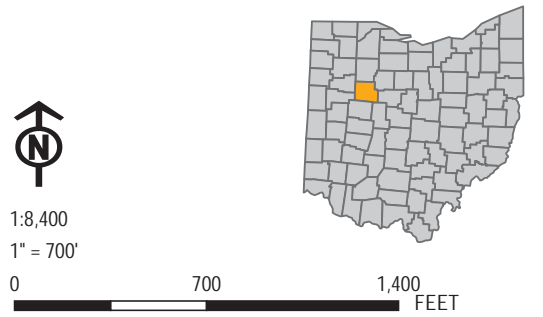
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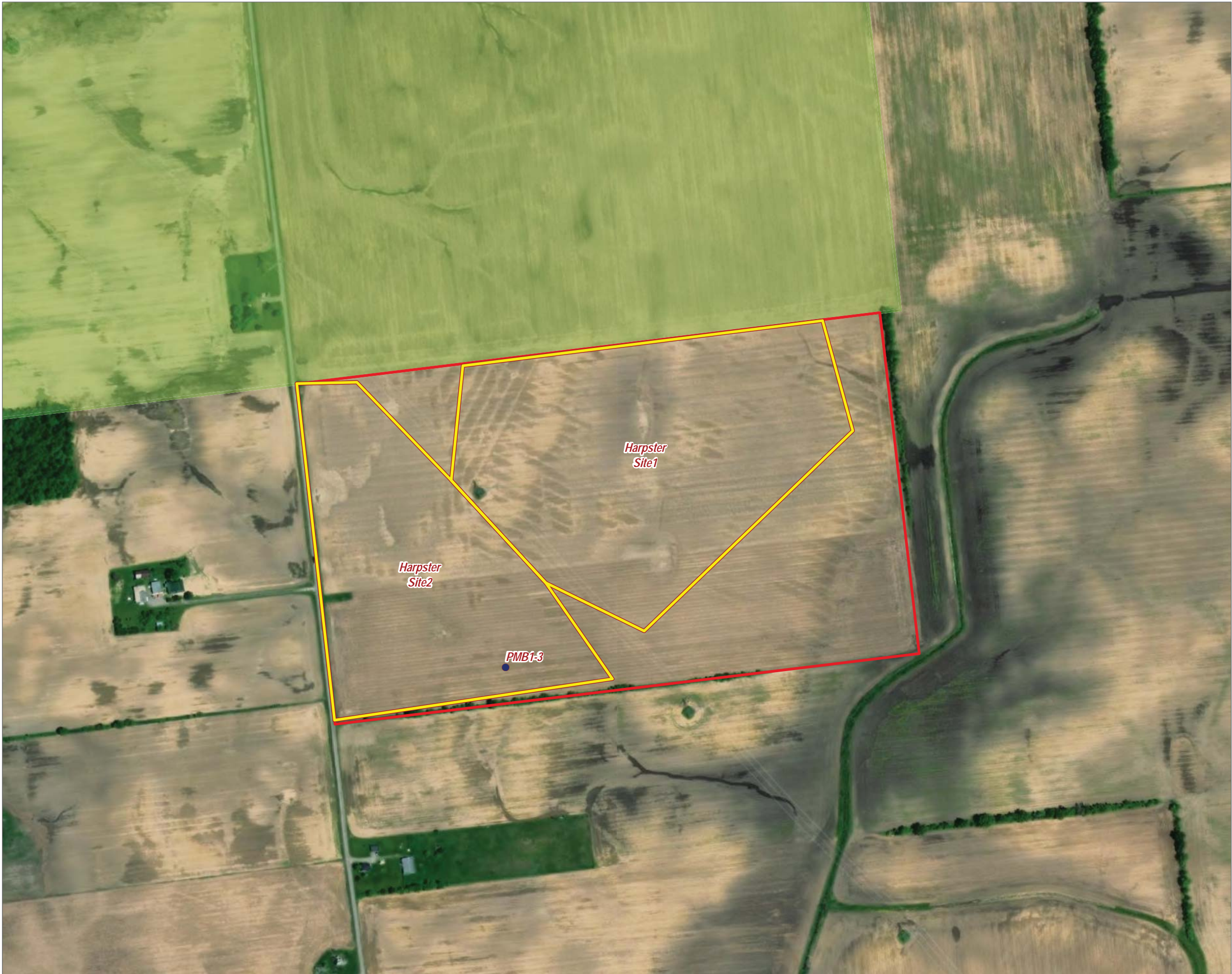
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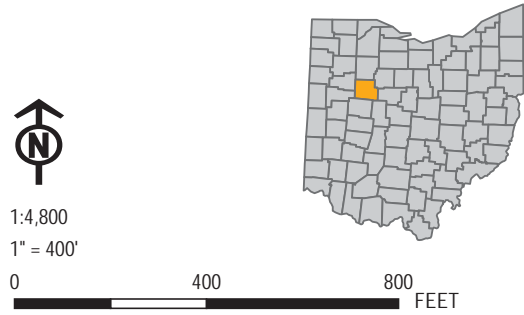
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2.0 Environmental Setting

Project Setting

The Project is comprised of primarily agricultural land 16 km (10 mi) west of the city of Kenton, Ohio and 25.7 km (16 mi) southeast of the city of Lima, Ohio. The APE consists of actively farmed fields of corn and soybeans (Figures 2, 3, and 4). The Scioto River flows through and borders multiple fields in the APE; this waterway has been modified for irrigation of the agricultural fields. There are active farm complexes located throughout the project area, as well as an active dairy farm on the northwest corner of the Midwest Ohio Farms LLC parcel. The surrounding environment is comprised of more agricultural fields, with some homesteads along the roads.



Figure 2. Gary Hall Fields, facing northeast.



Figure 3. Richardson Fields, facing north.



Figure 4. Gratz Fields, facing south.

3.0 Background Literature and Records Search

Archaeological Resources

TRC personnel contacted the OHC for a background literature and record search to locate any archaeological sites and previous investigations located directly within the APE, in order to provide context for the types of sites that might be encountered within the Project area. The file review revealed 134 previously recorded archaeological resources present within an 8-km (5-mi) radius of the project area, nine of which can be found within the footprint of the APE. Of these sites, two (2) are characterized as open habitation settings, two (2) are historic farmsteads, four (4) are unknown prehistoric cultural temporal period isolate finds, and one (1) is documented as a multicomponent prehistoric and historic site (Table 1).

Table 1. Archaeological Resources within the APE.

Site #	Cultural Affiliation	Site Type
33HR0202	Multicomponent: Archaic, Historic	Campsite/ Open Habitation, Historic Farmstead
33HR0204	Historic (mid-19 th Century)	Historic Farmstead
33HR0206	Unknown Prehistoric	Isolate
33HR0226	Unknown Prehistoric	Campsite/ Open Habitation
33HR0227	Middle to Late Archaic	Isolate
33HR0228	Unknown Prehistoric	Isolate
33HR0253	Late Archaic, Early Woodland	Campsite/ Open Habitation
33HR0261	Unknown Prehistoric	Isolate
33HR0424	Historic Late 19 th – Early 20 th Century	Historic Farmstead

Previous Cultural Resource Surveys

During the file review of previously conducted survey records maintained by the SHPO, it was revealed that nine areas within the 8-km (5-mi) radius of the project have been previously cleared for cultural resources (Table 2).

Historic Architectural Resources

Background research in the OHPO Online Mapping System revealed no previously-surveyed architectural resources or NRHP-listed or eligible resources located within the project area boundaries. However, a single NRHP-listed property was identified within the 8-km (5-mi) radius architectural study area. The Zimmerman Kame Property is located approximately 5.6 km (3.5 mi) south of the project location. In total, there are 251 architectural resources within the 8-km (5-mi) radius that have been previously surveyed but have yet to be evaluated for listing in the NRHP. In addition to these resources, 33 cemeteries were identified within the 8-km (5-mi) radius. Based on

topography, areas of potential site visibility, and areas of potential obstructed viewshed, the research area was further refined to include only those resources within a 1.6-km (1-mi) radius. Within this 1.6-km (1-mi) radius of the Project area there are a total of 61 historical architectural resources. Of these, 20 were identified within the project area (Table 3). None of these previously-surveyed resources have been evaluated for listing in the NRHP.

Table 2. Previously Archaeological Investigations within a 5 Mile Radius.

NADB#	Survey Name	Survey Type
13058	A Transect Corridor through the Headwaters of the Scioto River, Hardin Co, OH	Phase I Archaeological Survey
13062	FMHA Housing Complex, Alger, Hardin Co, OH	Phase I and II Archaeological Historical Survey
14771	DPL Energy's Proposed Harrod Electric Generating Facility, Auglaize Township, Allen Co, OH	Phase I Cultural Resource Survey
17029	Proposed Cell Tower (TOL-140-West Newton) in Auglaize Township, Allen County, Ohio	Phase I Cultural Resource Survey
17788	McGuffey/Village of McGuffey Wireless Cellular Tower in Marion Township, Hardin Co, OH	Phase I Cultural Resource Survey
17897	OH-Holden Telecommunications Tower Project Area, Roundhead Township, Butler Co, OH	Phase I Cultural Resource Survey
19791	Holden HNCC-153 Wireless Cellular Tower in the Unincorporated Community of Harrod, Roundhead Township, Hardin County, Ohio (CTL# 15510020COLa; Ensite No. 23201)	Phase I Archaeological Survey
20184	Marathon Harpster to Lima Pipeline Project, Allen, Hardin, and Wyandot Counties, Ohio	Phase I Cultural Resource Survey
Not Yet Available	Proposed Hardin Wind Farm, Townships of Cessna, Lyn, Marion, and McDonald, Hardin Co., OH	Phase I Cultural Resource Survey

Historic Maps

Historic maps were consulted during the background research effort. As of 1913 there were approximately 13 buildings within the APE (USGS, Alger 1913). These tended to lie along light-duty field access roads. The *West Boundary of Virginia Military Land* goes through the southeastern portion of the APE. This was created in 1784 and designated as land used for payment to Virginia Revolutionary War veterans (OHC 2019b; Paullin and Wright 1932). By 1943 the number of buildings had increased to 21 (although some previous buildings had been removed). Additional unimproved roads could be seen throughout the APE, and State Routes 69 and 195 through the eastern portion of the Project area had been designated. Overall, the Project and the areas surrounding it continue to be rural (USGS, Alger 1943). Other than the addition/removal of various buildings, the rural Project area is relatively unchanged (USGS, Alger 1961 and Roundhead 1960).

Table 2. Historic Architectural Resources within the APE.

OHI Survey ID#	Resource Name/Type	Date
HAR0057905	Quickstep Church	c.1970
HAR0061810	Richard M. Watkins Barn	c.1900
HAR0060410	William A. & Richard M. Watkins House	c.1920

4.0 Methods

Archaeological Survey Methods

TRC personnel surveyed the APE on foot utilizing systematic pedestrian survey to determine the likelihood of archaeological deposits. Visual inspection was conducted throughout the entire Project area. This systematic pedestrian survey was conducted at 5 m (16.4 ft), 10 m (32 ft), and 20 m (65 ft) intervals – based on probability of site identification – in areas with greater than 50 percent surface visibility and/or less than 15 percent slope.

