WETLAND DELINEATION

WABASH INDUSTRIAL PARK Ringel Avenue Wabash, Indiana Project No.: 16IN0383

PREPARED FOR:

BANNING ENGINEERING, P.C. Plainfield, Indiana

PREPARED BY:

Alt & Witzig Consulting Services Carmel, Indiana

July 29, 2016



Alt & Witzig Consulting Services

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July 29, 2016

Banning Engineering, P.C. 853 Columbia Road Suite 101 Plainfield, Indiana 46168 Attn: Mr. Kevin Steely

> RE: Wetland Delineation Wabash Industrial Park Ringel Avenue Wabash, Indiana Alt & Witzig Project No.:16IN0383

Dear Mr. Steely:

In compliance with your request, we have completed a Wetland Delineation at the above referenced Site. The purpose of our investigation was to identify jurisdictional areas associated with the Site by evaluation of potential wetland areas or other "Waters of the United States".

If you have questions or comments regarding our findings, please do not hesitate to contact us. Thank you for the opportunity to offer our services.

Sincerely, ALT & WITZIG CONSULTING SERVICES

Clayt Him

Clayton Heavin Project Manager Environmental Division

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John C. Flannelly Senior Project Manager Environmental Division

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INTRODUCTION

This report presents the results of a wetland reconnaissance performed on an approximately 135-acre tract of predominately unimproved land with a wooded tract located along Ringel Avenue northwest of the interchange between State Road 14 and US Highway 24 in Wabash, Indiana (Site). The Site was observed to consist of multiple unimproved parcels located within the existing Wabash Industrial Park and contained a section of Charley Creek transecting the central portion of the Site from north to south. Two (2) retention ponds were observed to be located on the western portion of the Site.

The purpose of our investigation was to determine if portions of the Site are regulated under Sections 401 and/or 404 of the Clean Water Act. Sections 401 and 404 were established to control activities in "State Regulated Wetlands" and regulated "Waters of the United States." An Alt & Witzig Consulting Services (Alt & Witzig) Wetlands Scientist performed a Site reconnaissance on July 20, 2016.

Soil and vegetation samples collected on the Site during the investigation were inspected to determine whether wetland soils or hydrophytic vegetation were present. Wetland hydrological indicators were also investigated.

This investigation was performed for Banning Engineering, P.C. Authorization to perform this assessment was in the form of a written agreement between Mr. Jeff Henson of Banning Engineering, P.C. and Alt & Witzig.

LIMITATION OF LIABILITY

This report has been prepared in accordance with an agreement between Banning Engineering, P.C. and Alt & Witzig.

The services performed by Alt & Witzig have been conducted in a manner consistent with the level of quality and skill generally exercised by members of its profession and consulting practices.

This report is solely for the use of Banning Engineering, P.C. Any reliance of this report by third parties shall be at such party's sole risk as this report may not contain sufficient information for purposes of other parties or for other uses. This report shall only be presented in full and may not be used to support any other objectives than those set out in the report, except where written approval and consent are provided by Banning Engineering, P.C. and Alt & Witzig.

REGULATION DEFINITION

Definition of "Waters of the U.S."

"Waters of the U.S." is a broad term that includes intrastate lakes, rivers, perennial and intermittent streams, mudflats, sandflats, wetlands, sloughs, wet meadows and natural ponds, which could affect interstate or foreign commerce. The U.S. Army Corps of Engineers (USACE) has jurisdiction over any "Waters of the U.S." under the Clean Water Act.

Definition of "State Regulated Wetlands" and "Isolated Wetland"

According to Indiana state regulatory changes, the definition of a "State Regulated Wetland" is described as an isolated wetland located in Indiana that is not an exempt isolated wetland. Isolated wetlands consist of wetlands that are not subject to regulation under section 404(a) of the Clean Water Act, regulated by USACE. Exempt isolated wetlands are generally wetlands that are voluntarily created, exists as an incidental feature, is a fringe wetland associated with a private pond, is associated with a manmade body of surface water, is a Class I isolated wetland with a delineation of 0.5-acre or less, is a Class II isolated wetland with a delineation of 0.25-acre or less, or is constructed for reduction or control of pollution.

Definition of Wetlands

The following definition of a wetland is taken from the U.S. Army Corps of Engineers Wetland Delineation Manual (USACE, 1987).

Wetlands are "...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Listed below are the three criteria used to classify wetlands. All three wetland criteria must be present for an area to be classified as a regulated wetland under normal circumstances.

- 1. The site must have hydric soil. A hydric soil is defined as a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the near surface zone.
- 2. The area must have a predominance of hydrophytic or wetland vegetation (*e.g.*, sedges, cattails, reed-canary grass, water tolerant trees) or be capable of supporting this vegetation.
- 3. The site must have evidence of wetland hydrology. Wetland hydrology is defined as periodic inundation or saturation of soils to the surface at some time during the growing season. Drainage patterns, drift lines, and watermarks are examples of hydrological indicators used if soils are not saturated or inundated at the time of inspection.

It should also be noted that the Corps distributed the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Document ERDC/EL TR-10-16* (USACE, 2010). This document is one of a series of Regional Supplements to the USACE Delineation Manual. The development of the Regional Supplements is part of a nationwide effort to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineating procedures. All wetland delineations submitted to the USACE after November 30, 2008 must follow the procedures listed within the supplement that includes the geographic region in which the subject property is located.

Regulation of Wetlands

Wetlands are regulated "Waters" under Section 404 of the Clean Water Act. Section 404, administered by the USACE, requires permits for discharges of dredged or fill material into regulated "Waters." Regulated "Waters" subject to jurisdiction by the USACE includes navigable "Waters of the United States" and wetland areas determined by the USACE as possessing a significant nexus to a regulated "Waters". A Supreme Court case in 2001 determined that the USACE does not have jurisdiction over isolated wetlands under the Section 404 Clean Water Act.

The Indiana Department of Environmental Management (IDEM) also regulates any activities in wetlands or other "waters" (e.g. streams, ponds, and lakes) under Section 401, Water Quality Certification (WQC). Regulatory laws have further identified IDEM as having regulatory jurisdiction over isolated wetlands.

DESCRIPTION OF SITE

Site Location

The Site is located approximately two and three quarter (2.75) miles north-northeast of downtown Wabash in Wabash County, Indiana. The Site is further located on the USGS 7.5-Minute Series Topographic map of Wabash, Indiana (see Figure 1, Appendix A) in the northern half of Section 36, Township 28 North, Range 6 East. Coordinates for the approximate center of the Site are 40.50083 North Latitude and -85.48113 West Longitude.

General Site Description

The Site consists of approximately 135-acres of predominately unimproved land with a wooded tract containing a section of Charley Creek located within the existing Wabash Industrial Park. Two (2) retention ponds were observed to be located on the western portion of the Site. A total of five (5) drainage features were observed to be located throughout the Site. State Road 13, residential and commercial properties adjoin the Site to the east. Agricultural and residential properties adjoin the Site to the north. North County Road 100 West, residential and agricultural land adjoin the Site to the west. Commercial properties, West County Road 50 North and unimproved land adjoin the Site to the south.

Based on the review of historical aerial photographs, it appears the Site has consisted of predominately unimproved land from at least 1941 through the present.

WETLAND DELINEATION

Methodology

Prior to mobilizing to the Site, aerial photographs of the Site, obtained from the Indiana Historical Aerial Photograph Index (IHAPI) and Google Earth©, were reviewed. The Wabash, Indiana USGS 7.5-Minute Series Topographic map (USGS, 1963 [Revised 1981]) was also reviewed. A United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) map and a United States Department of Agriculture (USDA) Soil Conservation Service (SCS) soil survey for the Site were also reviewed. One (1) small freshwater emergent wetland was depicted on the western portion of the Site. In addition, the NWI map identified the section of Charley Creek that transects the Site. The soil survey indicated the presence of hydric soils. An initial reconnaissance was performed at the Site in order to determine sampling points. Sample points were selected based on the potential for that area to be identified as a wetland. Areas that were not sampled were located on upland terraces, exhibited a dominance of upland plant species and/or a lack of hydrology indicators. A total of ten (10) sampling points were established at the Site in order to obtain a representative sample of the vegetation, soils and hydrology (Appendix A, Figure 2).

Wetland determination activities were performed in accordance with the U.S. Army Corps of Engineers Wetland Delineation Manual (USACE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0 (USACE, 2010). At each sampling point, vegetation was identified, a soil test pit was excavated to determine if hydric soils were present, and visual observations were made to determine if hydrology indicators were present. For vegetation, each sampling point consisted of a 30-foot radius for the tree and woody vine stratum; a 15-foot radius for the sapling and shrub stratum; and a five foot radius for the herbaceous plants stratum. The following is a summary of the data that was collected from the sampling points. Copies of the Wetland Determination Data Forms – Midwest Region are provided in Appendix B.

Vegetation

The dominant vegetation within a wetland must have greater than 50 percent hydrophytic species by evaluation with the 50/20 rule. In addition, if hydric soils and wetland hydrology are observed on the Site, but the vegetation does not pass the dominance test by use of the 50/20 rule, then a prevalence index value greater than three must be shown to indicate the lack of dominance of wetland vegetation. If the vegetation does not meet the prevalence index requirements indicating a dominance of hydric vegetation, then morphological adaptations (adventitious roots, multi-stemmed trunks, shallow root systems, tree buttressing, etc.) must be noted to indicate if the upland vegetation on the Site are functioning as hydrophytes. The dominance of plants classified as Obligate Wetland (OBL), Facultative Wetland (FACW) and/or Facultative (FAC) are necessary to meet the wetland vegetation criteria. The indicator status of a plant species is expressed in terms of the estimated probabilities of a species occurring in a wetland within this region. The indicator categories as defined by the USACE Midwest Regional Supplement are as follows:

Obligate Wetland (OBL): Occur almost always (> 99%) under natural conditions in wetlands.

<u>Facultative Wetland (FACW)</u>: Usually occur in wetlands (67%-99%), but occasionally found in non-wetlands.

Facultative (FAC): Equally likely to occur in wetlands or non-wetlands (34%-66%).

Facultative Upland (FACU): Usually occur in non-wetlands, but occasionally found in wetlands (1%-33%).

Obligate Upland (UPL): Occur almost always (>99%) in uplands

Plants that are OBL, FACW and FAC are considered to be wetland species. The type of soil and the duration of standing water and/or saturated soil determine the plant species composition of an area.

The Site was investigated for the presence and dominance of hydrophytic vegetation. Vegetation was identified and recorded on the data forms. Vegetation identities were confirmed using references entitled *Wetland Plants of Indiana* (Chadde, 2011) and *Peterson Field Guides*® *Eastern Trees* (Petrides/Wehr, 1988). Identified vegetation was then compared to the *Midwest 2014 Regional Wetland Plant List* (USACE, 2014) and assigned the appropriate classification (i.e., FAC, FACW). Table 1 summarizes dominant vegetation identified at each sampling point.

		TABLE 1 – VEGETATION
Sample Area	Dominance of Hydrophytic Vegetation	Vegetation (Classification)
S-1	N	Festuca spp. (FACU/UPL)
S-2	Ν	Wheat Crop (No Classification)
S-3	Ν	Festuca spp. (FACU/UPL)
S-4	Ν	Soybean Crop (No Classification)
S-5	Y	Ulmus rubra (FAC), Celtis occidentalis (FAC), Juglans nigra (FACU), Lonicera morrowii (FACU), Pilea pumila (FACW), Carex lupulina (OBL), Festuca spp. (FACU/UPL), Parthenocissus quinquefolia (FACU)
S-6	Y	Acer rubrum (FAC), Fraxinus pennsylvanica (FACW), Celtis occidentalis (FAC), Setaria pumila (FAC), Carex lupulina (OBL), Vitis vulpina (FACW)
S-7	N	Ulmus rubra (FAC), Acer saccharum (FACU), Celtis occidentalis (FAC), Juglans nigra (FACU), Lonicera morrowii (FACU), Rubus armeniacus (UPL), Parthenocissus quinquefolia (FACU)
S-8	N	Juglans nigra (FACU), Lonicera morrowii (FACU), Galium triflorum (FACU), Festuca spp. (FACU/UPL), Parthenocissus quinquefolia (FACU)
S-9	Ν	Populus deltoides (FAC), Salix nigra (OBL), Juglans nigra (FACU), Andropogon virginicus (FACU)
S-10	Ν	Carya ovata (FACU), Prunus serotina (FACU), Juglans nigra (FACU), Lonicera morrowii (FACU), Rubus armeniacus (UPL), Gallium triflorum (FACU), Parthenocissus quinquefolia (FACU)
	or more wetland a han 50% wetland	•

A dominance of wetland/hydrophytic vegetation was observed at sample points S-5 and S-6. Hydrophytic vegetation appears to be limited to the small wooded tract located on the north central portion of the Site, which is adjacent to Charley Creek. The majority of the Site consists of unimproved land and was observed to be covered with grass and agricultural crops.

<u>Hydrology</u>

Wetland hydrology consists of water that is on or near the surface of the soil for a significant period of time during the growing season. Evidence of hydrology indicators can be observed beyond the growing season, or during times in the growing season that actual hydrology is not present. Many factors

determine wetland hydrology such as topography, soil type, depth of the water table, and drainage. A summary of the hydrological indicators observed at the sampling points is summarized in Table 2.

Sample Area	TABLE 2 – HY Wetland Hydrology	Hydrological Indicators Field (Observations)
S-1	N	None Observed
S-2	N	None Observed
S-3	N	None Observed
S-4	N	None Observed
S-5	N	None Observed
S-6	Y	Saturation (A3)
S-7	N	None Observed
S-8	N	None Observed
S-9	N	None Observed
S-10	Y	None Observed
= Hydrology indi	ators indicate wetland hydrology cators are not present or sufficient fo ndary hydrology indicators	or wetland hydrology

The Site was investigated for the presence of wetland hydrology and/or hydrological indicators noted in the USACE Midwest Regional Supplement. Wetland hydrology was observed at sample point S-6. This sample point was located on the north central portion of the Site within the small wooded tract. Wetland hydrology was not observed at the remaining sample points.

<u>Soils</u>

Hydric soils, as defined by USDA, are soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions. Indications of hydric soils can be documented in the field any time of the year. A hydric soil is different from a non-hydric soil due to the anaerobic conditions, which change the soil color, mottling, structure and chemistry. Soils must be hydric for an area to be considered a wetland.

A custom soil report for the Site was generated using the USDA web soil survey (Appendix C). Based on the report, it appears ten (10) soil associations are present on the Site (Appendix A, Figure 3). All ten of the soil associations at the Site are classified as hydric. It should be noted however, that soil surveys act as a guide to the general types of soil in an area and field observations take precedent.

In order to determine if hydric soils were present, a soil test pit was excavated to approximately 20-inches below ground surface (bgs) at each sampling point. Soil horizons were observed and soil colors were determined using the *Munsell Soil Color Chart* (Munsell, 2000). Soil colors observed included the matrix and any mottling, if present. In addition, texture, redox features (if present) and any other characteristics were observed. These data were recorded on the data forms (Appendix B). The USACE Midwest Regional Supplement has included numerous additional soil indicators to aid in identifying hydric soils and this was referenced during data collection. In addition, the USDA Natural Resource Conservation Service (NRCS) *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and*

Delineating Hydric Soils, version 7.0, 2010 was referenced. A description of the soils is provided in Table 3.

mpling Point	Hydric Soils	Depth (inches)	Soil Color	Soil Texture
S-1	No	0 - 20	10YR 4/3	Silty clay loam
	Hydric Indica	ators: None Obser	rved	
S-2	Yes	0 - 20	Matrix 10YR 4/3 95%; Mottling 10YR 5/8 5%	Silty clay loam
	Hydric Indica	ators: Depleted M	latrix	
S-3	No	0 - 20	10YR 4/3	Silty clay loam
	Hydric Indica	ators: None Obser	rved	1
S-4	Yes	0 - 20	Matrix 10YR 4/3 90%; Mottling 10YR 5/8 10%	Silty clay loam
	Hydric Indica	ators: Depleted Ma	atrix	1
S-5	No	0 - 20	10YR 4/3	Silty clay loam
	Hydric Indica	ators: None Obser	ved	
S-6	Yes	0 - 20	Matrix 10YR 5/1 75%; Mottling 7.5YR 5/6 25%	Silty clay loam
	Hydric Indica	ators: Depleted Ma	atrix	1
S-7	No	0 - 20	10YR 4/3	Silty clay loam
	Hydric Indica	ators: None Obser	ved	
S-8	No	0 - 20	10YR 4/3	Silty clay loam
	Hydric Indica	ators: None Obser	ved	
S-9	Yes	0 - 20	Matrix 10YR 5/1 85%; Mottling 7.5YR 5/6 15%	Silty clay loam
	Hydric Indica	ators: Depleted Ma	atrix	
S-10	No	0 - 20	10YR 4/3	Silty clay loam
	Hydric Indica	ators: None Obser	ved	

Hydric soil indicators were observed at sampling points S-2, S-4, S-6 and S-9. The remaining sample point locations did not demonstrate hydric soil indicators. The Site soils consisted of relatively homogenous textures including silty clay loams.

National Wetland Inventory Map

An NWI map was reviewed for the Site (Figure 4, Appendix A), and one (1) small freshwater emergent wetland was identified on the western portion of the Site. In addition, the NWI map identified the section of Charley Creek that transects the Site. It should be noted the NWI map does not preclude the results of a wetland assessment.

Identified "Waters of the U.S."

Vegetation and soil data were collected at ten (10) sampling points. In addition, visual observations were made to determine the presence of hydrology indicators. One (1) wetland area (Wetland A), three (3) open water features (Charley Creek, Retention Pond #1 and Retention Pond #2), and five (5) drainage features [(Drainage Features 1-5)(Figure 5, Appendix A)] were identified during the course of the investigation and are described below in the Conclusions and Recommendations Section.

CONCLUSIONS AND RECOMMENDATIONS

This report presents the results of a Wetland Delineation performed on an approximately 135-acre tract of predominately unimproved land located within the existing Wabash Industrial Park in Wabash, Indiana. The reconnaissance was performed to determine if potential "Waters of the U.S." and/or "State Regulated Wetlands" exist on the Site. Photographs taken during this assessment are provided in Appendix D.

Based on this reconnaissance, it appears there are one (1) wetland area (Wetlands A), a section of Charley Creek, two (2) retention ponds and five (5) drainage features located on the Site (see Figure 5, Appendix A).

Wetland A is located on the north central portion of the Site, situated immediately west of Charley Creek within the small wooded tract. Wetland A consists of approximately 0.75-acres and appears to have formed as drainage originating from the adjoining upland areas to the north and west flow toward Charley Creek and consistently saturate this portion of the Site. Observations made during the Site reconnaissance indicated that it is likely drainage from Wetland A would flow in an easterly direction into Charley Creek. Based on its proximity to Charley Creek, Wetland A appears to possess a significant nexus to a regulated "Waters", and is anticipated to be regulated by the USACE as a "Waters of the U.S".

Charley Creek appears to originate approximately 0.8-miles northeast of the Site and flows in a southerly direction, transecting the western portion of the Site for approximately 2,725-feet, before flowing off-Site to the south. Charley Creek continues to flow in a southerly direction and eventually converges with the Wabash River. The section of Charley Creek located on the Site demonstrated an Ordinary High Water Mark (OHWM), a defined bed and bank and a significant nexus to a Traditional Navigable Water (TNW); therefore, the section of Charley Creek located on the Site is anticipated to be regulated by the USACE as a "Waters of the U.S.".

Retention Pond #1 is located on the western portion of the Site situated between the section of Charley Creek and an unimproved tract. Retention Pond #1 consists of approximately 2-acres and was observed to not contain fringe wetlands. Retention Pond #1 did not demonstrate a significant nexus to a TNW; therefore, Retention Pond #1 is not anticipated to be regulated by the USACE as a "Waters of the U.S.". In addition, the Indiana Department of Environmental Management (IDEM) typically classifies retention ponds as exempt water features.

Retention Pond #2 is located on the southwest portion of the Site situated between a gravel access road and an unimproved tract. Retention Pond #2 consists of approximately 1.75-acres and was observed to not contain fringe wetlands. Retention Pond #2 did not demonstrate a significant nexus to a TNW; therefore, Retention Pond #2 is not anticipated to be regulated by the USACE as a "Waters of the U.S.". In addition, the IDEM typically classifies retention ponds as exempt water features.

Drainage Feature #1 is located on the northeast portion of the Site, situated immediately east of a gravel access road within a tract of unimproved land. Drainage Feature #1 appeared to originate from a culvert located beneath Ringel Avenue and extended north for approximately 900-feet eventually converging with a dry retention area. Water was not observed to be flowing in Drainage Feature #1 at the time of the Site reconnaissance. Drainage Feature #1 did not demonstrate an OHWM, a defined bed and bank or a significant nexus to a TNW; therefore, Drainage Feature #1 is not anticipated to be regulated by the USACE as a "Waters of the U.S.".

Drainage Feature #2 is located on the central portion of the Site, situated immediately north of a gravel access road within a tract of unimproved land. Drainage Feature #2 appeared to originate from a culvert located beneath the west end of Ringel Avenue and extended west for approximately 560-feet eventually converging with Retention Pond #1. Water was not observed to be flowing in Drainage Feature #2 at the time of the Site reconnaissance. Drainage Feature #2 did not demonstrate an OHWM, a defined bed and bank or a significant nexus to a TNW; therefore, Drainage Feature #2 is not anticipated to be regulated by the USACE as a "Waters of the U.S.".

Drainage Feature #3 is located on the central portion of the Site, situated between two parcels of unimproved land. Drainage Feature #3 appeared to originate from an agricultural tract (wheat field) and extended west for approximately 1,130-feet eventually converging with Retention Pond #2. Water was not observed to be flowing in Drainage Feature #3 at the time of the Site reconnaissance. Drainage Feature #3 did not demonstrate an OHWM, a defined bed and bank or a significant nexus to a TNW; therefore, Drainage Feature #3 is not anticipated to be regulated by the USACE as a "Waters of the U.S.".

Drainage Feature #4 is located on the southwest portion of the Site, situated between two parcels of unimproved land. Drainage Feature #4 appeared to originate from a south adjoining commercial property and extended west for approximately 400-feet eventually converging with Retention Pond #2. Water was not observed to be flowing in Drainage Feature #4 at the time of the Site reconnaissance. Drainage Feature #4 did not demonstrate an OHWM, a defined bed and bank or a significant nexus to a TNW; therefore, Drainage Feature #4 is not anticipated to be regulated by the USACE as a "Waters of the U.S.".

Drainage Feature #5 is located on the southwest portion of the Site, situated immediately east of a gravel access road. Drainage Feature #5 appeared to originate from a culvert beneath West County Road 50 North and extended northeast for approximately 350-feet eventually converging with Retention Pond #2. Water was not observed to be flowing in Drainage Feature #5 at the time of the Site reconnaissance. Drainage Feature #5 did not demonstrate an OHWM, a defined bed and bank or a significant nexus to a TNW; therefore, Drainage Feature #5 is not anticipated to be regulated by the USACE as a "Waters of the U.S.".

A Regional General Permit and Water Quality Certification will likely be required for impacts to the Wetland A and Charley Creek. Impacts to "Waters of the U.S." which total less than 0.1-acre do not require mitigation. If impacts are anticipated to be 1.0-acre or greater, or exceed 1,500-linear feet of stream, then an Individual Permit may be necessary. Mitigation for impacts is required at a 1:1 ratio for drainage features and open water; 4:1 for forested wetlands; 3:1 for scrub/shrub wetlands; and 2:1 for emergent wetlands if verified as a USACE jurisdictional "Waters of the U.S."

Charley Creek may drain more than one square mile; therefore, coordination with Indiana Department of Natural Resources (IDNR) for a Construction-in-a-Floodway may be required.

Prior to any permitting activities, a jurisdictional determination (JD) would be required to be performed by USACE to ensure they concur with our findings.

REFERENCES

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United States Fish and Wildlife Service. 2016. National Wetlands Inventory Mapper.

United States Geological Survey (USGS). 1963 (Revised 1981). Wabash, Indiana, 7.5-minute topographic series.