In-field data recording was conducted using a hand-held sub-meter GPS unit. Notes were maintained using standard archaeological nomenclature (Munsell soil colors, terrain descriptions, notes on findings and stratigraphy, etc.) The Project was documented using a high-resolution digital camera. The field notes, maps, photographs, and other technical materials generated as a result of this archaeological testing will be curated at the TRC office in Nashville.

Laboratory Methods

All recovered cultural material, as well as notes, forms, maps, photographs, and other materials pertaining to the project were returned to the TRC Nashville laboratory for processing and analysis and temporary curation. Artifacts were washed with brush and water and air-dried before being sorted based on the sorting criteria described below. The artifacts were also catalogued according to provenience and artifact type. Once the Project construction is complete all project materials including artifacts recovered will be returned back to the respective property owner.

The focus of the laboratory analysis was geared to determine the occupation span, possible function, and degree of artifact preservation at each site, as well as to gather the data necessary to make evaluations regarding NRHP eligibility. Laboratory analysis included the comprehensive description of recovered artifacts using well-established, temporally diagnostic types. After the analysis, all artifacts were placed into re-closeable plastic bags labeled with the pertinent descriptive and provenience data. During the analysis all artifacts were segregated by material, type, and morphological attributes (if discernable).

5.0 Archaeological Survey Results

Archaeological Survey Results

The Phase I archaeological survey was conducted October through December of 2019 and March through May 2020. The APE encompasses approximately 668 ha (1651.49 ac) of agricultural land located within the Scioto River watershed in Hardin County, Ohio. A pedestrian survey was conducted at 5 m (16.4 ft), 10 m (32 ft), and 20 m (65 ft) intervals across the entire APE, based on probability of site identification, in order to visually inspect the ground surface for cultural materials.

Site descriptions along with their NRHP evaluation are provided below.

Newly Recorded Sites

(Pohlman 5 Site 1)

Cultural Affiliation: Multicomponent Historic mid-19 th to 20 th Century; Late Woodland to Mississippian	Maximum artifact depth (cm): 0 cm
Site Type: Historic Domestic Scatter; Camp	Artifacts: n=17
NRHP recommendation: Further Work Recommended	
Elevation: 298 m (977 ft) amsl	Site Dimensions: Approx. 60 m N/S x 240 m E/W

Pohlman 5 Site 1 is a multicomponent historic and prehistoric scatter identified while conducting a pedestrian survey through an active agricultural field. The prehistoric components include lithic reduction flakes (tertiary) a flake tool, tertiary stage biface fragments, and a Madison projectile point/knife (PP/K) were recovered from the surface. Historic artifacts consist of solarized glass, undecorated ironstone, porcelain (pressed/molded), aqua glass, milk glass, and stoneware (Albany/Bristol slip). The earliest structures associated with the historic component appear on the 1913 USGS Alger quadrangle map.

NRHP Recommendation

Pohlman 5 Site 1 is a multicomponent historic farmstead and dispersed prehistoric lithic scatter. The site is composed of historic domestic artifacts dating to the mid-19th to 20th century. The Madison PP/K suggests an occupation within the Late Woodland to Mississippian Periods. Though the site has been heavily disturbed by plowing activities, TRC recommends that this site is potentially eligible for listing in the NRHP and would provide additional information to the prehistory of the region (Criterion D). Pohlman 5 Site 1 should be avoided; if it cannot be avoided, additional investigations may be necessary. This determination is based on the diagnostic artifacts and the potential for buried intact archaeological deposits.

(Dyers 3 Site 1)

Cultural Affiliation: Multicomponent Historic mid-19 th to 20 th Century; Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Historic Domestic; Prehistoric Camp	Artifacts: n=56
NRHP recommendation: Not Eligible	
Elevation: 1005 m (306 ft) amsl	Site Dimensions: Approx. 40m N/S x 40m E/W

Dyers 3 Site 1 is a multicomponent historic domestic scatter and prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. Lithic reduction flakes (tertiary, and shatter), flake fragments, and a tertiary stage biface fragment were found during the surface collection. Ironstone (undecorated, shell-edge, transfer-print, hand-painted), stoneware (salt glaze and Albany/Bristol slip), porcelain, milk glass, clear glass, aqua glass composed the historic portion of the assemblage. The earliest structures associated with the historic component appear on the 1913 USGS Alger quadrangle map.

NRHP Recommendation

Dyers 3 Site 1 is a multicomponent historic domestic scatter and prehistoric lithic scatter. The site is composed of historic domestic artifacts dating to the mid-19th to 20th centuries. No prehistoric diagnostic artifacts were collected. Due to the heavy disturbance by plowing activities and based on the data collected during this survey and consultation with the OHPO, TRC recommends that Dyers 3 Site 1 is not eligible for listing in the NRHP as it will not provide any additional

information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts and level of disturbance exhibited at the site due to agricultural practices.

(PMD3-3)

Cultural Affiliation: Mid-19 th to 20 th Century	Maximum artifact depth (cm): 0 cm
Site Type: Historic Domestic Scatter	Artifacts: n=12
NRHP recommendation: Not Eligible	
Elevation: 302 m (992 ft) amsl	Site Dimensions: Approx. 30m N/S x 30m E/W

PMD3-3, located on the Dyers 3 property, is a historic domestic scatter identified while conducting a pedestrian survey through an active agricultural field. Surface collection consisted of ironstone (undecorated and transfer-print), stoneware (Albany/Bristol slip), pressed/ molded porcelain, milk glass, and flat glass. There are no known structures in or near the area on any USGS quadrangle map.

NRHP Recommendation

PMD3-3 is a historic scatter composed of domestic artifacts from mid-19th to 20th centuries. The site has been heavily disturbed by plowing activities. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that PMD3-3 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(Dyers 2 Site 1)

Cultural Affiliation: Mid-19 th to 20 th Century	Maximum artifact depth (cm): 0 cm
Site Type: Historic Domestic Scatter	Artifacts: n=13
NRHP recommendation: Not Eligible	
Elevation: 302 m (992 ft) amsl	Site Dimensions: Approx. 260m N/S x 15m E/W

Dyers 2 Site 1 is a historic domestic scatter identified while conducting a pedestrian survey through an active agricultural field. The assemblage is made up of ironstone (undecorated and decal decoration), stoneware (Albany/ Bristol slip), green glass, milk glass, clear glass, and solarized glass. There are no known structures in or near the area on any USGS quadrangle map.

NRHP Recommendation

Dyers 2 Site 1 is a historic scatter composed of domestic artifacts dating to the mid-19th to 20th century recovered from the surface collection. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that Dyers 2 Site 1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts and level of disturbance exhibited at the site due to agricultural practices.

(Vertner/Spencer 1 Site 1)

Cultural Affiliation: Mid-18 th – Late 19 th Century	Maximum artifact depth (cm): 0 m
Site Type: Historic Domestic Scatter	Artifacts: n=9
NRHP recommendation: Not Eligible	
Elevation: 299 m (981 ft) amsl	Site Dimensions: Approx. 100m N/S x 100m E/W

Site Vertner/Spencer 1 Site 1 is a historic domestic scatter identified while conducting a pedestrian survey through an active agricultural field. Artifacts collected from this area are stoneware (Bristol slip), clear glass, green glass, milk glass, aqua glass, and tile, creamware (handpainted), decal decorated porcelain, and hand-painted ironstone. The earliest structures associated with this site appear on the 1913 USGS Alger quadrangle map. These nearby historical structures are still extant in the neighboring unsurveyed area.

NRHP Recommendation

This site is a historic scatter composed of domestic artifacts dating to the mid-18th to late 19th centuries recovered from the surface collection. The earliest map of the area, 1913 Alger quadrangle map, correlates to structures in the same area, however the site has been heavily disturbed by plowing activities. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that Vertner/Spencer 1 Site 1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(Vertner/Spencer 2 Site 1)

Cultural Affiliation: Late 19th – Present

Site Type: Historic Domestic Scatter

NRHP recommendation: Not Eligible

Elevation: 298 m (977 ft) amsl

Maximum artifact depth (cm): 0 m

Artifacts: n=9

Site Dimensions: Approx. 330m N/S x 620m E/W

Site Vertner/ Spencer 2 Site 1 is a historic domestic scatter identified while conducting a pedestrian survey through an active agricultural field. Artifacts collected from this area are stoneware (Bristol slip; Albany/Bristol slip), ironstone (undecorated and handpainted), amber glass, clear glass, decal decorated porcelain, and milk glass. On the 1913 and 1943 USGS Alger quadrangle map this site sits equidistant between two (2) structures.

NRHP Recommendation

Vertner/ Spencer 2 Site 1 is a historic scatter composed of domestic artifacts dating to the late 19th century recovered from the surface collection. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that Vertner/ Spencer 2 Site 1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices

(Gratz 3 Site 1)

Cultural Affiliation: Unknown Prehistoric

Site Type: Camp

NRHP recommendation: Not Eligible

Elevation: 302 m (990 ft) amsl

Maximum artifact depth (cm): 0 m

Artifacts: n= 5

Site Dimensions: Approx. 170m N/S x 110m E/W

Gratz 3 Site 1 is a prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. Lithic reduction flakes (secondary, tertiary, and shatter) were collected from the surface. No diagnostic artifacts were collected from this site.

NRHP Recommendation

Gratz 3 Site 1 is a prehistoric lithic scatter composed solely of lithic reduction flakes. No diagnostic materials were recovered. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that Gratz 3 Site 1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(Gratz 2 Site 1)

Cultural Affiliation: Mid-19 th to 20 th Century	Maximum artifact depth (cm): 0 m
Site Type: Historic Domestic Scatter	Artifacts: n=16
NRHP recommendation: Not Eligible	
Elevation: 303 m (995 ft) amsl	Site Dimensions: Approx. 100m N/S x 30m E/W

Gratz 2 Site 1 is a historic domestic scatter identified while conducting a pedestrian survey through an active agricultural field. Surface collection of this site includes undecorated whiteware, stoneware (salt glaze and Albany/Bristol slip), clear flat glass, aqua glass, milk glass, brick, and porcelain. No structures were found in association with this site on any USGS quadrangle map.

NRHP Recommendation

Gratz 2 Site 1 is a historic scatter composed of domestic artifacts dating to the mid-19th to 20th centuries. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that Site Gratz 2 Site 1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(Gratz 1 Site 1)

Cultural Affiliation: Multicomponent Historic (mid-19 th to 20 th Century) and Unknown Prehistoric	Maximum artifact depth (cm): 0 m
Site Type: Historic Domestic Scatter; Prehistoric Open Habitation	Artifacts: n=19
NRHP recommendation: Not Eligible	
Elevation: 299 m (982 ft) amsl	Site Dimensions: Approx. 40m N/S x 205m E/W

Gratz 1 Site 1 is a historic domestic scatter identified while conducting a pedestrian survey through an active agricultural field. Surface collection of this site includes undecorated whiteware, stoneware (salt glaze and Albany/Bristol slip), clear flat glass, aqua glass, milk glass, brick, and porcelain. No structures were found in association with this site on any USGS quadrangle map.

NRHP Recommendation

Gratz 1 Site 1 is a historic scatter composed of domestic artifacts dating to the mid-19th to 20th centuries. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that Site Gratz 1 Site 1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(Richardson 3 Site 1)

Cultural Affiliation: Archaic to Woodland	Maximum artifact depth (cm): 0 m
Site Type: Camp	Artifacts: n=54
NRHP recommendation: Further Work Recommended	
Elevation: 299 m (982 ft) amsl	Site Dimensions: Approx. 330m N/S x 150m E/W

Richardson 3 Site 1 is a prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field (Figure 5). Lithic reduction flakes (secondary, tertiary, and shatter), a core and core fragment, flake tools, a flake fragment, a secondary stage biface, tertiary stage biface fragments, three PP/Ks were found during the surface collection.

NRHP Recommendation

Richardson 3 Site 1 is a prehistoric lithic scatter composed of lithic reduction flakes, various biface and core fragments as well as two diagnostic projectile points suggesting Archaic to Woodland Period occupation. Though the site has been heavily disturbed by plowing activities, TRC recommends that this site is potentially eligible for listing in the NRHP and would provide additional information to the prehistory of the region (Criterion D). Richardson 3 Site 1 should be avoided; if it cannot be avoided, additional investigations may be necessary. This determination is based on the diagnostic artifacts and the potential for buried intact archaeological deposits.



Figure 5. Overview of Richardson 3 Site 1, facing north

(PMrichardson 2-2)

Cultural Affiliation: Historic	Maximum artifact depth (cm): 0 m
Site Type: Historic Domestic Scatter	Artifacts: n=7
NRHP recommendation: Not Eligible	
Elevation: 297 m (974 ft) amsl	Site Dimensions: Approx. 10 m N/S x 10 m E/W

PMrichardson 2-2 is a historic domestic scatter identified while conducting a pedestrian survey through an active agricultural field. Surface collection of this site includes whiteware, stoneware, flat glass, milk glass, aqua glass, transfer print whiteware, porcelain doll boot. The earliest structures associated with this site appear on the 1913 USGS Alger quadrangle map.

NRHP Recommendation

PMrichardson 2-2 is a historic scatter composed of domestic artifacts dating to the late 19th century recovered from the surface collection. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that PMrichardson 2-2 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts and level of disturbance exhibited at the site due to agricultural practices.

(Richardson 1 Site 1)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 m
Site Type: Prehistoric Open Habitation	Artifacts: n=17
NRHP recommendation: Not Eligible	
Elevation: 299 m (980 ft) amsl	Site Dimensions: Approx. 80m N/S x 70m E/W

Richardson 1 Site 1 is a prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. Lithic reduction flakes (secondary, tertiary, and shatter) were collected from the surface. No diagnostic artifacts were collected from this site.

NRHP Recommendation

Richardson 1 Site 1 is a prehistoric lithic scatter composed solely of lithic reduction flakes. No diagnostic materials were recovered. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that Richardson 1 Site1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMrichardson 1-4)

Cultural Affiliation: Historic	Maximum artifact depth (cm): 0 cm
Site Type: Historic Farmstead	Artifacts: n=40
NRHP recommendation: Not Eligible	
Elevation: 299 m (980 ft) amsl	Site Dimensions: Approx. 20m N/S x 20m E/W

Site PMrichardson 1-4 is a historic scatter. The site was identified while conducting a pedestrian survey across an active agricultural field. Historic artifacts such as whiteware, stoneware, brick, miscellaneous metal, aqua glass, milk glass, blue milk glass, amethyst glass, and sponged whiteware were identified from the surface collection (n=40) Artifacts recovered date from the 19th to mid-20th century. The earliest structures associated with this site appear on the 1913 USGS Alger quadrangle map.

NRHP Recommendation

PMrichardson 1-4 is a historic scatter consisting of whiteware, stoneware, brick, miscellaneous metal, aqua glass, milk glass, blue milk glass, amethyst glass, and sponged whiteware were identified from the surface collection. The artifacts from this site date from the 19th to mid-20th

centuries and were discovered during a pedestrian survey of a plowed agricultural field. The project area has experienced a high degree of disturbance due to continuous agricultural practices. Based on the data collected during this investigation, TRC recommends that PMrichardson1-4 is not eligible for listing in the NRHP as it will not provide any additional information to the history of the region (Criterion D), specifically 19th to mid-20th century farmsteads in the region. This determination is based on the general lack of site integrity and/or age affiliation associated with the cultural materials recovered.

(Woltz 4 Site 1)

Cultural Affiliation: Multicomponent Historic mid-19 th to 20 th Century; Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Historic Domestic Scatter; Prehistoric Open Habitation	Artifacts: n=42
NRHP recommendation: Not Eligible	
Elevation: 295 m (968 ft) amsl	Site Dimensions: Approx. 180m N/S x 95m E/W

Woltz 4 Site 1 is a multicomponent historic domestic scatter and prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. The prehistoric portion is a single flake fragment. No prehistoric diagnostic artifacts were recovered from the surface. The historic component of the assemblage consists of ironstone (undecorated and handpainted), stoneware (Albany/Bristol slip), flat glass, clear glass, aqua glass, milk glass, amber glass, pressed solarized glass, doorknob, porcelain, and slag. The earliest structures associated with this site appear on the 1913 USGS Alger quadrangle map.

NRHP Recommendation

Woltz 4 Site 1 is a multicomponent historic domestic scatter and prehistoric lithic scatter composed of historic domestic artifacts dating to the mid-19th to 20th centuries and a single flake fragment collected from the ground surface. The site has been heavily disturbed by plowing activities. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts and level of disturbance exhibited at the site due to agricultural practices.

(PMS1-1)

Cultural Affiliation: Mid-19 th – 20 th Century	Maximum artifact depth (cm): 0 cm
Site Type: Historic Farmstead	Artifacts: n=6
NRHP recommendation: Not Eligible	
Elevation: 295 m (968 ft) amsl	Site Dimensions: Approx. 10m N/S x 10m E/W

PMS1-1, located within the Scarbrough 1 property, is a historic domestic scatter consisting of whiteware, stoneware (Bristol slip), milk glass, clear and amber curved glass, and clear flat glass. This site was identified while conducting a pedestrian survey across an active agricultural field. Artifacts were recovered from the plowed ground surface. The earliest depiction of associated structures appears on the 1913 USGS Alger Quadrangle map.

NRHP Recommendation

PMS1-1 is a historic domestic scatter consisting of historic ceramics and glass. This site was discovered during a pedestrian survey of an active agricultural field. The historic artifacts from this site date from the mid-19th to early-20th centuries. The historic component represents typical

occupation practices during the mid-19th to early-20th centuries. The project area has experienced a high degree of disturbance due to agricultural practices of the past 100 years. This historic component of this site is not recommended for the NRHP. Based on the data collected during this investigation, TRC recommends that PMS1-1 is not eligible for listing in the NRHP as it will not provide any additional information to the history of the region (Criterion D), specifically 19th to mid-20th century farmsteads in the region. This determination is based on the general lack of site integrity and/or age affiliation associated with the cultural materials recovered.

(Scarbrough 1 Site 1)

Cultural Affiliation: Mid-19 th – early 20 th Century	Maximum artifact depth (cm): 0 cm
Site Type: Historic Farmstead	Artifacts: n=26
NRHP recommendation: Not Eligible	
Elevation: 295 m (968 ft) amsl	Site Dimensions: Approx. 660m N/S x 150 m E/W

Scarbrough 1 Site 1 is a historic domestic scatter consisting of ironstone (undecorated; decal decorated; transfer-print), stoneware (Albany slip; hand-painted; stamped), clear curved glass, pressed/molded milk glass, flat glass, aqua glass, embroidered bottle glass, clear glass, aqua glass, green glass, solarized glass, and porcelain (decal decorated and undecorated). This site was identified while conducting a pedestrian survey across an active agricultural field. Artifacts were recovered from the plowed ground surface. Scarbrough 1 Site 1 can be attributed to a row of structures depicted on the 1913 Alger Ohio USGS topographic quadrangle and represents typical occupation practices during the mid-19th to early-20th centuries.

NRHP Recommendation

Site Scarbrough 1 Site 1 is a historic domestic scatter consisting of historic ceramics and glass. This site was discovered during a pedestrian survey of an active agricultural field. The historic artifacts from this site date from the mid-19th to early-20th centuries. The historic component represents typical occupation practices during the mid-19th to early-20th centuries. This site correlates, at the earliest, to a row of structures on the 1913 USGS Alger quadrangle map. The project area has experienced a high degree of disturbance due to agricultural practices of the past 100 years. This historic component of this site is not recommended for the NRHP. Based on the data collected during this investigation, TRC recommends that Scarbrough1 Site1 is not eligible for listing in the NRHP as it will not provide any additional information to the history of the region (Criterion D), specifically 19th to mid-20th century farmsteads in the region. This determination is based on the general lack of site integrity and/or age affiliation associated with the cultural materials recovered.

(PMW3 Site 3)

Cultural Affiliation: mid-19 th to early 20 th Century	Maximum artifact depth (cm): 0 cm
Site Type: Historic Farmstead	Artifacts: n=6
NRHP recommendation: Not Eligible	
Elevation: 300 m (986 ft) amsl	Site Dimensions: Approx. 130m N/S x 150m E/W

PMW3 Site 3 located within the Watkins 3 property is a historic farmstead scatter. The site was identified while conducting a pedestrian survey across an active agricultural field (Figure 6). Historic artifacts such as stoneware (Albany slip and salt glazed), undecorated ironstone, clear glass, solarized glass, and aqua glass, were identified from the surface collection (n=6). Artifacts

recovered date from the late-19th to mid-20th centuries. The earliest depiction of associated structures appears on the 1913 USGS Alger Quadrangle map.

NRHP Recommendation

PMW3 Site 3 is a historic scatter of historic glass and ceramics. The artifacts from this site date from the mid-19th to early-20th centuries. This site was discovered during a pedestrian survey of an active agricultural field and can be attributed to multiple structures depicted on the 1913, 1943, and 1961 Alger Ohio USGS topographic quadrangles. A single house has been documented by the OHPO, known as the William A & Richard M Watkins House, in the northeastern corner of this site. The house was extant during a resurvey in 2013. As of the 2020 survey the Watkins House is no longer standing. Based on the data collected during this investigation, TRC recommends that PMW3 Site 3 is not eligible for listing in the NRHP as it will not provide any additional information to the history of the region (Criterion D), specifically 19th to mid-20th century farmsteads in the region. This determination is based on the general lack of site integrity and/or age affiliation associated with the cultural materials recovered.