APPENDIX A

Figures

FIGURE 1: SITE LOCATION MAP

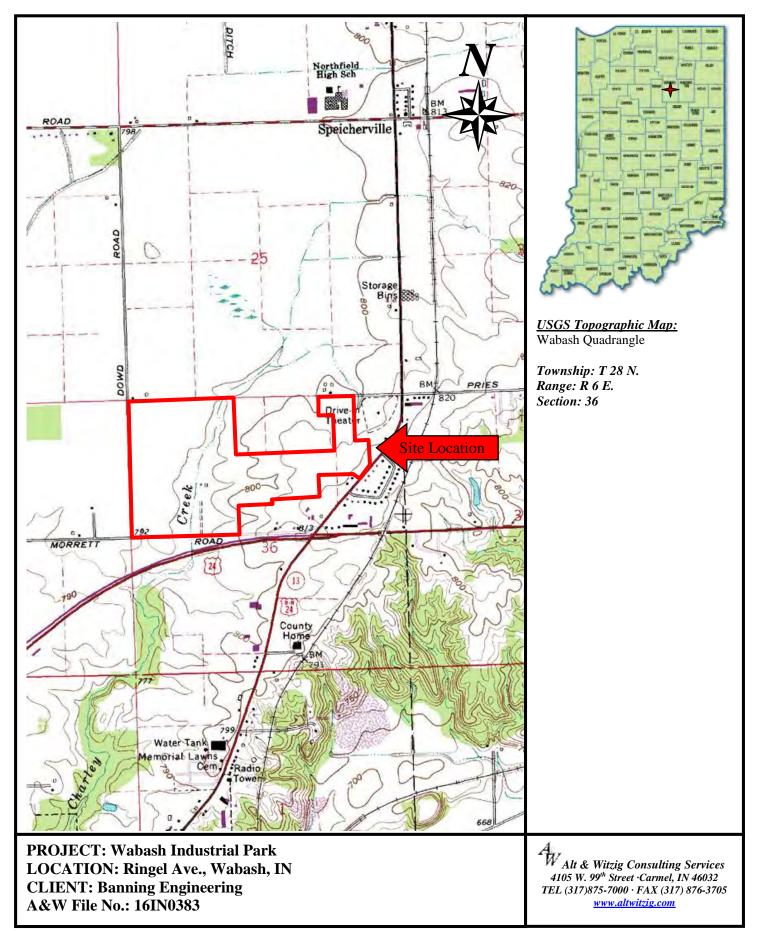


FIGURE 2: SAMPLE LOCATION MAP

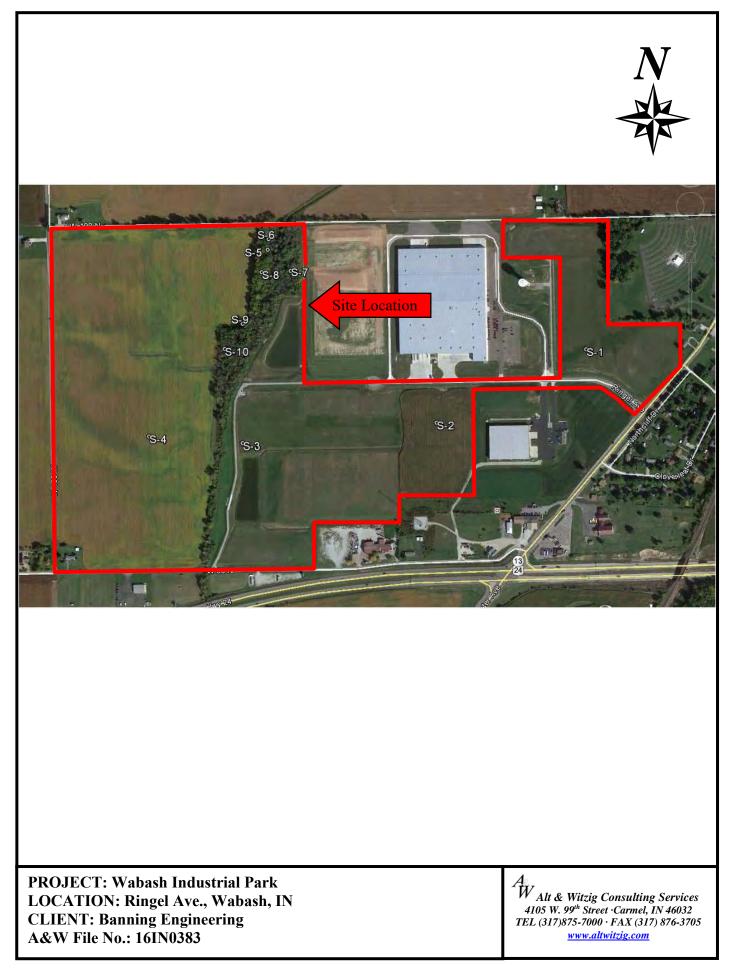


FIGURE 3: SOIL MAP

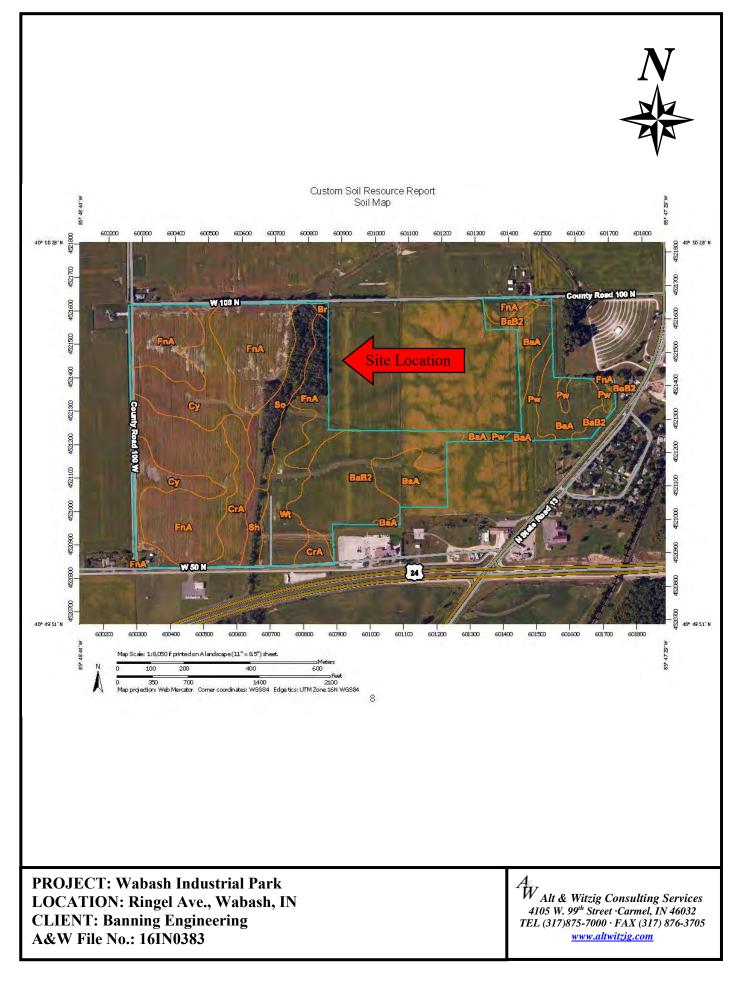


FIGURE 4: NATIONAL WETLANDS INVENTORY MAP

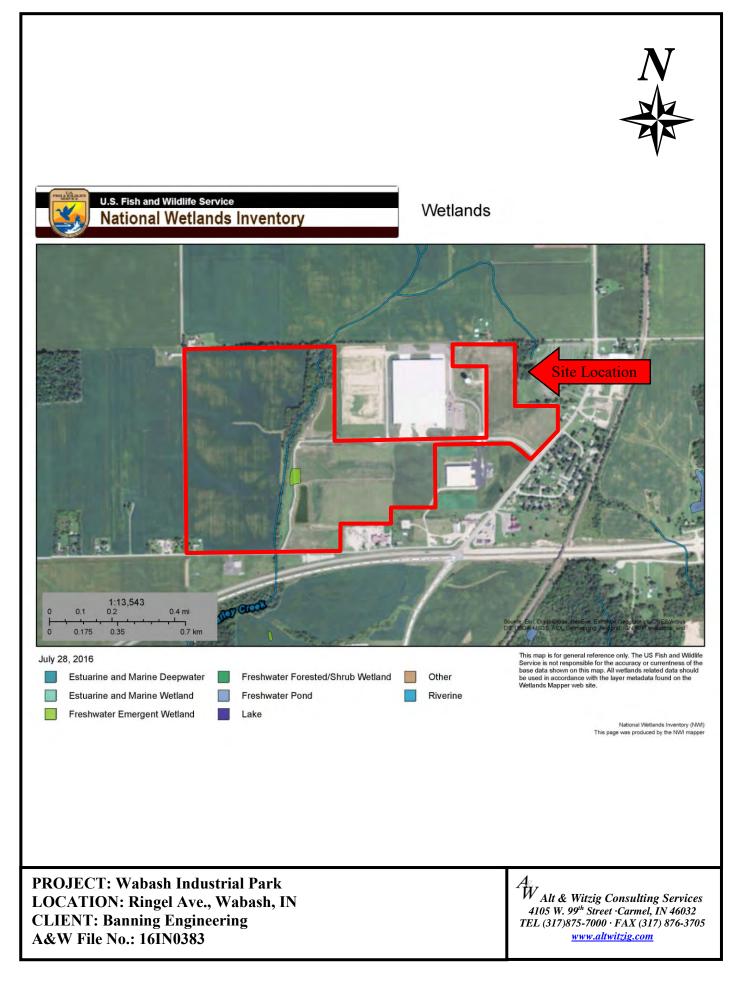


FIGURE 5: WETLAND MAP



FIGURE 6: 1941 AERIAL



FIGURE 7: 1957 AERIAL



FIGURE 8: 1964 AERIAL

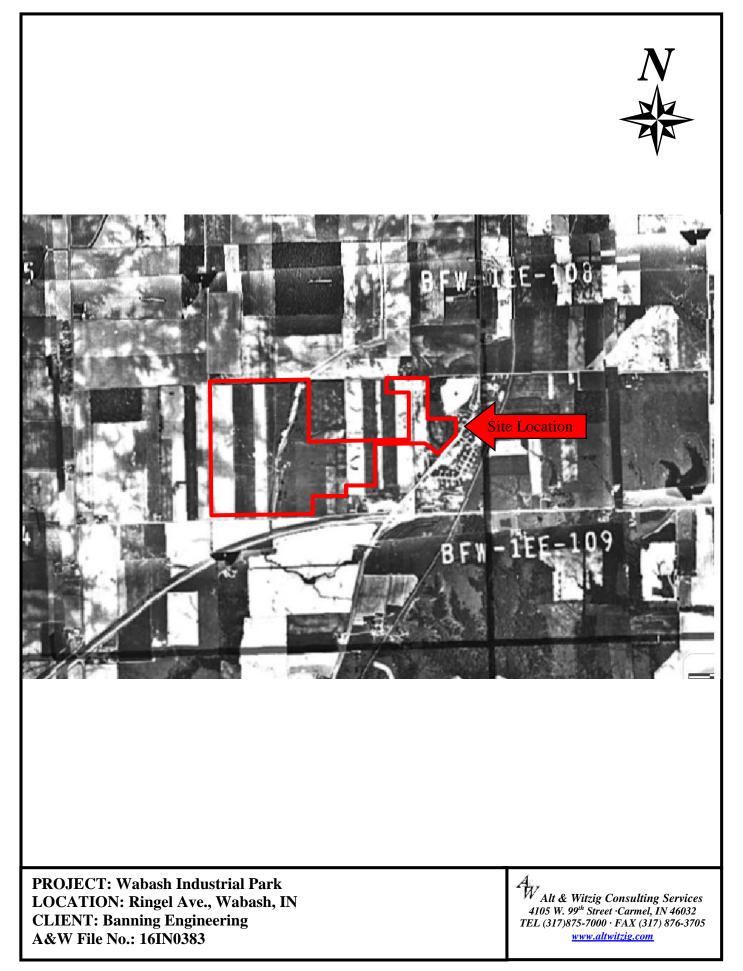


FIGURE 9: 1972 AERIAL



FIGURE 10: 1998 AERIAL

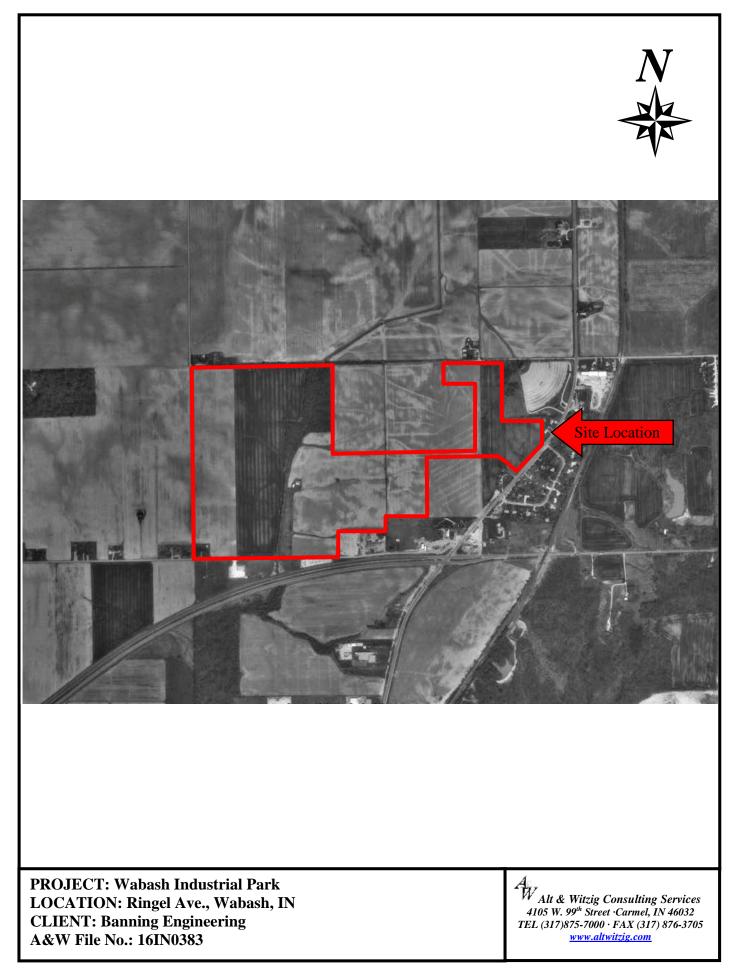


FIGURE 11: 2005 AERIAL

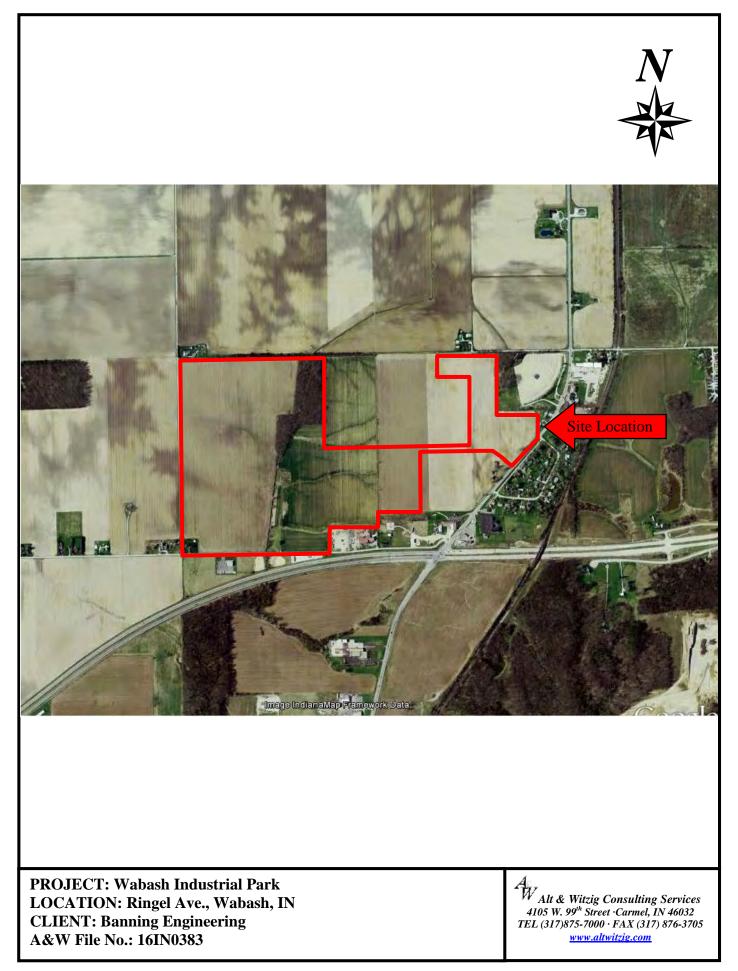


FIGURE 12: 2014 AERIAL



APPENDIX B

Wetland Determination Data Forms - Midwest Region

Reset Form Print Form

WETLAND DETERMINATION DATA FORM - Midwest Region

roject/Site: 16IN0383 / Wabash Industrial Park		City/County: Wabash /	Wabash	Sampling Date: 7/20/2016		
pplicant/Owner: Banning Engineering			State: IN	Sampling Point: S-1		
vestigator(s): Alt & Witzig Consulting		Section, Township, Range: Section 36, T 28 N, R 6 E				
ndform (hillslope, terrace, etc.) Meadow						
ope (%): Lat: 40.50131 N						
				A classification: None		
e climatic / hydrologic conditions on the site typical for				n Remarks.)		
e Vegetation, Soil, or Hydrology				s" present? Yes X_ No		
e Vegetation, Soil, or Hydrology			eded, explain any ans			
UMMARY OF FINDINGS – Attach site ma						
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	No X No X No X	ls the Sampled within a Wetlar		No X		
Remarks:						
EGETATION – Use scientific names of plar	Absolute	Dominant Indicator	Dominance Test w	orksheet:		
Tree Stratum (Plot size: <u>30'</u>) 1. <i>None</i>		Species? Status	Number of Dominar That Are OBL, FAC	nt Species		
			Total Number of Do Species Across All			
t			Percent of Dominar	nt Species W, or FAC:0%(A/B)		
5		= Total Cover	That Are OBL, FAC	W, OFAC. <u>Va</u> (AVB)		
Sapling/Shrub Stratum (Plot size: 15')		Prevalence Index			
1. None				of: Multiply by:		
2				x 1 =		
3				x 2 = 0		
4				x 3 =0		
5		·		x 4 = _100 x 5 =500		
Herb Stratum (Plot size5')		_ = Total Cover		$\underline{100} x \ 5 = \underline{500} (B)$		
1. <u>Festuca spp.</u>	100	Y UPL				
2			Prevalence In	dex = B/A = 5.00		
3.			Hydrophytic Vege	tation Indicators:		
4			Dominance Te	st is >50%		
5.			Prevalence Inc			
5				Adaptations ¹ (Provide supporting narks or on a separate sheet)		
7				ydrophytic Vegetation ¹ (Explain)		
8				Jacob Hard Carden (Explain)		
9			¹ Indicators of hvdri	c soil and wetland hydrology must		
10				disturbed or problematic.		
Woody Vine Stratum (Plot size:30')	100	_ = Total Cover	Ludrophitic			
1 None			Hydrophytic Vegetation			
			Present?	Yes No <u>_ X _</u>		
2		= Total Cover	Fresentr			

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C	\sim	
3		

			th needed to docum	Features		
epth nches)	Color (moist)	%	Color (moist)	<u>% Type¹ L</u>	oc ² Textur	e Remarks
0 - 20	10YR 4/3	100			Si Cl	
<u> </u>						
	-					
					<u> </u>	
ype: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, CS	=Covered or Coated S	and Grains	² Location: PL=Pore Lining, M=Matrix
dric Soil	Indicators:				Indica	tors for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy G	eleyed Matrix (S4)	C	oast Prairie Redox (A16)
Histic Ep	pipedon (A2)		Sandy F	ledox (S5)		on-Manganese Masses (F12)
	stic (A3)			Matrix (S6)	0	ther (Explain in Remarks)
	en Sulfide (A4)			Mucky Mineral (F1)		
	d Layers (A5)			Gleyed Matrix (F2)		
_ 2 cm Mu	ick (A10)		Deplete	d Matrix (F3)		
	d Below Dark Surfac	e (A11)	_	Dark Surface (F6)	2	
_ Thick Da	ark Surface (A12)			d Dark Surface (F7)		ators of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Redox [Depressions (F8)		etland hydrology must be present,
						aloog disturbed or problematic
_	ucky Peat or Peat (S	3)			u	nless disturbed or problematic.
5 cm Mu	ucky Peat or Peat (S Layer (if observed)					ness disturbed of problematic.
5 cm Mu						
5 cm Mu Restrictive I Type:		:	=			Soil Present? Yes NoX
5 cm Mu Type: Depth (in- Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturati	GY GY drology Indicators cators (minimum of Water (A1) ater Table (A2)		Aquatic Fa True Aqua	oply) ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1)	Hydric	
5 cm Mu Restrictive I Type: Depth (inv Remarks: Remarks: YDROLO Yotland Hy Primary India Surface High Wa Saturati Water M	GY drology Indicators cators (minimum of r Water (A1) ater Table (A2) on (A3)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living	Hydric Sea	condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
5 cm Mu Type: Depth (in- temarks: YDROLO Vetland Hy Primary India Surface High Wa Saturati Vater M Sedime	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1)	Hydric Sea	Soil Present? Yes NoX condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
5 cm Mu Type: Depth (inv temarks: YDROLO Vetland Hy Primary India Saturati Surface High Wa Saturati Vater M Sedime Drift De	GY drology Indicators cators (minimum of of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)		Water-Sta Aquatic Fa True Aqua True Aqua Hydrogen Oxidized I Presence	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living	Roots (C3)	Soil Present? Yes NoX condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
5 cm Mu rype: Depth (inv emarks: //DROLO //etland Hy //imarv India Surface High Wa Saturati Saturati Sedime Drift De Algal Mi	GY drology Indicators cators (minimum of e Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3)		Water-Sta Aquatic Fa True Aquat True Aqua Hydrogen Oxidized I Presence Recent Inc	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4)	Roots (C3)	Soil Present? Yes NoX condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
5 cm Mu estrictive I Type: Depth (inv emarks: emarks: //DROLO /etland Hy //imarv India //etland Hy //imarv India //etland Hy //imarv India //imarv India //imar	Ches): Ches): GY drology Indicators cators (minimum of of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	: one is reau	Water-Sta Aquatic Fa True Aqua True Aqua Hydrogen Oxidized I Presence Recent Inc Thin Much	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S	Roots (C3)	Soil Present? Yes NoX condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
5 cm Mu Type: Depth (inv emarks: //DROLO //etland Hy Primarv India Surface High Wa Saturati Vater M Sedime Drift De Algal Mi Iron Dej Inundat	GY drology Indicators cators (minimum of e Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	: one is reau Imagery (E	Water-Sta Aquatic Fa Aquatic Fa True Aqua True Aqua Hydrogen Oxidized I Presence Recent Irc Thin Mucl	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S & Surface (C7)	Roots (C3)	Soil Present? Yes NoX condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
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5 cm Mu rype: Depth (in/ emarks: //DROLO //etland Hy //imary Indiana Surface High Wa Saturati Saturati Sedime Naturati Sedime Naturati Sedime Naturati Sedime Naturati 	Layer (if observed) ches): GY drology Indicators cators (minimum of r Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concav rvations:	Imagery (E re Surface	Water-Sta Aquatic Fa Aquatic Fa True Aqua True Aqua Hydrogen Oxidized I Presence Recent Irc Thin Mucl	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S < Surface (C7) Well Data (D9) plain in Remarks)	Roots (C3)	Soil Present? Yes NoX condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
5 cm Mu Restrictive I Type: Depth (in/ Remarks: YDROLO Yetland Hy Primary India Surface High Wa Saturati Saturati Sedime Aigal Mi Iron Dej Inundat Sparsel Field Observent	GY drology Indicators cators (minimum of r Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concav rvations: ter Present?	Imagery (E ve Surface Yes	Water-Sta Aquatic Fa True Aqua True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Mucl Thin Mucl Gauge or (B8) Other (Ex	ined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S < Surface (C7) Well Data (D9) plain in Remarks)	Roots (C3)	Soil Present? Yes NoX condary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)

Reset Form Print Form

WETLAND DETERMINATION DATA FORM – Midwest Region

roject/Site: 16IN0383 / Wabash Industrial Park City/County: Wat		bash	Sampling Date: 7/20/2016
Applicant/Owner: Banning Engineering		State: IN	Sampling Point: S-2
Investigator(s). Alt & Witzig Consulting	Section, Township, Range:	Section 36, T 28	N, R 6 E
Landform (hillslope, terrace, etc.): Agricultural Field	Local relief (con	cave, convex, non	ne):
Slope (%): Lat: 40.50075 N	Long: <u>-85.47599</u> W		Datum:
Soil Map Unit Name: Blount silt loam		NWI or WM	I classification: None
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes X No	_ (If no, explain i	n Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Norr	nal Circumstance	s" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If neede	d, explain any ans	swers in Remarks)
SUMMARY OF FINDINGS – Attach site map show	ing sampling point loca	tions, transed	cts, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No _X Yes _X No Yes No _X	Is the Sampled Area within a Wetland?	Yes	No <u>X</u>
Remarks:				

VEGETATION - Use scientific names of plants.