Figure 6. Overview of PMW3 Site3, facing north

(Watkins 3 Site 1)

Cultural Affiliation: Multicomponent Historic (mid-19 th to 20 th) and Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Historic Farmstead and Prehistoric Lithic Scatter	Artifacts: n=25
NRHP recommendation: Not Eligible	
Elevation: 298 m (976 ft) amsl	Site Dimensions: Approx. 40 m N/S x 25 m E/W

Watkins 3 Site1 is a multicomponent historic domestic scatter and prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. Lithic reduction flakes (secondary, tertiary, and shatter), a core, a groundstone fragment, and a tertiary stage biface fragment were collected from the surface. The historic component of the assemblage consists of an Indian Head Penny (1885), undecorated ironstone, solarized glass, and green glass.

NRHP Recommendation

Watkins 3 Site 1 is a multicomponent historic and prehistoric site composed of historic domestic artifacts dating to the mid-19th to 20th century and nondiagnostic lithic scatter. The site has been heavily disturbed by plowing activities. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts and level of disturbance exhibited at the site due to agricultural practices.

(Watkins 3 Site 2)

Cultural Affiliation: Late Woodland	Maximum artifact depth (cm): 0 cm
Site Type: Camp	Artifacts: n=9
NRHP recommendation: Further Work Recommended	
Elevation: 299 m (982 ft) amsl	Site Dimensions: Approx. 20 m N/S x 30 m E/W

Watkins 3 Site 2 is a prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. Lithic reduction flakes (tertiary, and shatter), tertiary stage biface fragments, a ground stone fragment, and a Hamilton PP/K were found during the surface collection.

NRHP Recommendation

Watkins 3 Site 2 is a prehistoric lithic scatter composed of lithic reduction flakes, biface and groundstone fragments, and a PP/K. One diagnostic Hamilton PP/K was recovered from the surface collection suggests Late Woodland. Though the site has been heavily disturbed by plowing activities, TRC recommends that this site is potentially eligible for listing in the NRHP and would provide additional information to the prehistory of the region (Criterion D). Watkins 3 Site 2 should be avoided; if it cannot be avoided, additional investigations may be necessary. The determination is based on the diagnostic artifacts and the potential for buried intact archaeological deposits.

(Harpster Site 1)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Lithic Scatter	Artifacts: n=83
NRHP recommendation: Further Work Recommended	
Elevation: 302 m (990 ft) amsl	Site Dimensions: Approx. 330m N/S x 620m E/W

Harpster Site 1 is a prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. Lithic reduction flakes (secondary, tertiary, and shatter), a grooved groundstone, groundstone fragments, flake fragments, secondary stage biface fragments, tertiary stage biface fragments, cores and core fragments, and a side-notched PP/K were found during the surface collection.

NRHP Recommendation

Harpster Site 1 is a prehistoric lithic scatter composed of lithic reduction flakes, cores and core fragments, biface fragments, groundstone tools and fragments, flake fragments, and a side-notched PP/K were recovered from the surface collection; Though the site has been heavily disturbed by plowing activities, TRC recommends that this site is potentially eligible for listing in the NRHP and would provide additional information to the prehistory of the region (Criterion D). Site Harpster Site1 should be avoided; if it cannot be avoided, additional investigations may be necessary. The determination is based on the diagnostic artifacts and the potential for buried intact archaeological deposits.

(Harpster Site 2)

Cultural Affiliation: Mid-19 th – Early 20 th Century	Maximum artifact depth (cm): 0 cm
Site Type: Historic Domestic Scatter	Artifacts: n=29
NRHP recommendation: Further Work Recommended	
Elevation: 302 m (990 ft) amsl	Site Dimensions: Approx. 10 m N/S x 10 m E/W

Harpster Site 2 is a historic farmstead scatter. The site was identified while conducting a pedestrian survey across an active agricultural field. Historic artifacts such as stoneware (Albany/Bristol slip and hand-painted), ironstone (undecorated and pressed/ molded), miscellaneous metal, brick, clear flat glass, clear curved glass, aqua glass, solarized glass (curved and pressed/molded), milk glass, and brick were identified from the surface collection (n=29). Artifacts recovered date from the late-19th to mid-20th centuries. The earliest depiction of associated structures appears on the 1913 USGS Alger Quadrangle map.

NRHP Recommendation

Harpster Site 2 is a historic scatter consisting of whiteware, stoneware, milk glass, flat glass, amethyst glass, yellow ware, bathroom porcelain, UID metal, and brick. The artifacts from this site date from the mid-19th to 20th centuries. This site was discovered during a pedestrian survey of an active agricultural field. The project area has experienced a high degree of disturbance due to agricultural practices. Though the site has been heavily disturbed by plowing activities, TRC recommends that this site is potentially eligible for listing in the NRHP and would provide additional information to the history of the region (Criterion D). Harpster Site 2 should be avoided; if it cannot be avoided, additional investigations may be necessary. The determination is based on the diagnostic artifacts and the potential for buried intact archaeological deposits.

(TRC-HC-5)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 m
Site Type: Prehistoric Open Habitation	Artifacts: n=4
NRHP recommendation: Not Eligible	
Elevation: 299 m (980 ft) amsl	Site Dimensions: Approx. 80m N/S x 70m E/W

TRC-HC-5 is a prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field. Lithic reduction flakes (secondary, tertiary, and shatter) were collected from the surface. No diagnostic artifacts were collected from this site.

NRHP Recommendation

TRC-HC-5 is a prehistoric lithic scatter composed solely of lithic reduction flakes. No diagnostic materials were recovered. Based on the data collected during this survey and consultation with the OHPO, TRC recommends that TRC-HC-5 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(TRC-HC-7)

Cultural Affiliation: Early Archaic, Late Woodland to Mississippian	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Lithic Scatter	Artifacts: n=6
NRHP recommendation: Further Work Recommended	
Elevation: 299 m (981 ft) amsl	Site Dimensions: Approx. 60 m N/S x 230 m E/W

TRC-HC-7 is a prehistoric lithic scatter identified while conducting a pedestrian survey through an active agricultural field associated with the Pohlman 2 property. One utilized flake of Cedarville-Guelph chert, two tertiary stage bifaces, and three projectile points were found during the surface collection.

NRHP Recommendation

TRC-HC-7 is a prehistoric lithic scatter composed largely of diagnostic projectile points made of Cedarville-Guelph, Ten Mile Creek and Delaware cherts. Diagnostic artifacts include one Madison point (Late Woodland to Mississippian) and one Brewerton Side Notched point (Early Archaic). Though the site has been heavily disturbed by plowing activities, TRC recommends that this site is potentially eligible for listing in the NRHP and would provide additional information to the history of the region (Criterion D). Site TRC-HC-7 should be avoided; if it cannot be avoided, additional investigations may be necessary. The determination is based on the diagnostic artifacts and the potential for buried intact archaeological deposits.

Isolate Find Sites

(PMP5-1)

Cultural Affiliation: Unknown Prehistoric
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 297 m (975 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

PMP5-1 is a prehistoric isolated find consisting of a non-diagnostic groundstone abrader. The abrader was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected and no other artifacts were recovered.

NRHP Recommendation

PMP5-1 is an isolated prehistoric find consisting of a single groundstone tool. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMP5-1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMD3-2)

Cultural Affiliation: Unknown Prehistoric
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 303 m (993 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

PMD3-2 is a prehistoric isolated find consisting of shatter. The shatter was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMD3-2 is an isolated prehistoric find consisting of a single piece of shatter. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMD3-2 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMD3-5)

Cultural Affiliation: Unknown Prehistoric
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 304 m (997 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

PMD3-5 is a prehistoric isolated find consisting of a tertiary flake. The flake was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMD3-5 is an isolated prehistoric find consisting of a single flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMD3-5 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMD2-2)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 302 m (992 ft) amsl	Site Dimensions: N/A

PMD2-2 is a prehistoric isolated find consisting of one tertiary flake. The flake was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMD2-2 is an isolated prehistoric find consisting of a single flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that 33HR452 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMG2-1)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 303 m (993 ft) amsl	Site Dimensions: N/A

PMG2-1 is a prehistoric isolated find consisting of a tertiary flake. The flake was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMG2-1 is an isolated prehistoric find consisting of a single flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMG2-1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMG1-4)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=2
NRHP recommendation: Not Eligible	
Elevation: 298 m (977 ft) amsl	Site Dimensions: N/A

PMG1-4 is a prehistoric isolated find consisting of a tertiary stage biface fragment and a tertiary flake. They were identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMG1-4 is an isolated prehistoric find consisting of a biface fragment and a flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMG1-4 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMrichardson 2-1)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 298 m (979 ft) amsl	Site Dimensions: N/A

PMrichardson 2-1 is a prehistoric isolated find consisting of a tertiary flake. The flake was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMrichardson 2-1 is an isolated prehistoric find consisting of a single flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMrichardson 2-1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMrichardson2-3)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 298 m (979 ft) amsl	Site Dimensions: N/A

PMrichardson 2-3 is a prehistoric isolated find consisting of a non-diagnostic projectile point tip. The point tip was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMrichardson 2-3 is an isolated prehistoric find consisting of a single flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMG2-1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(ABW1-2)

Cultural Affiliation: Unknown Prehistoric
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 296 m (972 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

ABW1-2 is a prehistoric isolated find consisting of a single tertiary flake. The flake was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

ABW1-2 is an isolated prehistoric find consisting of a nondiagnostic flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that ABW1-2 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(ABW2-1)

Cultural Affiliation: Historic Domestic
Site Type: Historic Isolate
NRHP recommendation: Not Eligible
Elevation: 295 m (969 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=4
Site Dimensions: N/A

ABW2-1 is a historic isolated find consisting of solarized glass (same vessel) and porcelain. These were identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

ABW2-1 is an isolated prehistoric find consisting of glass and ceramic. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that ABW2-1 is not eligible for listing in the NRHP as it will not provide any additional information to the history of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(ABW3-1)

Cultural Affiliation: Unknown Prehistoric
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 295 m (969 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

ABW3-1 is a prehistoric isolated find consisting of a groundstone fragment. The fragment was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

ABW3-1 is an isolated prehistoric find consisting of a single groundstone fragment. No other artifacts were found in association with this isolated find on the surface. Based on the data collected

during this investigation, TRC recommends that ABW3-1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMW3-3)

Cultural Affiliation: Archaic to Woodland	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 302 m (989 ft) amsl	Site Dimensions: N/A

PMW3-3 is a prehistoric isolated find consisting of a stemmed PP/K. The PP/K was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMW3-3 is an isolated prehistoric find consisting of Archaic to Woodland Period projectile point. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMW3-3 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(PMB 1-3)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 302 m (989 ft) amsl	Site Dimensions: N/A

PMB 1-3 is a prehistoric isolated find consisting of a tertiary stage biface fragment. The biface was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

PMB 1-3 is an isolated prehistoric find consisting of a nondiagnostic biface fragment. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that PMB 1-3 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(TRC-HC-1)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 302 m (989 ft) amsl	Site Dimensions: Approx. 12m N/S x 25 m E/W

TRC-HC-1 is a prehistoric lithic isolate of a secondary stage biface made of Pipe Creek Chert. This biface was identified while conducting a pedestrian survey through an active agricultural

field. The exposed ground surface with a 15-m radius of the find was systemically inspected and no other artifacts were recovered.

NRHP Recommendation

TRC-HC-1 is an isolated prehistoric find consisting of a single biface. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that TRC-HC-1 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(TRC-HC-4)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 303 m (994 ft) amsl	Site Dimensions: Approx. 15 m N/S x 25 m E/W

TRC-HC-4 is a prehistoric lithic isolate of a tertiary stage biface fragment (drill tip) made of Upper Mercer chert. This biface was identified while conducting a pedestrian survey through an active agricultural field. The exposed ground surface with a 15-m radius of the find was systemically inspected and no other artifacts were recovered.

NRHP Recommendation

TRC-HC-4 is an isolated prehistoric find consisting of a single biface. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that TRC-HC-4 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(TRC-HC-6)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 302 m (991 ft) amsl	Site Dimensions: N/A

TRC-HC-6 is a prehistoric isolated find identified consisting of a tertiary stage Delaware biface fragment was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

TRC-HC-6 is an isolated prehistoric find consisting of a single Delaware biface fragment. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that TRC-HC-6 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(IF2)

Cultural Affiliation: Unknown Prehistoric
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 303 m (994 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

IF2 is a prehistoric isolated find consisting of a secondary stage Cedarville-Guelph biface identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

IF2 is an isolated prehistoric find consisting of a single Cedarville-Guelph biface. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that IF2 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(IF3)

Cultural Affiliation: Unknown Prehistoric
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 302 m (990 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

IF3 is a prehistoric isolated find consisting of tertiary stage Cedarville-Guelph biface fragment was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

IF3 is an isolated prehistoric find consisting of single Cedarville-Guelph biface fragment. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that IF3 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(IF4)

Cultural Affiliation: Early Archaic
Site Type: Prehistoric Isolate
NRHP recommendation: Not Eligible
Elevation: 303 m (993 ft) amsl

Maximum artifact depth (cm): 0 cm
Artifacts: n=1
Site Dimensions: N/A

IF4 is a prehistoric isolated find consisting of a Big Sandy projectile point made of Vanport chert was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

IF4 is an isolated prehistoric find consisting of an Early Archaic Period projectile point. No other artifacts were found in association with this isolated find on the surface. Based on the data collected

during this investigation, TRC recommends that IF4 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(IF5)

Cultural Affiliation: Late Archaic	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 305 m (1000 ft) amsl	Site Dimensions: N/A

IF5 is a prehistoric isolated find consisting of a Late Archaic Stemmed PP/K made of Delaware chert was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

IF5 is an isolated prehistoric find consisting of a Late Archaic period point. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that IF5 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(IF6)

Cultural Affiliation: Unknown Prehistoric	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1
NRHP recommendation: Not Eligible	
Elevation: 304 m (996 ft) amsl	Site Dimensions: N/A

IF6 is a prehistoric isolated find consisting of a tertiary stage biface made of Vanport chert identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

IF6 is an isolated prehistoric find consisting of a single biface. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that IF6 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(IF7)

Cultural Affiliation: Early Archaic	Maximum artifact depth (cm): 0 cm
Site Type: Prehistoric Isolate	Artifacts: n=1 from surface
NRHP recommendation: Not Eligible	
Elevation: 298 m (978 ft) amsl	Site Dimensions: N/A

IF7 is a prehistoric isolated find consisting of one Lost Lake PP/K made of Cedarville-Guelph chert. The PP/K was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

IF7 is an isolated prehistoric find consisting of an Early Archaic Period projectile point. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that IF7 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

(IF10)

Cultural Affiliation: Unknown Prehistoric

Maximum artifact depth (cm): 0 cm

Site Type: Prehistoric Isolate

Artifacts: n=1

NRHP recommendation: Not Eligible

Elevation: 298 m (979 ft) amsl

Site Dimensions: N/A

IF10 is a prehistoric isolated find consisting of a non-diagnostic projectile point tip. The point tip was identified while conducting a pedestrian survey in an active agricultural field. The exposed ground surface within a 15-m radius of the find was systematically inspected.

NRHP Recommendation

IF10 is an isolated prehistoric find consisting of a single flake. No other artifacts were found in association with this isolated find on the surface. Based on the data collected during this investigation, TRC recommends that IF10 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

Previously Recorded Sites

Site 33HR202

Cultural Affiliation: Archaic; Historic	Maximum artifact depth (cm): 0
Site Type: Camp Site; Historic Domestic	Artifacts: 37 Collected in 2009/2011; 3 in 2019
NRHP recommendation: Further Work Recommended	
Elevation: 298 m (994 ft) amsl	Site Dimensions: Approx. 800m N/S x 175m E/W

Site 33HR202 was first identified as a prehistoric lithic cluster in 2009. A Cedarville-Guelph Chert Miami River pentagonal projectile point was the single diagnostic artifact dating to the Late Archaic. A second survey of the site in 2011 identified a Kirk stemmed/serrate point and a Glacial Kame Miami River pentagonal point dating to the Early Archaic. The historic component consists of two pieces of flat glass (Tetra Tech, Inc. 2010). Artifacts recovered from the current survey include a Kirk Corner-Notched PP/K, a Lamoka PP/K, and a tertiary stage biface fragment. The site was revisited in 2020 (FS Watkins 2 Site 1). A total of three (3) additional artifacts were recovered during the survey. The site has been impacted by past agricultural activities; however, the artifact density suggests that portions of this site may be intact, specifically the southernmost portion.

NRHP Recommendation

Site 33HR202 is a prehistoric lithic cluster. Artifacts from previous and current surveys indicated that the site has the potential to contain significant data pertaining to the prehistory of the region. Additional work or avoidance was recommended. TRC concurs with that recommendation and recommends that this site should be avoided. If avoidance is not feasible additional work would be required to determine whether intact features or significant artifact deposits are present that would make this site eligible for the NRHP.

Site 33HR204

Cultural Affiliation: Historic (mid-19 th Century)	Maximum artifact depth (cm): 0cm
Site Type: Historic Domestic	Artifacts: 200+ collected in 2009/2011; 7 2020
NRHP recommendation: Further Work Recommended	
Elevation: 301 m (987.5 ft) amsl	Site Dimensions: Approx. 100m N/S x 100m E/W

Site 33HR204 was identified in 2009 as a historic scatter on a low rise in a field west of the Scioto Marsh. Research during the previous investigation revealed that this site is associated with a farmstead belonging to John F. Suder found on the 1879 Hardin County Atlas. At the time of the original survey no features or foundations were located. Diagnostic artifacts recovered during the 2009 investigation include an 1889 US cent piece and an ironstone ceramic plate manufactured in east Liverpool, Ohio in 1885, along with other household, personal, and architectural artifacts (Tetra Tech, Inc. 2010). The structures appear to no longer be standing on the 1913 USGS Alger quadrangle map. Artifacts recovered include stoneware (alkaline glaze and Albany slip), ironstone (undecorated; sponge decoration, decal decoration), and yellow ware (undecorated and Mocha decoration).

The site was revisited in 2020 (FS PMVS1-2). A total of seven (7) additional artifacts were recovered during the survey. The site has been impacted by past agricultural activities; however, the artifact density suggests that portions of this site may be intact.

NRHP Recommendation

Site 33HR204 is a large scatter of a historic farmstead. Artifacts and Tetra Tech, Inc. (2010) indicated that the site has the potential to contain significant data pertaining to the history of the region. Additional work or avoidance was recommended. TRC concurs with that recommendation and recommends that this site should be avoided. If avoidance is not feasible additional work would be required to determine whether intact features or significant artifact deposits are present that would make this site eligible for the NRHP.

Site 33HR226

Cultural Affiliation: Multicomponent Historic (mid-18th -20th Century) and Unknown Prehistoric

Maximum artifact depth (cm): 0 cm

Site Type: Historic Domestic Scatter and Prehistoric Lithic Scatter

Artifacts: 1 collected 2009

NRHP recommendation: Further Work Recommended

Elevation: 302m (990 ft) amsl

Site Dimensions: Approx. 550m N/S x 150m E/W

Site 33HR226 (Gary Hall Site 1) was identified in 2009. A single piece of lithic shatter was collected by Tetra Tech, Inc. (2010). The site was revisited in 2020 and reidentified while conducting a pedestrian survey through an active agricultural field (Figure 7). Lithic reduction flakes (primary, secondary, tertiary, and shatter), tertiary stage biface fragments, and a flake fragment were found during the surface collection (PMFK). The historic assemblage consisted of stoneware (Albany slip; alkaline glaze), ironstone (undecorated; decal decorated; handpainted), sponge decorated creamware, green glass, milk glass, solarized glass, aqua glass, cobalt blue glass, clear glass. The historic component can be attributed to structures on the 1913 USGS Alger quadrangle map at the earliest. The site has been impacted by past agricultural activities; however, the artifact density suggests that portions of this site may be intact, specifically the large dense prehistoric lithic scatter in the western edge of the property.

NRHP Recommendation

33HR226 (Gary Hall Site1) is a large, multi-component historic and prehistoric lithic scatter composed of mid -18th to 20th century historic farmstead artifacts and nondiagnostic prehistoric lithics. TRC recommends that 33HR226 (Gary Hall Site 1) is potentially eligible for listing in the NRHP and could provide additional information to the prehistory and history of the region (Criterion D). 33HR226 (Site Gary Hall Site 1) should be avoided; if this resource cannot be avoided, additional investigations may be necessary. The determination is based on the diagnostic artifacts and the potential for buried intact archaeological deposits.



Figure 7. Overview of 33HR226 (Gary Hall Site1), facing east.

Site 33HR253

Cultural Affiliation: Late Archaic, Early Woodland

Site Type: Camp Site

NRHP recommendation: Not Eligible

Elevation: 298 m (994 ft) amsl

Maximum artifact depth (cm): 0 cm

Artifacts: 6 collected in 2011;

Site Dimensions: Approximately 28 m N/S x 40 m E/W

Site 33HR253 was identified in 2011 as a prehistoric lithic scatter dating to the Late Archaic and Early Woodland. The site was revisited in 2020 and a single flake was collected (FS PMG1-3). There is no need to adjust the current site boundaries due to the lack of additional artifacts from the 2020 survey.

NRHP Recommendation

Site 33HR253 is a dispersed prehistoric debitage scatter. Diagnostic artifacts recovered from the initial survey indicate the presence of the Adena and Hopewell cultures (Tetra Tech, Inc. 2010). Based on the data collected during this and the previous investigation, TRC recommends that 33HR253 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

Site 33HR261**Cultural Affiliation:** Unknown Prehistoric**Site Type:** Camp Site**NRHP recommendation:** Not Eligible**Elevation:** 298 m (994 ft) amsl**Maximum artifact depth (cm):** 0 cm**Artifacts:** 2 collected in 2011**Site Dimensions:** Approximately 28 m N/S x 40 m E/W

Site 33HR261 was identified in 2011 as a prehistoric lithic scatter dating to an unknown prehistoric cultural period. The site was revisited in 2020 and a single tertiary flake was collected (FS PMVS 2-1). There is no need to adjust the current site boundaries due to the lack of additional artifacts from the 2020 survey.