	= Total Cove	er	Total Number of Dominal Species Across All Strata Percent of Dominant Spe That Are OBL, FACW, or Prevalence Index works	a: ecies • FAC:	1 0%	. ,
	= Total Cove		That Are OBL, FACW, or	FAC:	0%	(A/B)
_			Prevalence Index works	sheet.		
				Shidet.		
			Total % Cover of:	Mult	iply by:	_
			OBL species	x 1 =	0	_
			FACW species			
			FAC species			
			FACU species			
	= Total Cov	er				
			Column Totals:	(A)	0	(B)
			Prevalence Index	= B/A =	0	_
			Prevalence Index is	≤3 0 ¹		
_			data in Remarks	or on a separ	ate sheet	t)
_						must
			Hydrophytic			
_				No	×	
		er				
1	00	= Total Cove 00 Y 	= Total Cover 00 Y N/A 100 = Total Cover = Total Cover	= Total Cover UPL species 00 Y N/A Prevalence Index Hydrophytic Vegetation Dominance Test is 2 Prevalence Index is Morphological Adap data in Remarks Problematic Hydrop 1Indicators of hydric soil be present, unless distu Hydrophytic Yegetation Present?	= Total Cover UPL species x 5 = 00 Y N/A Prevalence Index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is <3 0 ¹ Morphological Adaptations ¹ (Providata in Remarks or on a separation of the present, unless disturbed or problematic Hydrophytic Vegetation 100 = Total Cover Hydrophytic Yes No	= Total Cover UPL species x 5 =0 00 Y N/A Prevalence Index = B/A =0 Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is ≤3 0 ¹ Morphological Adaptations ¹ (Provide suppordata in Remarks or on a separate sheet Problematic Hydrophytic Vegetation ¹ (Explanation) 11ndicators of hydric soil and wetland hydrology be present, unless disturbed or problematic Hydrophytic Yegetation Present? Yes NoX

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		to the dep	th needed to docur			o commu		
epth nches)	Color (moist)	%	Color (moist)	x Feature %	Type ¹	Loc ²	Texture	Remarks
		95	10YR 5/8	5	<u> </u>	<u></u> M	Si Cl	Redox Concentrations Present
0 - 20	10YR 4/3							
		_		_		_	_	
	Concentration, D=Dep	letion, RM	Reduced Matrix, C	S=Covere	d or Coate	d Sand G	rains. ² Lo	ocation: PL=Pore Lining, M=Matrix.
dric Soil	Indicators:							s for Problematic Hydric Soils ³ :
_ Histosc				Gleyed Ma				t Prairie Redox (A16)
	Epipedon (A2)			Redox (St				Manganese Masses (F12) r (Explain in Remarks)
-	listic (A3) Ien Sulfide (A4)			d Matrix (S Mucky Mi	neral (F1)			
	ed Layers (A5)			Gleyed M				
-	luck (A10)			d Matrix (
	ed Below Dark Surfac	e (A11)		Dark Surfa			2	
	Dark Surface (A12)				urface (F7))		rs of hydrophytic vegetation and
	Mucky Mineral (S1)	2)	Redox	Depressic	ns (F8)			nd hydrology must be present, s disturbed or problematic.
	lucky Peat or Peat (S Layer (if observed)							
	•							
Туре:	nches)						Hydric So	il Present? Yes X No
Туре:	nches):			-			Hydric So	il Present? Yes <u>X</u> No
Type: Depth (in emarks:	DGY ydrology Indicators:		ired: check all that a					
Type: Depth (in marks: DROL(etland H imary Ind	DGY ydrology Indicators: licators (minimum of c		a destruction of the second second		ves (B9)		<u>Secon</u>	dary Indicators (minimum of two required
Type: Depth (ii marks: DROL(etland H imary Ind _ Surface	DGY ydrology Indicators: licators (minimum of o e Water (A1)		Water-Sta	ined Leav			<u>Secon</u>	dary Indicators (minimum of two required urface Soil Cracks (B6)
Type: Depth (ii marks: DROL(etland Hy imarv Ind Surface High W	DGY ydrology Indicators licators (minimum of d e Water (A1) /ater Table (A2)		a destruction of the second second	ained Leav auna (B13	3)		<u>Secon</u> Su Dr	dary Indicators (minimum of two required
Type: Depth (ii marks: DROL(etland H; imary Ind Surface High W Satura	DGY ydrology Indicators: licators (minimum of o e Water (A1)		Water-Sta Aquatic F	ained Leav auna (B13 atic Plants	3) s (B14)		<u>Secon</u> Su Dr Dr	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10)
Type: Depth (ii marks: DROL(etland H; imary Ind Surface High W Satura Water	DGY ydrology Indicators: licators (minimum of c e Water (A1) /ater Table (A2) tion (A3) Marks (B1)		Water-Sta Aquatic F True Aqua Hydrogen	ained Leav auna (B13 atic Plants Sulfide C	3) s (B14)	ving Roots	<u>Secon</u> Su Dr Dr Dr Cr	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2)
Type: Depth (ii marks: DROL(etland H; imary Ind Surface High W Satura Water i Sedimo	DGY ydrology Indicators: licators (minimum of c e Water (A1) /ater Table (A2) tion (A3)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence	ained Leav auna (B13 atic Plants Sulfide C Rhizospho of Reduc	3) 3 (B14) odor (C1) eres on Liv ed Iron (C	4)	<u>Secon</u> Su Dr Dr Dr Cr 5 (C3) Sa St	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8)
Type: Depth (ii emarks: DROL(etland H) imary Ind Surface High W Satura Satura Sedime Sedime Drift De	DGY ydrology Indicators: licators (minimum of c e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence	ained Leav auna (B13 atic Plants Sulfide C Rhizospho of Reduc	3) s (B14) odor (C1) eres on Liv	4)	<u>Secon</u> Su Dr Dr Dr Dr Dr St 5 (C3)St St 5 (5)G	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Type: Depth (ii emarks: DROLC etland Hy imary Ind Surface High W Saturai Saturai Sedime Drift De Algal M	DGY ydrology Indicators: licators (minimum of c e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent In	ained Leav auna (B13 atic Plants Sulfide C Rhizospho of Reduc	3) 3 (B14) 9dor (C1) ares on Liv ed Iron (C tion in Tille	4)	<u>Secon</u> Su Dr Dr Dr Dr Dr St 5 (C3)St St 5 (5)G	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1)
Type: Depth (ii marks: DROL(etland Hi imary Ind Saturai Surface High W Saturai Saturai Sedime Drift De Algal M Iron De Inunda	DGY ydrology Indicators: licators (minimum of c e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) tion Visible on Aerial	: one is requ Imagery (E	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent In Thin Muc 37) Gauge or	ained Leav auna (B13 atic Plants Sulfide C Rhizosphi of Reduc on Reduc k Surface Well Data	B) b (B14) b (C1) eres on Liv ed Iron (C- tion in Tille (C7) a (D9)	4)	<u>Secon</u> Su Dr Dr Dr Dr Dr St 5 (C3)St St 5 (5)G	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Type: Depth (ii emarks: DROLC etland Hy imary Ing Saturai Saturai Water I Saturai Orift Du Algal M Iron De Inunda Sparse	DGY ydrology Indicators: licators (minimum of a e Water (A1) vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aerial ely Vegetated Concav	: one is requ Imagery (E	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent In Thin Muc 37) Gauge or	ained Leav auna (B13 atic Plants Sulfide C Rhizosphi of Reduc on Reduc k Surface Well Data	B) b (B14) b (C1) eres on Liv ed Iron (C- tion in Tille (C7) a (D9)	4)	<u>Secon</u> Su Dr Dr Dr Dr Dr St 5 (C3)St St 5 (5)G	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Type: Depth (ii emarks: DROLO (etland Hy imary Ind Surface High W Satura' Satura' Water Satura' Water Jorit De Algal M Iron De Inunda Sparse (eld Obse	DGY ydrology Indicators: licators (minimum of o e Water (A1) vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aerial ely Vegetated Concavervations:	i one is requ Imagery (E ve Surface	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent In Thin Muc 37) Gauge or (B8) Other (Ex	ained Leav auna (B1 atic Plants Sulfide C Rhizospho of Reduc on Reduc on Reduc k Surface Well Data plain in R	B) (B14) (C1) eres on Live ed Iron (C- tion in Tille (C7) a (D9) emarks)	4)	<u>Secon</u> Su Dr Dr Dr Dr Dr St 5 (C3)St St 5 (5)G	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Type: Depth (ii emarks: DROLO etland Hy imary Ind Surface Water I Sedimu Saturai Sedimu Saturai Drift Du Algal M Iron De Inunda Sparse eld Obse	DGY ydrology Indicators: licators (minimum of of e Water (A1) vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aerial ely Vegetated Concav ervations: ater Present?	Imagery (E ve Surface	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent In Thin Muc 37) Gauge or (B8) Other (Ex No X Depth (iii	ained Leav auna (B13 atic Plants Sulfide C Rhizosphi of Reduc on Reduc on Reduc k Surface Well Dats plain in R	3) (B14) odor (C1) ores on Liv ed Iron (C- tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	<u>Secon</u> Su Dr Dr Dr Dr Dr St 5 (C3)St St 5 (5)G	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Type: Depth (ii emarks: DROLO etland Hy imary Ind Surface Water I Sedimu Saturai Sedimu Saturai Drift Du Algal M Iron De Inunda Sparse eld Obse	DGY ydrology Indicators: licators (minimum of d e Water (A1) vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) vat or Crust (B4) eposits (B5) tion Visible on Aerial ely Vegetated Concav ervations: ater Present?	Imagery (E re Surface Yes	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent In Thin Muc 37) Gauge or (B8) Other (Ex	ained Leav auna (B13 atic Plants Sulfide C Rhizosphi of Reduct on Reduct k Surface Well Data plain in R nches):	3) bdor (C1) eres on Liv ed Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	<u>Secon</u> Su Dr Dr Dr Cr G(C3)Sa S1 36)G	dary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)

Remarks:

Reset Form Print Form

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 16IN0383 / Wabash Industrial Park	City/County: Wabash / Wab	bash	Sampling Date:	7/20/2016
Applicant/Owner: Banning Engineering		State: IN	Sampling Point:	<u>S-3</u>
Investigator(s): Alt & Witzig Consulting	Section, Township, Range:	Section 36, T 28 N.	R 6 E	
Landform (hillslope, terrace, etc.): Meadow	Local relief (con	cave, convex, none):		
Slope (%): Lat: 40 50059 N	Long:85 48192 W		Datum:	
Soil Map Unit Name: Whitaker loam		NWI or WWI c	assification: Fre	shwater Emergent
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X No	_ (If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	/ disturbed? Are "Norr	mal Circumstances" p	present? Yes	XNo
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	d, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map showing	g sampling point loca	tions, transects	, important f	eatures, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No X No X No X	Is the Sampled Area within a Wetland?	Yes	No <u>X</u>	
Remarks.						

VEGETATION - Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30'</u>) 1. <u>None</u>		Species?	<u>Status</u>	Dominance Test Number of Domin That Are OBL, FA	ant Specie	s	0	(A)
2				Total Number of E Species Across A			1	(B)
4 5				Percent of Domini That Are OBL, FA			0%	_ (A/B)
Sapling/Shrub Stratum (Plot size: 15')		- 10tai 000		Prevalence Index	x workshe	et:		
1. None				Total % Cove	er of:	Mul	tiply by:	-
2				OBL species		x1=_	0	_
3				FACW species		x2=	0	
4				FAC species				. U
				FACU species				
5	•	= Total Co		UPL species				
Herb Stratum (Plot size:5*) 1. Festuca spp.	100			Column Totals: _				(B)
2				Prevalence	Index = B	/A =	5.00	-
3.			_	Hydrophytic Veg Dominance T Prevalence II Morphologic: data in Re Problematic	- Fest is >50 ⁴ ndex is ≤3 al Adaptatio emarks or c	% 0 ¹ ons ¹ (Prov on a sepa	vide suppo rate sheet	:)
9				¹ Indicators of hyd be present, unles				must
Woody Vine Stratum (Plot size: 30') 1. None		= Total Co	ver	Hydrophytic Vegetation				
2		= Total Co	ver	Present?	Yes	No	» <u> </u>	

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Matrix Redox Features Depth Matrix Redox Features Inches) Color (moist) % Color (moist) % 0 - 20 10YR 4/3 100	Texture Remarks
inches) Color (moist) % Color (moist) % Type ¹ Loc ²	Texture Remarks
	Texture Remarks
0-20 10YR 4/3 100	
	·
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain	² Location: PL=Pore Lining, M=Matrix
ydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
_ Histosol (A1) Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
_ Histic Epipedon (A2) Sandy Redox (S5)	Iron-Manganese Masses (F12)
Black Histic (A3) Stripped Matrix (S6)	Other (Explain in Remarks)
_ Hydrogen Sulfide (A4) Loarny Mucky Mineral (F1)	
_ Stratified Layers (A5) Loamy Gleyed Matrix (F2)	
_ 2 cm Muck (A10) Depleted Matrix (F3)	
_ Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	3
_ Thick Dark Surface (A12) Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
_ Sandy Mucky Mineral (S1) Redox Depressions (F8)	wetland hydrology must be present,
_ 5 cm Mucky Peat or Peat (S3)	unless disturbed or problematic.
estrictive Layer (if observed):	
Туре:	
Depth (inches):	Hydric Soil Present? Yes No X
DROLOGY	
letland Hydrology Indicators:	
retland Hydrology Indicators: rimary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Indicators: Indicators: rimary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6) Drainage Patterns (B10)
Indicators: rimary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2)
retrand Hydrology Indicators: rimary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6) Drainage Patterns (B10)
Indicators: rimary Indicators (minimum of one is required; check all that apply)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Vetland Hydrology Indicators: rimary Indicators (minimum of one is required; check all that apply)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Indicators: rimary Indicators (minimum of one is required: check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Indicators: rimary Indicators (minimum of one is required: check all that apply)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Idetiand Hydrology Indicators: rimary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Itelland Hydrology Indicators: rimary Indicators (minimum of one is required: check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Vetland Hydrology Indicators: trimary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)	 Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Vetland Hydrology Indicators: trimary Indicators (minimum of one is required; check all that apply)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Vetland Hydrology Indicators: trimary Indicators (minimum of one is required; check all that apply)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Steface Water Present? Yes No X Water Table Present? Yes No X Depth (inches):	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)

US Army Corps of Engineers

Remarks:

Midwest Region - Interim Version

WETLAND DETERMINATION DATA FORM -- Midwest Region

oject/Site: 16IN0383 / Wabash Industrial Park City/County: Wabash / Wab		sh	Sampling Date: 7/20/2016
Applicant/Owner: Banning Engineering		State: IN	Sampling Point: S-4
Investigator(s): Alt & Witzig Consulting	Section, Township, Range	Section 36, T 28 N, I	R 6 E
Landform (hillslope, terrace, etc.): Agricultural Field	Local relief (conca	ave, convex, none):	
Slope (%): Lat: 40.50065 N	Long: <u>-85.48285</u> W		Datum:
Soil Map Unit Name: Fincastle silt loam		NWI or WWI cl	assification: None
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X No	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norma	al Circumstances" p	resent? Yes X_ No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed,	explain any answe	rs in Remarks)
SUMMARY OF FINDINGS - Attach site map showing	g sampling point locati	ons, transects	, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>No X</u> Yes <u>X</u> No <u>X</u> Yes <u>No X</u>	Is the Sampled Area within a Wetland?	Yes	No <u></u>	
Remarks:					

VEGETATION - Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30'</u>) 1. <u>None</u>		Species?	Status	Dominance Test works Number of Dominant Spe That Are OBL, FACW, or	cies	0	(A)
2				Total Number of Dominat Species Across All Strata	nt i:	1	(B)
4 5				Percent of Dominant Spe That Are OBL, FACW, or		0%	(A/B)
Sapling/Shrub Stratum (Plot size: 15')		- 10101000		Prevalence Index works	sheet:		
1. None				Total % Cover of	Mu	tiply by:	_
2				OBL species	x 1 =	0	
3.				FACW species	x 2 =	0	_
4.				FAC species			
5		2		FACU species			
		= Total Cov	er	UPL species			
Herb Stratum (Plot size: 5')		- 10101000	01	Column Totals:			(B)
1. Soybean crop	100	Y	N/A				
2				Prevalence Index	= B/A =	0	_
3				Hydrophytic Vegetation	n Indicators:		
4.				Dominance Test is >	>50%		
5				Prevalence Index is			
5 6				Morphological Adap data in Remarks	tations ¹ (Prov		
7			_	Problematic Hydrop			·
9				1.			
10				¹ Indicators of hydric soil be present, unless distu			must
Woody Vine Stratum (Plot size: 30')		= Total Cov	rer	be present, unless distu			
1 None				Hydrophytic			
				Vegetation			
2		T 1 10	ver	Present? Yes	No	<u>x</u>	
	e sheet.)					_	

		to the dep	oth needed to docum	x Feature			a site vederaves	
Depth inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 20	10YR 4/3	90	10YR 5/8	10		M	Si Cl	Redox Concentrations Present
_		_		_		_		
		pletion, RM	=Reduced Matrix, C	S=Covere	d or Coate	d Sand G	rains. ² Lo	ocation: PL=Pore Lining, M=Matrix.
•	Indicators:		Sandy	Gleyed Ma	atrix (SA)			t Prairie Redox (A16)
Black H Hydroge Stratifie 2 cm M	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10)		Sandy Strippe Loamy Loamy X Deplete	Redox (S5 d Matrix (S Mucky Min Gleyed M ed Matrix (5) 56) neral (F1) atrix (F2) F3)		Iron-M	Manganese Masses (F12) (Explain in Remarks)
Thick D Sandy I	d Below Dark Surfa ark Surface (A12) Mucky Mineral (S1) ucky Peat or Peat (S		Deplete	Dark Surfa ed Dark Su Depressio	urface (F7))	wetla	rs of hydrophytic vegetation and nd hydrology must be present, is disturbed or problematic.
Type: Depth (ir	Layer (if observed	-	=	_			Hydric So	il Present? Yes X No
Type: Depth (ir		-	=				Hydric So	il Present? Yes <u>X</u> No <u></u>
Type: Depth (ir Remarks:	nches):	-					Hydric So	il Present? Yes <u>X</u> No
Type: Depth (ir Remarks: YDROLO	nches): DGY /drology Indicators							
Type: Depth (ir Remarks: YDROLC Wetland Hy Primary Ind Saturat Water f Saturat Water f Saturat Unift De Algal M Iron De Inunda	DGY /drology Indicators icators (minimum of a Water (A1) /ater Table (A2) icion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aeria	: one is reau	Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc B7) Gauge o	ained Leav Fauna (B1 atic Plants n Sulfide C Rhizosphr of Reduc on Reduc ck Surface r Well Data	3) s (B14) odor (C1) eres on Liv eed Iron (C tion in Tille (C7) a (D9)	(4)	Secon 	il Present? Yes X No dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 unted or Stressed Plants (D1) eomorphic Position (D2) AC-Neutral Test (D5)
Type: Depth (ir Remarks: YDROLC Wetland Hy Primary Ind Saturat Water f Saturat Water f Saturat Unift De Algal M Iron De Inunda	DGY /drology Indicators icators (minimum of a Water (A1) /ater Table (A2) icion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aeria ly Vegetated Conca	: one is reau	Water-St Aquatic F True Aqu True Aqu Oxidized Presence Recent In Thin Muc B7) Gauge o	ained Leav Fauna (B13 natic Plants n Sulfide C Rhizosphre of Reduct con Reduct ck Surface	3) s (B14) odor (C1) eres on Liv eed Iron (C tion in Tille (C7) a (D9)	(4)	Secon 	dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) y-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 unted or Stressed Plants (D1) eomorphic Position (D2)
Type: Depth (ir Remarks: YDROLO Vetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inunda Sparse Field Obse	DGY /drology Indicators icators (minimum of a Water (A1) /ater Table (A2) ion (A3) Warks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aeria ly Vegetated Conca ervations:	: one is requ Imagery (I ve Surface	Water-St Aquatic F True Aqu True Aqu Oxidized Presence Recent In Thin Muc B7) Gauge o	ained Leav Fauna (B13 In Sulfide C Rhizosphre of Reduct for Reduct con Reduct ck Surface r Well Data xplain in R	3) s (B14) odor (C1) eres on Liv eed Iron (C tion in Tille (C7) a (D9)	(4)	Secon 	dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) y-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 unted or Stressed Plants (D1) eomorphic Position (D2)
Type: Depth (ir Remarks: YDROLO Vetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inunda Sparse Field Obse	DGY /drology Indicators icators (minimum of a Water (A1) /ater Table (A2) icion (A3) Marks (B1) ant Deposits (B2) aposits (B3) lat or Crust (B4) aposits (B5) tion Visible on Aeria ily Vegetated Conca irvations: ater Present? e Present?	: one is required limagery (i ve Surface Yes Yes	Water-St Aquatic F Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge o (B8) Other (E:	ained Leav fauna (B13 natic Plants n Sulfide C Rhizosphre of Reduct on Reduct on Reduct ck Surface r Well Data xplain in R nches):	3) s (B14) Dodor (C1) eres on Liv wed Iron (C tion in Tille (C7) a (D9) wemarks)	:4) ed Soils (C	Secon Su Dr Dr Dr Cr s (C3)Sa S1 S1 S1 S1 S1 S1 S2 S2 S1	dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) y-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 unted or Stressed Plants (D1) eomorphic Position (D2)

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 16IN0383 / Wabash Industrial Park	City/County: Wabash / Waba	sh	Sampling Date: 7/20/2016
Applicant/Owner: Banning Engineering		State: IN	Sampling Point: S-5
Investigator(s): Alt & Witzig Consulting	Section, Township, Range:	Section 36, T 28 N, I	R 6 E
Landform (hillslope, terrace, etc.); Wooded Area	Local relief (conca	ave, convex, none);	
Slope (%): Lat: 40.50206 N	Long: -85.48167 W		Datum:
Soil Map Unit Name: Sloan silty clay loam		NWI or WWI cla	assification: None
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes <u>X</u> No	(If no, explain in Re	emarks)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norm	al Circumstances" p	resent? Yes X No
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? (If needed,	explain any answer	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locat	ions, transects	, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes No X Yes No X	Is the Sampled Area within a Wetland?	Yes NoX
Remarks:			

VEGETATION – Use scientific names of plants.

Absolute % Cover		Indicator Status	Dominance Test worksheet: Number of Dominant Species
20	Y	FAC	That Are OBL, FACW, or FAC: (A)
10	Υ	FAC	Total Number of Dominant
10	<u> </u>	FACU	Species Across All Strata: 8 (B)
			Percent of Dominant Species
			That Are OBL, FACW, or FAC:(A/B)
40	= Total Cov	er	Prevalence Index worksheet:
05	V	FACU	Total % Cover of:Multiply by:
-		FACU	OBL species 25 x1 =25
			FACW species $50 \times 2 = 100$
			FAC species X2 = Y00
			FACU species X3 =
			UPL species x 5 =
25	= Total Cov	/er	Column Totals: <u>150</u> (A) <u>395</u> (B)
50	Y	FACW	
25	Y	OBL	Prevalence Index = B/A = 2.63
	Y	FACU	Hydrophytic Vegetation Indicators:
	C		Dominance Test is >50%
			X Prevalence Index is ≤3 0 ¹
	200		Morphological Adaptations ¹ (Provide supporting
			data in Remarks or on a separate sheet)
			Problematic Hydrophytic Vegetation ¹ (Explain)
			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	= Total Co	ver	
10	Y	FACU	Hydrophytic Vegetation
			Present? Yes X No
10	= Total Co	VOL	
	% Cover 20 10 10 25 50 25 20 20 20 20 20 20 25 20 25 20	% Cover Species? 20 Y 10 Y 10 Y 10 Y 10 Y 40 = Total Cov 25 Y 25 Y 25 Y 25 Y 25 Y 25 Y 20 Y	% Cover Species? Status 20 Y FAC 10 Y FAC 10 Y FAC 10 Y FAC 10 Y FACU 40 = Total Cover 25 Y FACU 25 = Total Cover 25 Y OBL 20 Y FACU

Sampling	Point:	S-5
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color (moist) % Color (moist) % Typel Loc ² Texture 0-20 10YR 4/3 100	Sampling Point: S-5
Color (moist) % Color (moist) % Type Loc ² Texture 0 - 20 10YR 4/3 100	or moleators.)
0 - 20 10YR 4/3 100 get: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Loc dric Soil Indicators: Indicators Histosol (A1) Sandy Gleyed Matrix (S4) Coast Histosol (A1) Sandy Redox (S5) Indicators Histosol (A1) Sandy Redox (S5) Indicators Hydrogen Sulfide (A4) Loarny Mucky Mineral (F1) Other in Stratified Layers (A5) Loarny Gleyed Matrix (F2) Other in 2 cm Muck (A10) Redox Dark Surface (F6) *Indicators Depleted Below Dark Surface (A11) Redox Depressions (F8) wetlan Sandy Mucky Mineral (S1) Redox Depressions (F8) wetlan 5 cm Mucky Peat or Peat (S3) unless strictive Layer (if observed): True Aquatic Fauna (B13) Drained Strictive C1) Type:	Remarks
pre: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Loc Histo Epipedon (A2) Sandy Gleyed Matrix (S4) _Coast Histo Epipedon (A2) Sandy Rodox (S5) _Iron-M Black Histic (A3) _Stripped Matrix (S6) _Other in the stripped Matrix (S6) _Other in the stripped Matrix (S6) Stratified Layers (A5) _Loamy Gleyed Matrix (F2)	
Proceeding Depresent of the second secon	
Price Soil Indicators: Indicators: Histosol (A1)	
Indicators: Indicators: Histosol (A1)	
DROLOGY Indicators: Indicators: Histosol (A1)	
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Proceeding Indicators: Indicators: - Histosol (A1)	-
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ydric Soil Indicators: Indicators: Indicators Histosol (A1)	cation: PL=Pore Lining, M=Matrix
Histic Epipedon (A2) Sandy Redox (S5) Iron-M Black Histic (A3) Stripped Matrix (S6) Other if Stratified Layers (A5) Loamy Gleyad Matrix (F2) Other if Stratified Layers (A5) Depleted Matrix (F3) Depleted Bark Surface (A11) Depleted Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Indicators Indicators Sandy Mucky Mineral (S1) Redox Depressions (F8) wetlan s or Mucky Peat or Peat (S3) unless unless estrictive Layer (if observed): Type: Pepted Matrix (F1) Second Surface Water (A1) Water-Stained Leaves (B9) Surface Water (A1) Surface Water (A1) Water-Stained Leaves (B9) Surface Water (A1) Hydrogen Sulfide Odor (C1) Crast Augustic Plants (B13) Drast Augustic Plants (B14) Dry Saturation (A3) True Aquatic Plants (B14) Dry Saturation (A3) Saturation (A3) Crast Augustic Plants (B14) Saturation (A3) Saturation (A3) Saturation (A3) Saturation (A3) Saturation (A4) Saturation (A4	for Problematic Hydric Soils ³ :
Histic Epipedon (A2) Sandy Redox (S5) Iron-M Black Histic (A3) Stripped Matrix (S6) Other its (S6) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Stratified Layers (A5) Depleted Matrix (F2) 2 cm Muck (A10) Depleted Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) s or Mucky Peat or Peat (S3) unless estrictive Layer (if observed): Type: Depth (inches): Poptiet Dark Surface (A1) Sardace Water (A1) Water-Stained Leaves (B9) Surface Water (A1) Aquatic Fauna (B13) Stration (A3) True Aquatic Plants (B14) Yet Marks (B1) Hydrogen Suffide Odor (C1) Saturation (A3) Presence of Reduced Iron (C4) Saturation (C4) Stration (B3) Presence of Reduced Iron (C4) Saturation (C4) Algal Mar Crust (B4) Recent Iron Reduction in Tilled Solis (C6) Ge Iron Deposits (B3) Presence of Well Data (D9) Saturation Present? Yet Table Present? Yes No X Depth (inches): Water Table Present? Yes	Prairie Redox (A16)
Black Histic (A3)	anganese Masses (F12)
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	s of hydrophytic vegetation and d hydrology must be present,
	a disturbed or problematic.
Type:	diatarbed of problematic.
Depth (inches):	
Itemarks: YDROLOGY Vetland Hydrology Indicators: trimary Indicators (minimum of one is required: check all that apply) Second	
//DROLOGY Vetland Hydrology Indicators: trimary Indicators (minimum of one is required; check all that apply) Second	Present? Yes No X
Vetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Second	
Primary Indicators (minimum of one is required; check all that apply) Second	
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Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Gee Iron Deposits (B5) Thin Muck Surface (C7) FAU Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No X Depth (inches): Gauge or Welland Hydrolog includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	inted or Stressed Plants (D1)
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Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes NoX Depth (inches): Water Table Present? Yes NoX Depth (inches): Saturation Present? Yes NoX Depth (inches): Saturation Present? Yes NoX Depth (inches): Metland Hydrolog Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	C-Neutral Test (D5)
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No _X_ Depth (inches): Nater Table Present? Yes No _X_ Depth (inches): Saturation Present? Yes No _X_ Depth (inches): Saturation Present? Yes No _X_ Depth (inches): Wetland Hydrolog Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
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includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available;	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	gy Present? Yes No <u>X</u>
Remarks:	

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 16IN0383 / Wabash Industrial Park	City/County: Wabash / Wat	Sampling Date: 7/20/2016	
Applicant/Owner: Banning Engineering		State: IN	Sampling Point: S-6
Investigator(s): Alt & Witzig Consulting	Section, Township, Range:	Section 36, T 28	N, R 6 E
Landform (hillslope, terrace, etc.): Wooded Area	Local relief (con	cave, convex, no	ne):
Slope (%): Lat: 40.50214 N	Long: -85.48166 W		Datum:
Soil Map Unit Name: Sloan silty clay loam	1111	NWI or W	VI classification: None
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes X No	_ (If no, explain	in Remarks_)
Are Vegetation, Soil, or Hydrology signific	cantly disturbed? Are "Norr	nal Circumstance	es" present? Yes X No
Are Vegetation, Soil, or Hydrology natura	Ily problematic? (If neede	d, explain any an	swers in Remarks)
SUMMARY OF FINDINGS – Attach site map show	wing sampling point loca	tions, transe	cts, important features, etc.
Hydrophytic Vegetation Present? Yes X No	is the Sampled Are	a	

Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No	within a Wetland?	Yes X No	
Remarks:				

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:30')	Absolute <u>% Cover</u> 20	Dominant <u>Species?</u> Y	<u>Statuş</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
1. Acer rubrum 2. Fraxinus pennsylvanica	15		FACW	
			FAC	Total Number of Dominant Species Across All Strata: 6 (B)
				Species Across All Strata:6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:100% (A/B)
Sapling/Shrub Stratum (Plot size:15')	45	= Total Cov	er	Prevalence Index worksheet:
1 None				Total % Cover of Multiply by:
2				OBL species x 1 = 20
3.				FACW species 35 x 2 = 70
				FAC species 85 x 3 =255
4 5.				FACU species $5 \times 4 = 20$
5.		= Total Cov		UPL species x 5 =
Herb Stratum (Plot size: 5')		- 10tal 001		Column Totals: <u>145</u> (A) <u>365</u> (B)
1. Setaria pumila	50	Y	FAC	
2. Carex Iupulina		Y	OBL	Prevalence Index = B/A = 2.52
3 Bidens frondrosa	45	N	FACW	Hydrophytic Vegetation Indicators:
4. Rosa multiflora	5	N	FACU	X Dominance Test is >50%
5. Phalaris arundinacea	5	N	FACW	X Prevalence Index is ≤3 0 ¹
6 Ambrosia trifida	c	N	FAC	Morphological Adaptations ¹ (Provide supporting
7		1		data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation ¹ (Explain)
9				
10				¹ Indicators of hydric soil and wetland hydrology must
		= Total Co		be present, unless disturbed or problematic
Woody Vine Stratum (Plot size: 30')		- 10tar 00	101	
1 Vitis vulpina	5	Y	FACW	Hydrophytic
2				Vegetation Present? Yes X No
	5	= Total Co	ver	
Remarks: (Include photo numbers here or on a separate				

US Army Corps of Engineers

Midwest Region - Interim Version

rofile Des	cription: (Describe						6409 600 V.D	
Depth	Matrix	_		x Features				a financial de la companya de
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type	Loc ²	Texture	Remarks
0 - 20	10YR 5/1		7.5YR 5/6				Si Cl	Redox Concentrations Present
		_		_	_			
Type: C=C	oncentration, D=Dep	letion, RM	Reduced Matrix, C	6=Covere	d or Coate	ed Sand G		cation: PL=Pore Lining, M=Matrix.
	Indicators:						Indicator	s for Problematic Hydric Soils ³ :
	l (A1) pipedon (A2) listic (A3)		Sandy	Gleyed Ma Redox (S5 d Matrix (S	5)		Iron-I	t Prairie Redox (A16) Manganese Masses (F12) r (Explain in Remarks)
Hydrog Stratifie 2 cm M	en Sulfide (A4) d Layers (A5) uck (A10) d Below Dark Surfac	e (A11)	Loamy Loamy X Deplete	Mucky Mi Gleyed M	neral (F1) atrix (F2) F3)			
Thick D	ark Surface (A12) Mucky Mineral (S1)	- (,	Deplete	ed Dark Su Depressio	urface (F7)	wetla	rs of hydrophytic vegetation and nd hydrology must be present, or disturbed or problematio
	ucky Peat or Peat (S)	3)					unies	s disturbed or problematic
	ucky Peat or Peat (S Layer (if observed):							s disturbed or problematic
Restrictive								is disturbed of problematic.
	Layer (if observed)		2					il Present? Yes <u>X</u> No
Restrictive Type: Depth (ir Remarks:	Layer (if observed):							
Restrictive Type: Depth (ir Remarks:	Layer (if observed):							
Restrictive Type: Depth (ir Remarks: YDROLC	Layer (if observed):		ired; check all that a	DDIV)			Hydric So	
Restrictive Type: Depth (ir Remarks: YDROLO Wetland Hy Primary Ind Surface	Layer (if observed): nches): DGY ydrology Indicators: icators (minimum of o a Water (A1)		Water-Sta	ained Leav			Hydric So Secon	il Present? Yes X No dary Indicators (minimum of two requir urface Soil Cracks (B6)
Restrictive Type: Depth (ir Remarks: YDROLO Wetland Hy Primary Ind Surface High W	Layer (if observed): nches): DGY ydrology Indicators: icators (minimum of of a Water (A1) /ater Table (A2)		Water-Sta Aquatic F	ained Leav auna (B13	3)		Hydric So Secon	il Present? Yes X No dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10)
Restrictive Type: Depth (ir Depth Similar Remarks: YDROLO Wetland Hy Primary Ind Surface High W X Saturation	Layer (if observed): nches): DGY ydrology Indicators: icators (minimum of d a Water (A1) /ater Table (A2) tion (A3)		Water-Sta Aquatic F True Aqu	ained Leav auna (B13 atic Plants	3) s (B14)		Hydric So Secon Di Di Di	il Present? Yes X No dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2)
Restrictive Type: Depth (ir Remarks: YDROLC Wetland Hy Primary Ind Surface High W X Satural Water	Layer (if observed): nches): DGY ydrology Indicators: icators (minimum of c e Water (A1) /ater Table (A2) tion (A3) Marks (B1)		Water-Sta Aquatic F True Aqu Hydroger	ained Leav auna (B13 atic Plants n Sulfide C	3) s (B14) Odor (C1)		Hydric So Secon So Do Do Do Do	il Present? Yes X No dary Indicators (minimum of two requirur urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8)
Restrictive Type: Depth (ir Depth science Remarks: YDROLC Wetland Hy Primary Ind	Layer (if observed): nches): DGY /drology Indicators: icators (minimum of c e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		Water-Sta Aquatic F True Aqu Hydroger Oxidized	ained Leav auna (B13 atic Plants n Sulfide C Rhizosph	3) s (B14) Odor (C1) eres on Li	ving Roots	Hydric So <u>Secon</u> <u>Si</u> <u>Si</u> Si Si Si Si Si Si Si Si Si Si	il Present? Yes X No dary Indicators (minimum of two requirur urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9)
Restrictive Type: Depth (ir Depth (sr Remarks: YDROLC Wetland Hy Primary Ind	Layer (if observed): nches): DGY ydrology Indicators: icators (minimum of c e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence	ained Leav auna (B13 atic Plants Sulfide C Rhizospho of Reduc	3) s (B14) Odor (C1) eres on Li æd Iron (C	(4)	Hydric So 	il Present? Yes X No dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1)
Restrictive Type: Depth (ir Depth (sr Remarks: YDROLC Wetland Hy Primary Ind Surface High W X Satural Water Sedime Drift De Algal M	Layer (if observed): hches): DGY ydrology Indicators: icators (minimum of of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) fat or Crust (B4)		Water-Sta Aquatic F True Aqu Hydroger Oxidized Recent Ir	ained Leav auna (B13 atic Plants n Sulfide C Rhizospho of Reduct on Reduct	3) s (B14) Odor (C1) eres on Li ced Iron (C tion in Till		Hydric So 	il Present? Yes X No dary Indicators (minimum of two requirur urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Restrictive Type: Depth (ir Remarks: YDROLC Wetland Hy Primary Ind	Layer (if observed): hches): DGY ydrology Indicators: icators (minimum of of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5)	one is reau	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	ained Leav auna (B13 atic Plants Sulfide C Rhizosphe of Reduc on Reduc k Surface	3) s (B14) Odor (C1) eres on Li ced Iron (C tion in Tille (C7)	(4)	Hydric So 	il Present? Yes X No dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1)
Restrictive Type: Depth (ir Remarks: PYDROLC Wetland Hy Primary Ind Surface High W X Satural Water I Sedime Drift De Algal M Iron De Inunda	Layer (if observed): nches): DGY /drology Indicators: icators (minimum of of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) fat or Crust (B4) eposits (B5) tion Visible on Aerial	one is requ	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc 37) Gauge of	ained Leav auna (B13 atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface	3) s (B14) Odor (C1) eres on Li ced Iron (C tion in Tille (C7) a (D9)	(4)	Hydric So 	il Present? Yes X No dary Indicators (minimum of two requir urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 unted or Stressed Plants (D1) eomorphic Position (D2)
Restrictive Type: Depth (ir Remarks: Primarks: Wetland Hy Primary Ind Surface High V X Satural Water I Sedime Drift De Algal M Iron De Inunda Sparse	Layer (if observed): hches): DGY ydrology Indicators: icators (minimum of of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mart or Crust (B4) eposits (B5) tion Visible on Aerial by Vegetated Concav	one is requ	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc 37) Gauge of	ained Leav auna (B13 atic Plants Sulfide C Rhizosphe of Reduc on Reduc k Surface	3) s (B14) Odor (C1) eres on Li ced Iron (C tion in Tille (C7) a (D9)	(4)	Hydric So 	il Present? Yes X No dary Indicators (minimum of two requirur urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Restrictive Type: Depth (ir Remarks: Primarks: Wetland Hy Primarv Ind Surface High W X Satural Water I Sedime Algal M Iron De Inunda Sparse Field Obse	Layer (if observed): hches): DGY ydrology Indicators: icators (minimum of of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mart or Crust (B4) eposits (B5) tion Visible on Aerial by Vegetated Concaver ervations:	one is requ Imagery (F e Surface	Water-Sta Aquatic F Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc 37) Gauge of (B8) Other (Ea	ained Leav auna (B13 atic Plants o Sulfide C Rhizosphe of Reduct on Reduct k Surface Well Data xplain in R	3) s (B14) Odor (C1) eres on Li ced Iron (C tion in Tille (C7) a (D9)	(4)	Hydric So 	il Present? Yes X No dary Indicators (minimum of two requirur urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)
Restrictive Type: Depth (ir Remarks: Primarks: Wetland Hy Primarv Ind Surface High W X Satural Water I Sedime Algal M Iron De Inunda Sparse Field Obse	Layer (if observed): hches): DGY ydrology Indicators: icators (minimum of d e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mar or Crust (B4) eposits (B5) tion Visible on Aerial ely Vegetated Concaver ervations: ater Present?	one is requ Imagery (E e Surface fes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc 37) Gauge of	ained Leav auna (B13 atic Plants o Sulfide C Rhizospho o f Reduc on Reduc k Surface · Well Data xplain in R	3) s (B14) Odor (C1) eres on Li eres on Li væd Iron (C tion in Tille (C7) a (D9) eemarks)	(4)	Hydric So 	il Present? Yes X No dary Indicators (minimum of two requirur urface Soil Cracks (B6) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) eomorphic Position (D2)

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

roject/Site: 16IN0383 / Wabash Indust	trial Park	(City/County:	Wabash /	Wabash Sampling Date: 7/20/2016
pplicant/Owner: Banning Engineering					State: IN Sampling Point: S-7
			Section, Tov	vnship, Rar	ge: Section 36, T 28 N, R 6 E
andform (hillslope, terrace, etc.) Wood					concave, convex, none):
					Datum:
					NWI or WWI classification: None
il Map Unit Name: Fincastle silt loam					
e climatic / hydrologic conditions on th					
e Vegetation, Soil, or					Normal Circumstances" present? Yes X No
e Vegetation, Soil, or				·	eded, explain any answers in Remarks.)
UMMARY OF FINDINGS - A	ttach site ma	ap showing	sampling	g point lo	ocations, transects, important features, etc
Hydrophytic Vegetation Present?	Yes	No 🗶	le th	e Sampled	Area
Hydric Soil Present?	Yes	No X		in a Wetlan	
Wetland Hydrology Present?					
Remarks:					
			-		
EGETATION – Use scientific r	names of plar	Absolute	Dominant	Indicator	Dominance Test worksheet:
Free Stratum (Plot size: 30')		Species?		Number of Dominant Species
Ulmus rubra			Y		That Are OBL, FACW, or FAC: (A)
Acer saccharum		10	Y	FACU	Total Number of Dominant
Celtis occidentalis		10	Y	FAC	Species Across All Strata: <u>8</u> (B)
Juglans nigra		10	Y	FACU	Percent of Dominant Species
i					That Are OBL, FACW, or FAC: (A/B
			= Total Cov	/er	Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size:			v	EACU	Total % Cover of Multiply by:
			Y	FACU	OBL species x1 = 0
· -					FACW species x 2 =0
					FAC species 35 $x 3 = 105$
		_			FACU species $50 \times 4 = 200$
		25	= Total Cov		UPL species x 5 = 150
Herb Stratum (Plot size: 5')		- 10tal 00		Column Totals:115 (A)455 (B)
Rubus armeniacus			Y	UPL	
2. Lonicer morrowii		20	Y	FACU	Prevalence Index = B/A = 3.96
Ambrosia trifida		5	N	FAC	Hydrophytic Vegetation Indicators:
L					Dominance Test is >50%
5					Prevalence Index is ≤3 0 ¹
3					Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7					Problematic Hydrophytic Vegetation ¹ (Explain)
3					
9					¹ Indicators of hydric soil and wetland hydrology must
10					be present, unless disturbed or problematic
Woody Vine Stratum (Plot size	30'	55	= Total Co	ver	
		5	Y	FACU	Hydrophytic
					Vegetation
1 Parthenocissus quinquefolia					
<u> <u> 1</u> Parthenocissus quinquefolia 2 </u>		5	= Total Co		Present? Yes No _X