NRHP Recommendation

Site 33HR2613 is a dispersed prehistoric debitage scatter. Based on the data collected during this and the previous investigation, TRC recommends that 33HR261 is not eligible for listing in the NRHP as it will not provide any additional information to the prehistory of the region (Criterion D). This determination is based on the absence of diagnostic artifacts, and level of disturbance exhibited at the site due to agricultural practices.

6.0 Conclusions and Recommendations

TRC, under contract to Hardin Solar II, prepared this Addendum I (Report) to the *August 2019 (Second Revision March 2020) Phase I Archaeological Survey of the Hardin Solar Energy Center Project, Hardin County, Ohio (2020-HAR-43182)*. The newly acquired, approximately 668 ha (1651.49 ac) of rolling agricultural fields reviewed for the purposes of this Report (the Project) are proposed additional areas of the Hardin Solar II Energy Center, which received a Certificate of Environmental Compatibility and Public Need from the Ohio Power Siting Board on May 16, 2019. This Report summarizes the results of the third field survey conducted for the Hardin Solar II Energy Center.

During the months of October through December 2019 and March through May 2020, TRC conducted an intensive archaeological survey of the APE with survey methodology meeting or exceeding the field standards for terrestrial Phase I Cultural Resource Survey set by the OHPO. In areas of agricultural land that have been mechanically plowed/disked and rain-washed, where visibility was greater than 80 percent, a systematic pedestrian survey as well as a controlled surface collection was employed throughout these portions of the APE for direct effects. High surface visibility allowed for a pedestrian walkover conducted at 5 m (16.4 ft), 10 m (32 ft), and 20 m (65 ft) intervals across the entire APE, based on probability of site identification, in order to visually inspect the ground surface for cultural materials. The APE can be characterized as very flat with slight undulations in some areas.

In total, TRC's survey efforts identified 46 newly recorded archaeological resources (site designation number assignments are in progress): seven (7) prehistoric lithic scatters, 11 historic scatters, five (5) multicomponent historic/prehistoric sites, 22 prehistoric isolated finds and one (1) historic isolated find. In addition, five (5) previously recorded sites were reidentified as a result of the survey. A total of 514 artifacts throughout the entire APE were recovered. Based on the results of the survey, 17 of the newly recorded sites, all 23 isolated finds, and two (2) of the previously recorded sites are recommended not eligible for listing on the NRHP as they will not provide additional information to the history or prehistory of the region (Criterion D). This recommendation is based on the absence of above ground and/ or subsurface features, the level of disturbance exhibited within project APE associated with annual agricultural practices, and the paucity of artifacts recovered in those locations.

TRC recommends that the remaining nine (9) sites are potentially eligible for listing in the NRHP and could provide additional information to the prehistory of the region (Criterion D). These sites should be avoided; if they cannot be avoided, additional investigations may be necessary. These determinations are based on the diagnostic artifacts and the potential for buried intact archaeological deposits. If avoidance is not a project design option, additional archaeological survey evaluation is recommended for six (6) new sites (Pohlman 5 Site 1, Richardson 3 Site 1, Watkins 3 Site 2, Harpster Site 1, Harpster Site 2, and TRC-HC-7), and three (3) previously recorded sites (33HR202, 33HR204, and 33HR226), based on the artifacts recovered and their potential to contribute to the overall prehistory/history of the area, similar to those resources identified as a result of the *Phase I Archaeological Survey of the Hardin Solar Energy Center Project, Hardin County, Ohio* (August 2019, Second Revision March 2020).

7.0 References

Jacoby, Robert

2010 Phase I Archaeological Survey of the Proposed Hardin Wind Farm, Townships of Cessna, Lyn, Marion, and McDonald, Hardin County, Ohio. Tetra Tech EC.

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2018 Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey, web site: <http://websoilsurvey.sc.egov.usda.gov/>. Accessed June 30, 2018.

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1913 Alger, Ohio Quadrangle. Department of the Interior, Washington, D.C.

1943 Alger, Ohio 15-Minute Series Quadrangle. Department of the Interior, Washington, D.C.

1961 Alger, Ohio 7.5-Minute Series Topographic Quadrangle. Department of the Interior, Washington, D.C.

APPENDIX A

ARTIFACT CATALOG

Catalog #	Field Site #	Provenience	Depth (cmbs)	Artifact Description	Count
HIS-19-06-772	ABG 3-1	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-773	ABG 3-1	Surface Collection	surface	Shatter	1
HIS-19-06-774	ABG 3-2	Surface Collection	surface	Shatter	1
HIS-19-06-775	ABW 1-1	Surface Collection	surface	Nail, Cut	1
HIS-19-06-776	ABW 1-1	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-777	ABW 1-1	Surface Collection	surface	Glass, Solarized Flat	2
HIS-19-06-778	ABW 1-1	Surface Collection	surface	Milk Glass, Jar Lid Liner	2
HIS-19-06-779	ABW 1-2	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-780	ABW 2-1	Surface Collection	surface	Porcelain, Undecorated	1
HIS-19-06-781	ABW 2-1	Surface Collection	surface	Glass, Solarized Curved	3
HIS-19-06-782	ABW 3-1	Surface Collection	surface	Ground Stone fragment	1
HIS-19-06-783	ABW 4-1	Surface Collection	surface	Flake Fragment	1
HIS-19-06-784	ABW 4-1	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-785	ABW 4-1	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-786	ABW 4-2	Surface Collection	surface	Porcelain, Undecorated	1
HIS-19-06-787	ABW 4-2	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-788	ABW 4-2	Surface Collection	surface	Glass, Clear Flat	2
HIS-19-06-789	ABW 4-2	Surface Collection	surface	Glass, Clear Curved	3
HIS-19-06-790	ABW 4-2	Surface Collection	surface	Glass, Aqua Curved	2
HIS-19-06-791	ABW 4-2	Surface Collection	surface	Glass, Solarized Curved	2
HIS-19-06-792	ABW 4-2	Surface Collection	surface	Milk Glass, Jar Lid Liner	1
HIS-19-06-793	ABW 4-3	Surface Collection	surface	Stoneware, Albany/Bristol Slip	2
HIS-19-06-794	ABW 4-3	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-795	ABW 4-3	Surface Collection	surface	WRE, Handpainted	3
HIS-19-06-796	ABW 4-3	Surface Collection	surface	Glass, Clear Flat	4
HIS-19-06-797	ABW 4-3	Surface Collection	surface	Glass, Clear Curved	3
HIS-19-06-798	ABW 4-3	Surface Collection	surface	Glass, Solarized Curved	2
HIS-19-06-799	ABW 4-3	Surface Collection	surface	Glass, Amber Curved	1
HIS-19-06-800	ABW 4-3	Surface Collection	surface	Glass, Aqua Curved	3
HIS-19-06-801	ABW 4-3	Surface Collection	surface	Milk Glass, Undecorated	3
HIS-19-06-802	ABW 4-3	Surface Collection	surface	Other, Slag	1
HIS-19-06-803	ABW 4-4	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-804	ABW 4-4	Surface Collection	surface	Glass, Clear Flat	1
HIS-19-06-805	ABW 4-4	Surface Collection	surface	Glass, Clear Curved	1

HIS-19-06-806	PMD 2-1	Surface Collection	surface	Glass, Clear Curved	3
HIS-19-06-807	PMD 2-1	Surface Collection	surface	Milk Glass, Jar Lid Liner	2
HIS-19-06-808	PMD 2-2	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-809	PMD 2-3	Surface Collection	surface	Stoneware, Albany/Bristol Slip	2
HIS-19-06-810	PMD 2-3	Surface Collection	surface	WRE, Decal Decorated	1
HIS-19-06-811	PMD 2-3	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-812	PMD 2-3	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-813	PMD 2-3	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-814	PMD 2-3	Surface Collection	surface	Glass, Green Curved	1
HIS-19-06-815	PMD 2-3	Surface Collection	surface	Milk Glass, Jar Lid Liner	1
HIS-19-06-816	PMD 3-1	Surface Collection	surface	Stoneware, Salt Glazed	1
HIS-19-06-817	PMD 3-1	Surface Collection	surface	Stoneware, Albany/Bristol Slip	4
HIS-19-06-818	PMD 3-1	Surface Collection	surface	Porcelain, Undecorated	3
HIS-19-06-819	PMD 3-1	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-820	PMD 3-1	Surface Collection	surface	Glass, Clear Flat	3
HIS-19-06-821	PMD 3-1	Surface Collection	surface	Glass, Clear Curved	2
HIS-19-06-822	PMD 3-1	Surface Collection	surface	Glass, Aqua Curved	3
HIS-19-06-823	PMD 3-1	Surface Collection	surface	Milk Glass	2
HIS-19-06-824	PMD 3-1	Surface Collection	surface	Other, Slag	1
HIS-19-06-825	PMD 3-1	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-826	PMD 3-1	Surface Collection	surface	Flake Fragment	2
HIS-19-06-827	PMD 3-1	Surface Collection	surface	Shatter	1
HIS-19-06-828	PMD 3-2	Surface Collection	surface	Shatter	1
HIS-19-06-829	PMD 3-3	Surface Collection	surface	Stoneware, Albany/Bristol Slip	3
HIS-19-06-830	PMD 3-3	Surface Collection	surface	Porcelain, Pressed/Molded	1
HIS-19-06-831	PMD 3-3	Surface Collection	surface	WRE, Transferprint	1
HIS-19-06-832	PMD 3-3	Surface Collection	surface	WRE, Undecorated	3
HIS-19-06-833	PMD 3-3	Surface Collection	surface	Glass, Clear Flat	2
HIS-19-06-834	PMD 3-3	Surface Collection	surface	Milk Glass, Jar Lid Liner	2
HIS-19-06-835	PMD 3-4	Surface Collection	surface	Stoneware, Salt Glazed	1
HIS-19-06-836	PMD 3-4	Surface Collection	surface	Stoneware, Albany/Bristol Slip	2
HIS-19-06-837	PMD 3-4	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-838	PMD 3-4	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-839	PMD 3-5	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-840	PMD 3-6	Surface Collection	surface	Stoneware, Salt Glazed	1

HIS-19-06-841	PMD 3-6	Surface Collection	surface	WRE, Undecorated	3
HIS-19-06-842	PMD 3-6	Surface Collection	surface	WRE, Shell Edge	4
HIS-19-06-843	PMD 3-6	Surface Collection	surface	WRE, Handpainted	8
HIS-19-06-844	PMD 3-6	Surface Collection	surface	WRE, Transferprint	5
HIS-19-06-845	PMD 3-6	Surface Collection	surface	Glass, Clear Flat	1
HIS-19-06-846	PMD 3-6	Surface Collection	surface	Milk Glass	1
HIS-19-06-847	PMD 3-7	Surface Collection	surface	Flake Fragment	1
HIS-19-06-848	PMD 3-8	Surface Collection	surface	Flake Fragment	1
HIS-19-06-849	PMD 3-9	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-850	PMG 1-1	Surface Collection	surface	Stoneware, Salt Glazed	1
HIS-19-06-851	PMG 1-1	Surface Collection	surface	Stoneware, Albany/Bristol Slip	2
HIS-19-06-852	PMG 1-1	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-853	PMG 1-1	Surface Collection	surface	Glass, Clear Flat	1
HIS-19-06-854	PMG 1-1	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-855	PMG 1-1	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-856	PMG 1-1	Surface Collection	surface	Milk Glass, Embossed	1
HIS-19-06-857	PMG 1-1	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-858	PMG 1-2	Surface Collection	surface	Stoneware, Albany/Bristol Slip	9
HIS-19-06-859	PMG 1-3	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-860	PMG 1-4	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-861	PMG 1-4	Surface Collection	surface	PP/K	1
HIS-19-06-862	PMG 2-1	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-863	PMG 2-2	Surface Collection	surface	Stoneware, Salt Glazed	1
HIS-19-06-864	PMG 2-2	Surface Collection	surface	Stoneware, Albany/Bristol Slip	3
HIS-19-06-865	PMG 2-2	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-866	PMG 2-2	Surface Collection	surface	Brick, Unidentified	1
HIS-19-06-867	PMG 2-2	Surface Collection	surface	Glass, Clear Flat	1
HIS-19-06-868	PMG 2-2	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-869	PMG 2-2	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-870	PMG 2-2	Surface Collection	surface	Milk Glass, Jar Lid Liner	1
HIS-19-06-871	PMG 2-3	Surface Collection	surface	Porcelain, Undecorated	1
HIS-19-06-872	PMG 2-3	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-873	PMG 2-3	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-902	PMH 1-1	Surface Collection	surface	Secondary Flake	1
HIS-19-06-903	PMH 1-1	Surface Collection	surface	Shatter	1

HIS-19-06-904	PMH 1-1	Surface Collection	surface	Ground Stone, Grooved	1
HIS-19-06-905	PMH 1-2	Surface Collection	surface	Stoneware, Albany/Bristol Slip	1
HIS-19-06-906	PMH 1-2	Surface Collection	surface	Brick, Unidentified	1
HIS-19-06-907	PMH 1-2	Surface Collection	surface	Glass, Clear Curved	2
HIS-19-06-908	PMH 1-2	Surface Collection	surface	Secondary Flake	1
HIS-19-06-909	PMH 1-2	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-910	PMH 1-2	Surface Collection	surface	Shatter	1
HIS-19-06-911	PMH 1-2	Surface Collection	surface	Core	1
HIS-19-06-912	PMH 1-3	Surface Collection	surface	Secondary Flake	1
HIS-19-06-913	PMH 1-3	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-914	PMH 1-3	Surface Collection	surface	Flake Fragment	1
HIS-19-06-915	PMH 1-4	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-916	PMH 1-5	Surface Collection	surface	Secondary Flake	3
HIS-19-06-917	PMH 1-5	Surface Collection	surface	Tertiary Flake	2
HIS-19-06-918	PMH 1-5	Surface Collection	surface	Shatter	2
HIS-19-06-919	PMH 1-5	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-920	PMH 1-6	Surface Collection	surface	Core Fragment	1
HIS-19-06-921	PMH 1-7	Surface Collection	surface	Secondary Flake	3
HIS-19-06-922	PMH 1-7	Surface Collection	surface	Tertiary Flake	2
HIS-19-06-923	PMH 1-8	Surface Collection	surface	Secondary Flake	7
HIS-19-06-924	PMH 1-8	Surface Collection	surface	Tertiary Flake	12
HIS-19-06-925	PMH 1-8	Surface Collection	surface	Flake Fragment	2
HIS-19-06-926	PMH 1-8	Surface Collection	surface	Shatter	2
HIS-19-06-927	PMH 1-8	Surface Collection	surface	Core Fragment	1
HIS-19-06-928	PMH 1-8	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-929	PMH 1-9	Surface Collection	surface	Secondary Flake	2
HIS-19-06-930	PMH 1-9	Surface Collection	surface	Tertiary Flake	2
HIS-19-06-931	PMH 1-9	Surface Collection	surface	Shatter	3
HIS-19-06-932	PMH 1-9	Surface Collection	surface	Ground Stone Fragment	1
HIS-19-06-933	PMH 1-9	Surface Collection	surface	Biface Fragment, Secondary Stage	1
HIS-19-06-934	PMH 1-9	Surface Collection	surface	Biface Fragment, Tertiary Stage	4
HIS-19-06-935	PMH 1-10	Surface Collection	surface	PP/K, Side-Notched	1
HIS-19-06-936	PMH 1-11	Surface Collection	surface	Secondary Flake	2
HIS-19-06-937	PMH 1-11	Surface Collection	surface	Tertiary Flake	2
HIS-19-06-938	PMH 1-11	Surface Collection	surface	Flake Fragment	2

HIS-19-06-939	PMH 1-11	Surface Collection	surface	Shatter	2
HIS-19-06-940	PMH 1-11	Surface Collection	surface	Biface Fragment, Secondary Stage	1
HIS-19-06-941	PMH 1-11	Surface Collection	surface	PP/K	1
HIS-19-06-942	PMH 1-12	Surface Collection	surface	Ground Stone Fragment	1
HIS-19-06-943	PMH 1-13	Surface Collection	surface	Stoneware, Albany/Bristol Slip	1
HIS-19-06-944	PMH 1-13	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-945	PMH 1-13	Surface Collection	surface	WRE, Pressed/Molded	1
HIS-19-06-946	PMH 1-13	Surface Collection	surface	Misc. Metal, Nut	1
HIS-19-06-947	PMH 1-13	Surface Collection	surface	Brick, Unidentified	1
HIS-19-06-948	PMH 1-13	Surface Collection	surface	Glass, Clear Flat	1
HIS-19-06-949	PMH 1-13	Surface Collection	surface	Glass, Clear Curved	2
HIS-19-06-950	PMH 1-13	Surface Collection	surface	Glass, Aqua Curved	2
HIS-19-06-951	PMH 1-13	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-952	PMH 1-13	Surface Collection	surface	Glass, Solarized, Pressed/Molded	1
HIS-19-06-953	PMH 1-13	Surface Collection	surface	Milk Glass	1
HIS-19-06-954	PMH 1-13	Surface Collection	surface	Milk Glass, Jar Lid Liner	1
HIS-19-06-955	PMH 1-13	Surface Collection	surface	Secondary Flake	2
HIS-19-06-956	PMH 1-13	Surface Collection	surface	Tertiary Flake	2
HIS-19-06-957	PMH 1-13	Surface Collection	surface	Shatter	1
HIS-19-06-958	PMH 2-1	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-959	PMH 2-1	Surface Collection	surface	Biface Fragment, Tertiary Stage	2
HIS-19-06-960	PMH 2-2	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-961	PMH 2-2	Surface Collection	surface	Shatter	1
HIS-19-06-962	PMH 2-3	Surface Collection	surface	Secondary Flake	3
HIS-19-06-963	PMH 2-3	Surface Collection	surface	Tertiary Flake	5
HIS-19-06-964	PMKF 3-1	Surface Collection	surface	Stoneware, Alkaline Glaze	1
HIS-19-06-965	PMKF 3-1	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-966	PMKF 3-1	Surface Collection	surface	Shatter	1
HIS-19-06-967	PMKF 3-2	Surface Collection	surface	Flake Fragment	1
HIS-19-06-968	PMKF 3-3	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-969	PMKF 3-3	Surface Collection	surface	Primary Flake	1
HIS-19-06-970	PMR 3-1	Surface Collection	surface	PP/K, Hafted Scraper	1
HIS-19-06-971	PMR 3-2	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-972	PMR 3-2	Surface Collection	surface	Shatter	1
HIS-19-06-973	PMR 3-2	Surface Collection	surface	Core Fragment	1

HIS-19-06-974	PMR 3-3	Surface Collection	surface	Secondary Flake	4
HIS-19-06-975	PMR 3-3	Surface Collection	surface	Tertiary Flake	4
HIS-19-06-976	PMR 3-3	Surface Collection	surface	Shatter	3
HIS-19-06-977	PMR 3-3	Surface Collection	surface	Biface, Secondary Stage	1
HIS-19-06-978	PMR 3-3	Surface Collection	surface	Core	1
HIS-19-06-979	PMR 3-3	Surface Collection	surface	Flake Tool	3
HIS-19-06-980	PMR 3-4	Surface Collection	surface	Secondary Flake	2
HIS-19-06-981	PMR 3-4	Surface Collection	surface	Tertiary Flake	3
HIS-19-06-982	PMR 3-4	Surface Collection	surface	Flake Fragment	3
HIS-19-06-983	PMR 3-4	Surface Collection	surface	Shatter	2
HIS-19-06-984	PMR 3-4	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-985	PMR 3-4	Surface Collection	surface	Core Fragment	1
HIS-19-06-986	PMR 3-4	Surface Collection	surface	PP/K, Side-Notched	1
HIS-19-06-987	PMR 3-5	Surface Collection	surface	Secondary Flake	1
HIS-19-06-988	PMR 3-5	Surface Collection	surface	Tertiary Flake	4
HIS-19-06-989	PMR 3-5	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-990	PMR 3-6	Surface Collection	surface	Flake Fragment	1
HIS-19-06-991	PMR 3-6	Surface Collection	surface	Shatter	2
HIS-19-06-992	PMR 3-6	Surface Collection	surface	PP/K, Stemmed	1
HIS-19-06-993	PMR 3-7	Surface Collection	surface	Tertiary Flake	4
HIS-19-06-994	PMR 3-7	Surface Collection	surface	Flake Fragment	2
HIS-19-06-995	PMR 3-8	Surface Collection	surface	Secondary Flake	2
HIS-19-06-996	PMR 3-8	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-997	PMR 3-8	Surface Collection	surface	Flake Tool	2
HIS-19-06-998	PMRU 1-1	Surface Collection	surface	Stoneware, Handpainted	1
HIS-19-06-999	PMRU 1-1	Surface Collection	surface	Porcelain, Undecorated	1
HIS-19-06-1000	PMRU 1-1	Surface Collection	surface	Porcelain, Annular Decoration	1
HIS-19-06-1001	PMRU 1-1	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-1002	PMRU 1-1	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1003	PMRU 1-1	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-1004	PMRU 1-1	Surface Collection	surface	Glass, Amber Curved	1
HIS-19-06-1005	PMRU 1-1	Surface Collection	surface	Glass, Cobalt Blue Curved	1
HIS-19-06-1006	PMS 1-1	Surface Collection	surface	Stoneware, Bristol Slip	1
HIS-19-06-1007	PMS 1-1	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1008	PMS 1-1	Surface Collection	surface	Glass, Clear Flat	1