US Army Corps of Engineers

Midwest Region - Interim Version

Sam	plina	Point:	S-1
Jain	PILIN	1 01110.	_

epth	ription: (Describe (Matrix		Redox Features			
iches)	Color (moist)		Color (moist)%Type1	Loc ²	Texture	Remarks
0 - 20	10YR 4/3	100				
	-					
-	C					
	2					
vne C=C	oncentration D=Dep	etion. RM=	Reduced Matrix, CS=Covered or Coa	ted Sand Grai	ns. ² Loca	tion: PL=Pore Lining, M=Matrix.
	Indicators:				Indicators for	or Problematic Hydric Soils ³ :
Histoso	(A1)		Sandy Gleyed Matrix (S4)	Coast Pi	rairie Redox (A16)
	pipedon (A2)		Sandy Redox (S5)		Iron-Mar	nganese Masses (F12)
	istic (A3)		Stripped Matrix (S6)		Other (E	Explain in Remarks)
Hydroge	en Sulfide (A4)		Loamy Mucky Mineral (F			
	d Layers (A5)		Loamy Gleyed Matrix (F2	2)		
	uck (A10)		Depleted Matrix (F3)			
	d Below Dark Surfac	e (A11)	Redox Dark Surface (F6) Depleted Dark Surface (F		³ Indicators (of hydrophytic vegetation and
	ark Surface (A12) /lucky Mineral (S1)		Redox Depressions (F8)	()		hydrology must be present,
	ucky Peat or Peat (St)	3)				disturbed or problematic.
	Layer (if observed):	-				
Depth (in						
emarks	Circo),				Hydric Soil F	Present? Yes <u>No X</u>
					Hydric Soil F	resent? Yes No
YDROLC					Hydric Soil F	resent? Yes NO
YDROLC	GY drology Indicators:		ed: check all that apply)			ry Indicators (minimum of two require
YDROLC Vetland Hy Primary Ind	OGY drology Indicators: cators (minimum of c		ed: check all that apply) Water-Stained Leaves (B9)		Secondar	
YDROLC Vetland Hy Primary Ind	GY drology Indicators:				<u>Secondar</u> Surfa	ry Indicators (minimum of two require
YDROLC Vetland Hy Primary Ind Surface High W	OGY drology Indicators: cators (minimum of c Water (A1)		Water-Stained Leaves (B9)		<u>Secondar</u> Surfa Drair	ry Indicators (minimum of two require ace Soil Cracks (B6)
YDROLC Vetland Hy Primary Ind Surface High W Saturat	OGY drology Indicators: cators (minimum of c Water (A1) ater Table (A2)		Water-Stained Leaves (B9) Aquatic Fauna (B13)		<u>Secondar</u> Surfa Drair Dry-S	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3)		 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14))	<u>Secondar</u> Surfa Drair Dry-S Cray C3) Satu	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I Sedime	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1)		 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron) Living Roots (((C4)	<u>Secondar</u> Surfa Drair Dry-S Cray C3)Satu Stun	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)		 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T) Living Roots (((C4)	<u>Secondar</u> Surfa Drair Dry-S Cray C3)Satu Stun Geor	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLC Wetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3)		 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron) Living Roots (((C4)	<u>Secondar</u> Surfa Drair Dry-S Cray C3)Satu Stun Geor	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inunda	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial	ine is requir	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9)) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-S Cray C3)Satu Stun Geor	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLC Vetland Hy Primarv Ind Surface High W Saturat Vvater I Sedime Drift De Algal M Iron De Inunda Sparse	Adrology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) ioposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav	ine is requir	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9)) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-S Cray C3)Satu Stun Geor	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Vater I Sedime Drift De Algal M Iron De Inunda Sparse Field Obse	PGY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations:	imagery (B Surface (I	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-S Cray C3)Satu Stun Geor	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Vater I Sedime Drift De Algal M Iron De Inunda Sparse Field Obse	PGY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) ion Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present?	imagery (B [*] e Surface (I fes	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-S Cray C3)Satu Stun Geor	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inundat Sparse Surface Water	PGY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) mt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present?	Imagery (B' e Surface (I res fes	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No <u>×</u> Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-S Cray C3) Satur Stur Geor FAC-	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Vater I Sedime Drift De Algal M Iron De Inunda Sparse Surface Wa Nater Table Saturation F	PGY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) mt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present?	Imagery (B' e Surface (I res fes	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-S Cray C3) Satur Stur Geor FAC-	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inunda Sparse Field Obse Surface Wa Nater Table Saturation R	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present? Present? Dillary frince)	Imagery (B [*] e Surface (I Yes Yes	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No <u>×</u> Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-5 Cray C3) Satun Stun Geor FAC-	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inunda Sparse Field Obse Surface Wa Nater Table Saturation R	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present? Present? Dillary frince)	Imagery (B [*] e Surface (I Yes Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches): Depth (inches): Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-5 Cray C3) Satun Stun Geor FAC-	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Primary Ind Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inunda Sparse Field Obse Surface Wa Water Table Saturation I	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present? Present? Dillary frince)	Imagery (B [*] e Surface (I Yes Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches): Depth (inches): Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-5 Cray C3) Satun Stun Geor FAC-	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Vater I Sedime Drift De Algal M Iron De Inundar Sparse Field Obse Surface Wa Water Table Saturation R Includes co Describe R	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present? Present? Dillary frince)	Imagery (B [*] e Surface (I Yes Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches): Depth (inches): Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-5 Cray C3) Satun Stun Geor FAC-	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLC Vetland Hy Primary Ind Surface High W Saturat Vater I Sedime Drift De Algal M Iron De Inundar Sparse Field Obse Surface Wa Water Table Saturation R Includes co Describe R	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial ly Vegetated Concav rvations: ter Present? Present? Dillary frince)	Imagery (B [*] e Surface (I Yes Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches): Depth (inches): Depth (inches):) Living Roots (((C4) illed Soils (C6)	<u>Secondar</u> Surfa Drair Dry-5 Cray C3) Satun Stun Geor FAC-	ry Indicators (minimum of two require ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 16IN0383 / Wabash Industrial Park	City/County: Wabash / Wab	ash	Sampling Date: 7/20/2016
Applicant/Owner: Banning Engineering		State: IN	Sampling Point: S-8
Investigator(s): Alt & Witzig Consulting	Section, Township, Range	Section 36, T 28	N, R 6 E
Landform (hillslope, terrace, etc.): Wooded Area	Local relief (cond	ave, convex, nor	ne):
Slope (%): Lat: 40.50189 N	Long: -85 48173 W		Datum:
Soil Map Unit Name: Sloan silty clay loam		NWI or WW	I classification: None
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes X No	_ (If no, explain i	n Remarks,)
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Norn	nal Circumstance	s" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If needed	l, explain any ans	swers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	g sampling point loca	tions, transe	cts, important features, etc

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No X No X No X	Is the Sampled Area within a Wetland?	Yes	NoX
Remarks:					

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:30')	Absolute % Cover	Dominant Species?		Dominance Test worksheet: Number of Dominant Species
1. Juglans nigra	75	Y	FACU	That Are OBL, FACW, or FAC: (A)
2. Fraxinus pennsylvanica	10	N	FACW	Total Number of Dominant
	10	N	FAC	Species Across All Strata:5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:0% (A/B)
	95	= Total Cov	rer	Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')			FACU	Total % Cover of: Multiply by:
1. Lonicera morrowii		Y	FACU	OBL species x1 = 0
2,				OBL species x + FACW species 10 x 2 = 20
3				FAC vy species $x_2 =2$
4				FAC species 13 $x_3 = 72$ FACU species 180 $x_4 = 720$
5				FACU species 100 x420 UPL species x5 =0
User Otreture (Distring) 51	25	= Total Co	/er	
Herb Stratum (Plot size: <u>5'</u>)	50	Y	FACU	Column Totals:205 (A)785 (B)
1. Galium triflorum		·	FACU	Prevalence Index = B/A =3.83
2. Festuca spp		·		Hydrophytic Vegetation Indicators:
3_ <u>Ambrosia trifida</u>				Dominance Test is >50%
4				Prevalence Index is ≤3 0 ¹
5				Morphological Adaptations ¹ (Provide supporting
6				data in Remarks or on a separate sheet)
7				Problematic Hydrophytic Vegetation ¹ (Explain)
8				
9				¹ Indicators of hydric soil and wetland hydrology must
10				be present, unless disturbed or problematic
Woody Vine Stratum (Plot size:30')	80	= Total Co	ver	
1 Parthenocissus quinquefolia	5	Y	FACU	Hydrophytic
2				Vegetation
2	5	= Total Co	ver	Present? Yes NoX

Samplin	Point:	S-8
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		adding the particulation of the	f indicators.)
epth Matrix	Redox Features Color (moist) % Type ¹ Loc	Z Texture	Remarks
ches) Color (moist) %	<u>Color (moist)</u> <u>%</u> <u>Type'</u> Loc	Texture	Reindiks
0 - 20 10YR 4/3 100			
	Reduced Matrix, CS=Covered or Coated San		ation: PL=Pore Lining, M=Matrix.
dric Soil Indicators:	Sandy Gloved Matrix (S4)		Prairie Redox (A16)
Histosol (A1) Histic Epipedon (A2)	Sandy Gleyed Matrix (S4) Sandy Redox (S5)		nganese Masses (F12)
Black Histic (A3)	Stripped Matrix (S6)		Explain in Remarks)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)		
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)		
2 cm Muck (A10)	Depleted Matrix (F3)		
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)		
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators	of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (F8)		hydrology must be present,
5 cm Mucky Peat or Peat (S3)		unless	disturbed or problematic
strictive Layer (if observed):			
Туре:			
Depth (inches):		Hydric Soil	Present? Yes <u>No X</u>
emarks:			
DROLOGY			
DROLOGY etland Hydrology Indicators:	ed; check all that apply)	Seconda	ry Indicators (minimum of two require
DROLOGY etland Hydrology Indicators:	ed: check all that apply) Water-Stained Leaves (B9)		ry Indicators (minimum of two require ace Soil Cracks (B6)
DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one is requir		Surf	
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1)	Water-Stained Leaves (B9)	Surf Drai	ace Soil Cracks (B6)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surf Drai Dry-	ace Soil Cracks (B6) nage Patterns (B10)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3)	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) 	Surf Drai Dry- Cray	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2)	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) 	Surf Drai Dry- Cray oots (C3) Satu	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R	Surf Drai Dry- Cra; oots (C3) Satu Stur	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) ıration Visible on Aerial Imagery (C9)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3) _ Algal Mat or Crust (B4)	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) 		ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) iration Visible on Aerial Imagery (C9) ited or Stressed Plants (D1)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3) _ Algal Mat or Crust (B4) _ Iron Deposits (B5)	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) 		ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) irration Visible on Aerial Imagery (C9) ited or Stressed Plants (D1) morphic Position (D2)
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DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7 Sparsely Vegetated Concave Surface (B	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) 		ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) iration Visible on Aerial Imagery (C9) ited or Stressed Plants (D1) morphic Position (D2)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3) _ Algal Mat or Crust (B4) _ Iron Deposits (B5) _ Inundation Visible on Aerial Imagery (B7 _ Sparsely Vegetated Concave Surface (Beld Observations:	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) 		ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) iration Visible on Aerial Imagery (C9) ited or Stressed Plants (D1) morphic Position (D2)
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DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (I eld Observations: urface Water Present? Yes I aturation Present? Yes I aturation Present? Yes I	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) 38) Other (Explain in Remarks) No X Depth (inches): Depth (inches):		ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) iration Visible on Aerial Imagery (C9) ited or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3) _ Algal Mat or Crust (B4) _ Iron Deposits (B5) _ Inundation Visible on Aerial Imagery (B7 _ Sparsely Vegetated Concave Surface (feld Observations: urface Water Present? Yes faturation Present? Yes folded concave for the second data (stream gauge, model)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches): Depth (inches): Depth (inches):		ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) iration Visible on Aerial Imagery (C9) ited or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (I eld Observations: urface Water Present? Yes I aturation Present? Yes I aturation Present? Yes I	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No X Depth (inches): Depth (inches): Depth (inches):		ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) iration Visible on Aerial Imagery (C9) ited or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)

Reset Form

Print Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0383 / Wabash Industrial Park	City/County: Wabash / Wat	bash	Sampling Date: 7/20/2016
Applicant/Owner: Banning Engineering		State: IN	Sampling Point: S-9
Investigator(s) Alt & Witzig Consulting	Section, Township, Range:	Section 36, T 28	N, R 6 E
Landform (hillslope, terrace, etc.): Agricultural Field Boundary	Local relief (con	cave, convex, nor	ne):
Slope (%): Lat: 40.50150 N	Long: -85.48192 W		Datum:
Soil Map Unit Name: Fincastle silt loam		NWI or WV	VI classification: None
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes X No	_ (If no, explain i	n Remarks.)
Are Vegetation, Soil, or Hydrology significant	tly disturbed? Are "Norr	mal Circumstance	s" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If neede	d, explain any ans	swers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showir	ng sampling point loca	tions, transe	cts, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No X No X No X	Is the Sampled Area within a Wetland?	Yes NoX
Remarks:				

VEGETATION - Use scientific names of plants.

	Absolute	Dominant		Dominance Test workshe	et:		
Tree Stratum (Plot size:30')		Species?		Number of Dominant Speci			
1. Populus deltoides	5	Y	FAC	That Are OBL, FACW, or FA	AC:	2	. (A)
2. Salix nigra	5	Y	OBL	Total Number of Dominant			
3. Juglans nigra	5	<u> </u>	FACU	Species Across All Strata:		4	(B)
4				Percent of Dominant Specie	26		
5.	_			That Are OBL, FACW, or F		50%	(A/B)
	15	= Total Cov	ver				-
Sapling/Shrub Stratum (Plot size:15')				Prevalence Index worksh			
1. None				Total % Cover of:			
2				OBL species5			-
3				FACW species			-
4				FAC species 5			-
5				FACU species95	_ x 4 = _	380	_
		= Total Co	ver	UPL species	x 5 =	0	_
Herb Stratum (Plot size:5')				Column Totals:105	_ (A) _	400	(B)
1 Andropogon virginicus	90	Y	FACU				
2				Prevalence Index = I	3/A =	3.81	_
3.				Hydrophytic Vegetation I	ndicators:		
4				Dominance Test is >50			
5				Prevalence Index is ≤3	3.0 ¹		
			-	Morphological Adaptat	ions ¹ (Prov	ide suppo	orting
6			-	data in Remarks or	on a separ	ate sheet	.)
7				Problematic Hydrophy	tic Vegetat	on ¹ (Expl	ain)
8,							
9		1		¹ Indicators of hydric soil ar			must
10				be present, unless disturbe	ed or proble	ematic	
Woody Vine Stratum (Plot size 30')	90	= Total Co	ver				
				Hydrophytic			
				Vegetation			
2		T-1-10-		Present? Yes _	No	» <u> </u>	
		= Total Co	iver				

S	Ο	I	L
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	cription: (Describe	to the dept	th needed to docu	nent the	indicator	or contirn	i the absenc	e or indicators.)
Depth	Matrix			x Feature		1	Tashua	Benerice
(inches)	Color (moist)	%	Color (moist)	%	Type'	_Loc ²	Texture	Remarks
0 - 20	10YR 5/1	85	7.5YR 5/6	15			Si Cl	Redox Concentrations Present
		\equiv		_	=		_	
Type: C=C	oncentration, D=Dep	letion, RM	=Reduced Matrix, C	S=Covere	d or Coate	ed Sand G		ocation: PL=Pore Lining, M=Matrix,
lydric Soil	Indicators:						Indicator	rs for Problematic Hydric Soils ³ :
Histoso	l (A1)			Gleyed Ma				st Prairie Redox (A16)
	pipedon (A2)			Redox (S				Manganese Masses (F12)
	listic (A3)			d Matrix (Othe	r (Explain in Remarks)
	en Sulfide (A4) d Layers (A5)			Gleyed M	neral (F1) atrix (F2)			
	uck (A10)		× Deplete					
	d Below Dark Surfac	e (A11)		Dark Surf				
Thick D	ark Surface (A12)		Deplete	ed Dark Si	urface (F7)		ors of hydrophytic vegetation and
Sandy I	Mucky Mineral (S1)		Redox	Redox Depressions (F8)				and hydrology must be present,
	ucky Peat or Peat (S						unle	ss disturbed or problematic.
Restrictive	Layer (if observed):						and the second s	
1000100100								
Туре:								
			_				Hydric So	oil Present? Yes <u>X</u> No
Type: Depth (ir Remarks:	nches):		_				Hydric So	oil Present? Yes <u>X</u> No
Type: Depth (ir Remarks: YDROLC	OGY /drology Indicators:							
Type: Depth (ir Remarks: YDROLC	DGY						<u>Seco</u> r	ndary Indicators (minimum of two required
Type: Depth (ir Remarks: YDROLC Vetland Hy Primary Ind Surface	DGY /drology Indicators: icators (minimum of c e Water (A1)		Water-Sta	ained Lea			<u>Secor</u> S	ndary Indicators (minimum of two required urface Soil Cracks (B6)
Type: Depth (ir Remarks: YDROLC Vetland Hy Primary Ind Surface High W	DGY /drology Indicators: icators (minimum of c e Water (A1) /ater Table (A2)		Water-Sta Aquatic F	ained Lea auna (B1	3)		<u>Secor</u> S	ndary Indicators (minimum of two required urface Soil Cracks (B6) rainage Patterns (B10)
Type: Depth (ir Remarks: YDROLC Wetland Hy Primary Ind Surface High W Saturat	DGY /drology Indicators: icators (minimum of c e Water (A1) /ater Table (A2) ion (A3)		Water-Sta Aquatic F True Aqu	ained Lea auna (B1) atic Plants	3) s (B14)		<u>Secor</u> S D D	ndary Indicators (minimum of two required urface Soil Cracks (B6) Irainage Patterns (B10) Iry-Season Water Table (C2)
Type: Depth (ir Remarks: YDROLC Vetland Hy Primary Ind Surface High W Saturat Water I	DGY vdrology Indicators: icators (minimum of c e Water (A1) vdret Table (A2) icion (A3) Marks (B1)		Water-Sta Aquatic F True Aqu Hydroger	ained Lea auna (B1) atic Plants Sulfide C	3) s (B14) Ddor (C1)		<u>Secor</u> S D D	ndary Indicators (minimum of two required urface Soil Cracks (B6) Irainage Patterns (B10) Iry-Season Water Table (C2) Irayfish Burrows (C8)
Type: Depth (ir Remarks: YDROLC Wetland Hy Primary Ind Surface High W Saturat Water I Sedime	DGY /drology Indicators: icators (minimum of of e Water (A1) /ater Table (A2) icion (A3) Marks (B1) ent Deposits (B2)		Water-Sta Aquatic F True Aqu Hydroger Oxidized	ained Lea auna (B1) atic Plants Sulfide C Rhizosph	3) s (B14) Ddor (C1) eres on Li		<u>Secon</u> S D D D C ; (C3)S	ndary Indicators (minimum of two required urface Soil Cracks (B6) Irainage Patterns (B10) Iry-Season Water Table (C2) Irayfish Burrows (C8) Iraturation Visible on Aerial Imagery (C9)
Type: Depth (ir Remarks: YDROLC Vetland Hy Primary Ind Saturat Uvater I Saturat Sedime Drift De	DGY /drology Indicators: icators (minimum of c Water (A1) /ater Table (A2) icion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence	ained Lea auna (B1) atic Plants Sulfide C Rhizosph of Reduc	3) s (B14) Odor (C1) eres on Li ced Iron (C	4)	<u>Secon</u> S D D D C ; (C3)S S	ndary Indicators (minimum of two required urface Soil Cracks (B6) Irainage Patterns (B10) Iry-Season Water Table (C2) Irayfish Burrows (C8) Iaturation Visible on Aerial Imagery (C9) Itunted or Stressed Plants (D1)
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Yes _____ No X Depth (inches):

(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

US Army Corps of Engineers

Saturation Present?