HIS-19-06-1009	PMS 1-1	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1010	PMS 1-1	Surface Collection	surface	Glass, Amber Curved	1
HIS-19-06-1011	PMS 1-1	Surface Collection	surface	Milk Glass	1
HIS-19-06-1012	PMS 1-2	Surface Collection	surface	Stoneware, Albany Slip	1
HIS-19-06-1013	PMS 1-2	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1014	PMS 1-2	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1015	PMS 1-3	Surface Collection	surface	Stoneware, Handpainted	1
HIS-19-06-1016	PMS 1-3	Surface Collection	surface	Porcelain, Undecorated	1
HIS-19-06-1017	PMS 1-3	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1018	PMS 1-3	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-1019	PMS 1-3	Surface Collection	surface	Milk Glass, Pressed/Molded	1
HIS-19-06-1020	PMS 1-4	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1021	PMS 1-4	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1022	PMS 1-5	Surface Collection	surface	Stoneware, Handpainted	1
HIS-19-06-1023	PMS 1-5	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-1024	PMS 1-5	Surface Collection	surface	Glass, Green Curved	1
HIS-19-06-1025	PMS 1-6	Surface Collection	surface	Porcelain, Decal Decorated	1
HIS-19-06-1026	PMS 1-7	Surface Collection	surface	Porcelain, Undecorated	1
HIS-19-06-1027	PMS 1-7	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1028	PMS 1-7	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-1029	PMS 1-8	Surface Collection	surface	Stoneware, Stamped	1
HIS-19-06-1030	PMS 1-8	Surface Collection	surface	Porcelain, Decal Decorated	1
HIS-19-06-1031	PMS 1-8	Surface Collection	surface	WRE, Decal Decorated	1
HIS-19-06-1032	PMS 2-1	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1033	PMS 2-1	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1034	PMS 2-1	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-1035	PMS 2-1	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-1036	PMS 2-2	Surface Collection	surface	Stoneware, Stamped	1
HIS-19-06-1037	PMS 2-2	Surface Collection	surface	WRE, Transferprint	1
HIS-19-06-1038	PMB 1-1	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1039	PMB 1-2	Surface Collection	surface	Stoneware, Bristol Slip	1
HIS-19-06-1040	PMB 1-2	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1041	PMB 1-3	Surface Collection	surface	Stoneware, Albany Slip	1
HIS-19-06-1042	PMB 1-3	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1043	PMB 1-4	Surface Collection	surface	Secondary Flake	1

HIS-19-06-1044	PMB 1-5	Surface Collection	surface	Stoneware, Bristol Slip	1
HIS-19-06-1045	PMB 1-5	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1046	PMB 1-6	Surface Collection	surface	Stoneware, Handpainted	1
HIS-19-06-1047	PMB 1-6	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1048	PMB 1-6	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-1049	PMP 5-1	Surface Collection	surface	Other, Ground Stone, Abrader	1
HIS-19-06-1050	PMP 5-2	Surface Collection	surface	Flake Tool	1
HIS-19-06-1051	PMP 5-2	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1052	PMP 5-3	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-1053	PMP 5-3	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1054	PMP 5-4	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-1055	PMP 5-4	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1056	PMP 5-5	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1057	PMP 5-6	Surface Collection	surface	Stoneware, Albany/Bristol Slip	1
HIS-19-06-1058	PMP 5-6	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1059	PMP 5-7	Surface Collection	surface	Stoneware, Albany/Bristol Slip	1
HIS-19-06-1060	PMP 5-7	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1061	PMP 5-7	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-1062	PMP 5-7	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-1063	PMP 5-8	Surface Collection	surface	Porcelain, Pressed/Molded	1
HIS-19-06-1064	PMP 5-8	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1065	PMP 5-8	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-1066	PMP 5-9	Surface Collection	surface	PP/K, Madison	1
HIS-19-06-1067	PMVS 1-1	Surface Collection	surface	Stoneware, Alkaline Glaze	1
HIS-19-06-1068	PMVS 1-1	Surface Collection	surface	Yellow Ware, Undecorated	1
HIS-19-06-1069	PMVS 1-1	Surface Collection	surface	WRE, Sponge Decorated	1
HIS-19-06-1070	PMVS 1-1	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1071	PMVS 1-1	Surface Collection	surface	WRE, Decal Decorated	1
HIS-19-06-1072	PMVS 1-1	Surface Collection	surface	Secondary Flake	1
HIS-19-06-1073	PMVS 1-1	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-1074	PMVS 1-2	Surface Collection	surface	Stoneware, Albany Slip	1
HIS-19-06-1075	PMVS 1-2	Surface Collection	surface	Yellow Ware, Mocha Decoration	1
HIS-19-06-1076	PMVS 1-3	Surface Collection	surface	Stoneware, Bristol Slip	1
HIS-19-06-1077	PMVS 1-3	Surface Collection	surface	Glass, Green Curved	1
HIS-19-06-1078	PMVS 1-3	Surface Collection	surface	Milk Glass	1

HIS-19-06-1079	PMVS 1-4	Surface Collection	surface	Creamware, Handpainted	1
HIS-19-06-1080	PMVS 1-4	Surface Collection	surface	Porcelain, Decal Decorated	1
HIS-19-06-1081	PMVS 1-4	Surface Collection	surface	WRE, Handpainted	1
HIS-19-06-1082	PMVS 1-4	Surface Collection	surface	Glass, Clear Curved	2
HIS-19-06-1083	PMVS 1-4	Surface Collection	surface	Secondary Flake	1
HIS-19-06-1084	PMVS 2-1	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-1085	PMVS 2-2	Surface Collection	surface	Stoneware, Bristol Slip	1
HIS-19-06-1086	PMVS 2-2	Surface Collection	surface	WRE, Handpainted	1
HIS-19-06-1087	PMVS 2-2	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1088	PMVS 2-3	Surface Collection	surface	Stoneware, Albany/Bristol Slip	1
HIS-19-06-1089	PMVS 2-3	Surface Collection	surface	Porcelain, Decal Decorated	1
HIS-19-06-1090	PMVS 2-3	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1091	PMVS 2-3	Surface Collection	surface	Glass, Amber Curved	1
HIS-19-06-1092	PMVS 2-4	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1093	PMVS 2-4	Surface Collection	surface	Milk Glass	1
HIS-19-06-1094	PMGH 1-2	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1095	PMGH 1-3	Surface Collection	surface	Secondary Flake	1
HIS-19-06-1096	PMGH 1-3	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-1097	PMGH 1-4	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1098	PMGH 1-4	Surface Collection	surface	Glass, Aqua Curved	1
HIS-19-06-1099	PMGH 1-4	Surface Collection	surface	Tertiary Flake	2
HIS-19-06-1100	PMGH 1-4	Surface Collection	surface	Biface Fragment, Secondary Stage	1
HIS-19-06-1101	PMGH 1-5	Surface Collection	surface	Stoneware, Albany Slip	1
HIS-19-06-1102	PMGH 1-5	Surface Collection	surface	WRE, Decal Decorated	1
HIS-19-06-1103	PMGH 1-5	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-1104	PMGH 1-5	Surface Collection	surface	Milk Glass	1
HIS-19-06-1105	PMGH 1-6	Surface Collection	surface	WRE, Handpainted	1
HIS-19-06-1106	PMGH 1-6	Surface Collection	surface	Glass, Green Curved	1
HIS-19-06-1107	PMGH 1-6	Surface Collection	surface	Glass, Cobalt Blue Curved	1
HIS-19-06-1108	PMGH 1-7	Surface Collection	surface	Creamware, Sponge Decoration	1
HIS-19-06-1109	PMGH 1-7	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1110	PMGH 1-8	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1111	PMGH 1-9	Surface Collection	surface	Stoneware, Albany Slip	1
HIS-19-06-1112	PMGH 1-9	Surface Collection	surface	Yellow Ware, Undecorated	1
HIS-19-06-1113	PMGH 1-9	Surface Collection	surface	WRE, Undecorated	1

HIS-19-06-1114	PMW 3-1	Surface Collection	surface	Coin, Indian Head Penny	1
HIS-19-06-1115	PMW 3-2	Surface Collection	surface	Other, Ground Stone Fragment	1
HIS-19-06-1116	PMW 3-3	Surface Collection	surface	PP/K, Stemmed	1
HIS-19-06-1117	PMW 3-4	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-1118	PMW 3-5	Surface Collection	surface	Tertiary Flake	3
HIS-19-06-1119	PMW 3-6	Surface Collection	surface	Tertiary Flake	1
HIS-19-06-1120	PMW 3-7	Surface Collection	surface	Secondary Flake	2
HIS-19-06-1121	PMW 3-7	Surface Collection	surface	Tertiary Flake	9
HIS-19-06-1122	PMW 3-7	Surface Collection	surface	Flake Fragment	1
HIS-19-06-1123	PMW 3-7	Surface Collection	surface	Core	1
HIS-19-06-1124	PMW 3-8	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1125	PMW 3-9	Surface Collection	surface	WRE, Undecorated	2
HIS-19-06-1126	PMW 3-9	Surface Collection	surface	Glass, Solarized Curved	2
HIS-19-06-1127	PMW 3-9	Surface Collection	surface	Glass, Green Curved	1
HIS-19-06-1128	PMW 3-9	Surface Collection	surface	Shatter	1
HIS-19-06-1129	PMW 3-10	Surface Collection	surface	Biface Fragment, Tertiary Stage	2
HIS-19-06-1130	PMW 3-11	Surface Collection	surface	Biface Fragment, Tertiary Stage	1
HIS-19-06-1131	PMW 3-11	Surface Collection	surface	PP/K, Hamilton	1
HIS-19-06-1132	PMW 3-12	Surface Collection	surface	Stoneware, Undecorated	1
HIS-19-06-1133	PMW 3-12	Surface Collection	surface	Tertiary Flake	2
HIS-19-06-1134	PMW 3-12	Surface Collection	surface	Shatter	1
HIS-19-06-1135	PMW 3-12	Surface Collection	surface	Other, Ground Stone Fragment	1
HIS-19-06-1136	PMW 3-13	Surface Collection	surface	Stoneware, Albany Slip	1
HIS-19-06-1137	PMW 3-14	Surface Collection	surface	Stoneware, Salt Glazed	1
HIS-19-06-1138	PMW 3-14	Surface Collection	surface	WRE, Undecorated	1
HIS-19-06-1139	PMW 3-14	Surface Collection	surface	Glass, Clear Curved	1
HIS-19-06-1140	PMW 3-14	Surface Collection	surface	Glass, Solarized Curved	1
HIS-19-06-1141	PMW 3-15	Surface Collection	surface	Glass, Aqua Curved	1
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in

Case No(s). 20-1321-EL-BGA

Summary: Application for Amendment - Part 11 of 12 (Exhibit G - K) electronically filed by Christine M.T. Pirik on behalf of Hardin Solar Energy II LLC