Remarks:

No ×

Wetland Hydrology Present? Yes

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0383 / Wabash Industrial Park	City/County: Wabash / Wab	ash	Sampling Date: 7/20/2016
Applicant/Owner: Banning Engineering		State: IN	Sampling Point: S-10
Investigator(s): Alt & Witzig Consulting	Section, Township, Range:	Section 36, T 28 N,	R 6 E
Landform (hillslope, terrace, etc.): Wooded Area	Local relief (conc	ave, convex, none)	· · · · · · · · · · · · · · · · · · ·
Slope (%): Lat: 40.50131 N	Long -85 48210 W		Datum:
Soil Map Unit Name: Sloan silty clay loam		NWI or WWI o	classification; None
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes X No	_ (If no, explain in F	Remarks,)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Norm	nal Circumstances"	present? Yes X No
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? (If needed	l, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locat	tions, transects	s, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No X No X No X	Is the Sampled Area within a Wetland?	Yes	NoX	
Remarks:						

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:30')	Absolute	Dominant Species?		Dominance Test worksheet:		
0	20	Y	FACU	Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
1. Carya ovata 2. Prunus serotina	15	Y	FACU			
3. Juglans nigra	10	Y	FACU	Total Number of Dominant Species Across All Strata:	7	(B)
4. Ulmus rubra			FAC			_ ` `
5.				Percent of Dominant Species That Are OBL, FACW, or FAC:	0%	(A/B)
	50	= Total Cov	er			
Sapling/Shrub Stratum (Plot size:15')	-			Prevalence Index worksheet:		
1. Lonicera morrowii	10	Y	FACU	Total % Cover of:		
2				OBL species >		
3				FACW species >	x 2 =0	
4				FAC species 5		
5				FACU species 5		
		= Total Cov	/er	UPL species 25 ;	x 5 = <u>12</u>	5
Herb Stratum (Plot size 5')				Column Totals:15((A) <u>480</u>) (B)
1. <u>Rubus armeniacus</u>	25	Y			4.47	
2. Gallium triflorum	25	Y	FACU	Prevalence Index = B/A =		-
3	_			Hydrophytic Vegetation Indic	ators:	
4				Dominance Test is >50%		
5				Prevalence Index is ≤3.0 ¹		
6				Morphological Adaptations	s' (Provide su	oporting
7						'
8	3			Problematic Hydrophytic V	regetation (E	хріап)
9						
10				¹ Indicators of hydric soil and we be present, unless disturbed of		
		= Total Co	ver			
Woody Vine Stratum (Plot size: 30')	1.1.1			1		
1 Parthenocissus quinquefolia	5	Y	FACU	Hydrophytic		
2				Vegetation Present? Yes	NoX	
	5	= Total Co	ver			
the second se	e sheet.)					

	ription: (Describe		Dede				
epth nches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ² To	exture	Remarks
0 - 20	10YR 4/3	100					
0-20	101R 4/3	100					
_							
		3					
pe: C=C	oncentration, D=De	pletion, RM=	Reduced Matrix, C	S=Covered or Coated	Sand Grains		ion: PL=Pore Lining, M=Matrix.
	Indicators:				Ir		r Problematic Hydric Soils ³ :
_ Histosol	(A1)		Sandy	Gleyed Matrix (S4)			airie Redox (A16)
Histic Ep	pipedon (A2)			Redox (S5)	-		ganese Masses (F12)
Black Hi	stic (A3)			d Matrix (S6)	-	Other (E:	xplain in Remarks)
_ Hydroge	en Sulfide (A4)			Mucky Mineral (F1)			
Stratified	d Layers (A5)			Gleyed Matrix (F2)			
_ 2 cm Mu	uck (A10)			ed Matrix (F3)			
_ Deplete	d Below Dark Surfa	ce (A11)		Dark Surface (F6)	-		
_ Thick Da	ark Surface (A12)			ed Dark Surface (F7)			f hydrophytic vegetation and
Sandy N	lucky Mineral (S1)		Redox	Depressions (F8)			nydrology must be present,
5 cm Mi	cky Peat or Peat (S	33)				unless d	isturbed or problematic.
_ 0 0.11 1010	sony i bat bi i bat (a						
	Layer (if observed				1.0		
estrictive):	3		Ну	/dric Soil P	resent? Yes <u>No X</u>
estrictive Type: Depth (in emarks:	Layer (if observed):	-		Ну	ydric Soil P	resent? Yes <u>No X</u>
Type: Depth (in emarks:	Layer (if observed ches):):			Hy	ydric Soil P	resent? Yes <u>No X</u>
estrictive Type: Depth (in emarks: 'DROLO /etland Hy	Layer (if observed	12	red: check all that a	addin)	Hy		resent? Yes No _X y Indicators (minimum of two require
Type: Depth (in emarks: DROLO /etland Hy rimary Indi	Layer (if observed ches): GY drology Indicators	12	and the second s	apply) ained Leaves (B9)	Hy	Secondan	
estrictive Type: Depth (in emarks: /DROLO /etland Hy rimary Indi Surface	Ches): Ches): GY drology Indicators cators (minimum of Water (A1)	12	Water-St	a de la companya de l	H	Secondan	y Indicators (minimum of two require
Estrictive Type: Depth (in emarks: //DROLO /etland Hy rimary Indi Surface High Wa	Ches): Ches): GY drology Indicators cators (minimum of Water (A1) ater Table (A2)	12	Water-St Aquatic F	ained Leaves (B9) Fauna (B13)	H	Secondan Surfa Drain:	<u>y Indicators (minimum of two require</u> ce Soil Cracks (B6)
Strictive Type: Depth (in emarks: Depth Second Sec	Ches): Ches): GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3)	12	Water-St Aquatic F True Aqu	ained Leaves (B9) Fauna (B13) µatic Plants (B14)	H	Secondan Surfa Drain: Dry-S	<u>y Indicators (minimum of two require</u> ce Soil Cracks (B6) age Patterns (B10)
Type: Depth (in emarks: DROLO VDROLO Vetland Hy rimary Indi Surface High Wa Saturati Water M	Ches): Ches): GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1)	12	Water-St Aquatic F True Aqu Hydroge	ained Leaves (B9) Fauna (B13) uatic Plants (B14) n Sulfide Odor (C1)		Secondan Surfai Drain: Dry-S Crayf	<u>y Indicators (minimum of two require</u> ce Soil Cracks (B6) age Patterns (B10) ieason Water Table (C2)
Estrictive Type: Depth (in emarks: //DROLO /etland Hy rimary Indi Surface High Wa Saturati Vater M Sedime	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) Aarks (B1) nt Deposits (B2)	12	Water-St Aquatic F True Aqu Hydroget Oxidized	ained Leaves (B9) Fauna (B13) uatic Plants (B14) n Sulfide Odor (C1) Rhizospheres on Livir	ng Roots (C3)	Secondan Surfa Drain: Dry-S Crayf Satur	y Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) ieason Water Table (C2) ish Burrows (C8) ation Visible on Aerial Imagery (C9)
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APPENDIX C

Soil Report



USDA United States Department of Agriculture



Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Wabash County, Indiana



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http:// offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Cy—Cyclone silt loam, 0 to 2 percent slopes	17
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soillandscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

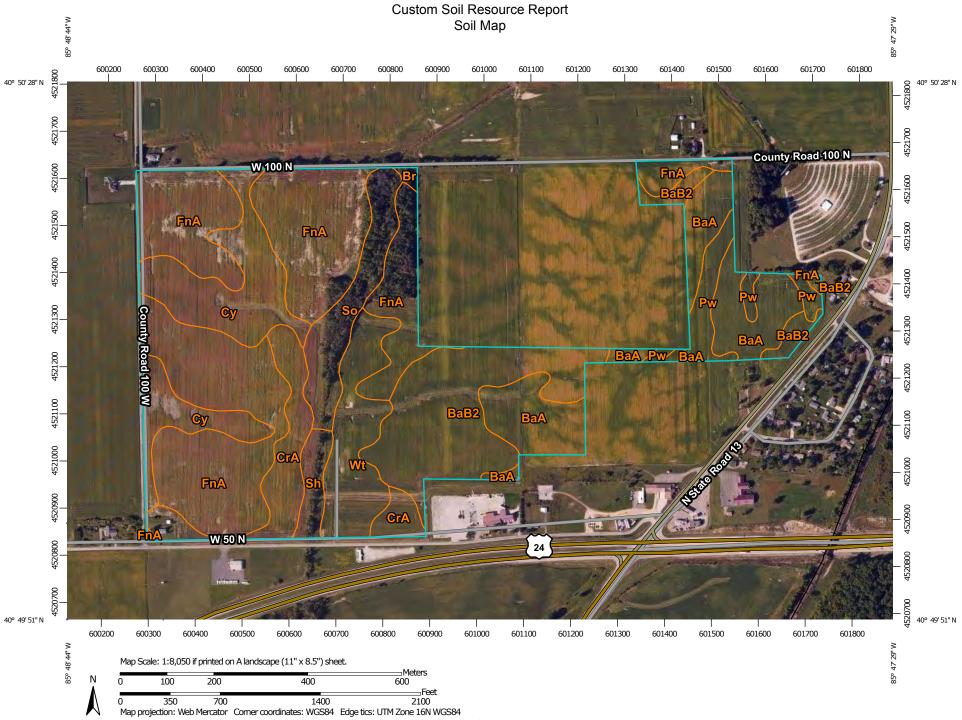
While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



	MAP L	EGEND		MAP INFORMATION		
Area of Int	terest (AOI)	333	Spoil Area	The soil surveys that comprise your AOI were mapped at 1:15,800		
	Area of Interest (AOI)	۵	Stony Spot			
Soils	Soil Map Unit Polygons	â	Very Stony Spot	Warning: Soil Map may not be valid at this scale.		
~	Soil Map Unit Lines	\$	Wet Spot	Enlargement of maps beyond the scale of mapping can cause		
	·	\triangle	Other	misunderstanding of the detail of mapping and accuracy of soil lir placement. The maps do not show the small areas of contrasting		
	Soil Map Unit Points		Special Line Features	soils that could have been shown at a more detailed scale.		
Special (0)	Point Features Blowout	Water Fea	atures			
-	Borrow Pit	\sim	Streams and Canals	Please rely on the bar scale on each map sheet for map		
		Transpor	tation	measurements.		
×	Clay Spot	+++	Rails	Source of Map: Natural Resources Conservation Service		
\diamond	Closed Depression	~	Interstate Highways	Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov		
X	Gravel Pit	~	US Routes	Coordinate System: Web Mercator (EPSG:3857)		
00	Gravelly Spot	\sim	Major Roads	Maps from the Web Soil Survey are based on the Web Mercator		
0	Landfill	~	Local Roads	projection, which preserves direction and shape but distorts		
٨.	Lava Flow	Backgrou	ind	distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accura		
عله	Marsh or swamp		Aerial Photography	calculations of distance or area are required.		
R	Mine or Quarry			This product is generated from the USDA-NRCS certified data as		
0	Miscellaneous Water			the version date(s) listed below.		
0	Perennial Water			Soil Survey Area: Wabash County, Indiana		
\vee	Rock Outcrop			Survey Area Data: Version 19, Sep 11, 2015		
+	Saline Spot					
°°.	Sandy Spot			Soil map units are labeled (as space allows) for map scales 1:50,00 or larger.		
-	Severely Eroded Spot					
0	Sinkhole			Date(s) aerial images were photographed: Sep 17, 2011—Mai 14, 2012		
>	Slide or Slip					
ø	Sodic Spot			The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shiftin of map unit boundaries may be evident.		

Wabash County, Indiana (IN169)						
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI			
BaA	Blount silt loam, 0 to 2 percent slopes	19.1	11.9%			
BaB2	Blount silt loam, 1 to 4 percent slopes, eroded	23.8	14.8%			
Br	Brookston loam	0.4	0.2%			
CrA	Crosby silt loam, 0 to 3 percent slopes	10.7	6.6%			
Су	Cyclone silt loam, 0 to 2 percent slopes	19.0	11.9%			
FnA	Fincastle silt loam, Tipton Till Plain, 0 to 2 percent slopes	59.1	36.8%			
Pw	Pewamo silty clay loam, 0 to 1 percent slopes	5.1	3.2%			
Sh	Shoals silt loam, 0 to 2 percent slopes, occasionally flooded	2.9	1.8%			
So	Sloan silty clay loam, frequently flooded	9.0	5.6%			
Wt	Whitaker loam	11.3	7.0%			
Totals for Area of Interest		160.3	100.0%			

Map Unit Legend

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different

management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Wabash County, Indiana

BaA—Blount silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t6kp Elevation: 700 to 1,200 feet Mean annual precipitation: 34 to 42 inches Mean annual air temperature: 46 to 52 degrees F Frost-free period: 140 to 180 days Farmland classification: Prime farmland if drained

Map Unit Composition

Blount and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blount

Setting

Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Footslope Landform position (three-dimensional): Interfluve Down-slope shape: Linear Across-slope shape: Linear Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: silt loam *Bt - 10 to 33 inches:* silty clay *BC - 33 to 39 inches:* clay loam *Cd - 39 to 79 inches:* clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 31 to 54 inches to densic material
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: D

Minor Components

Haskins

Percent of map unit: 6 percent

Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Footslope Landform position (three-dimensional): Interfluve Down-slope shape: Linear Across-slope shape: Linear

Pewamo

Percent of map unit: 5 percent Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Concave, linear Across-slope shape: Concave, linear

Glynwood

Percent of map unit: 4 percent Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, crest, nose slope Down-slope shape: Convex Across-slope shape: Convex, linear

BaB2—Blount silt loam, 1 to 4 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t6kn Elevation: 640 to 1,150 feet Mean annual precipitation: 34 to 42 inches Mean annual air temperature: 46 to 52 degrees F Frost-free period: 140 to 180 days Farmland classification: Prime farmland if drained

Map Unit Composition

Blount and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blount

Setting

Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Footslope, backslope, summit Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Linear Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 8 inches: silt loam Bt - 8 to 26 inches: silty clay BC - 26 to 30 inches: clay loam Cd - 30 to 79 inches: clay loam

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: 24 to 40 inches to densic material
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: D

Minor Components

Haskins

Percent of map unit: 6 percent Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Footslope, backslope Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Linear

Glynwood

Percent of map unit: 5 percent Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Footslope, backslope, shoulder Landform position (three-dimensional): Side slope, nose slope Down-slope shape: Linear, convex Across-slope shape: Linear

Pewamo

Percent of map unit: 4 percent Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Footslope, backslope, toeslope Landform position (three-dimensional): Side slope, base slope Down-slope shape: Linear Across-slope shape: Linear, concave

Br—Brookston loam

Map Unit Setting

National map unit symbol: 5dpr

Elevation: 360 to 1,530 feet *Mean annual precipitation:* 34 to 40 inches *Mean annual air temperature:* 47 to 51 degrees F *Frost-free period:* 170 to 185 days *Farmland classification:* Prime farmland if drained

Map Unit Composition

Brookston and similar soils: 80 percent Minor components: 20 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brookston

Setting

Landform: Depressions on till plains Landform position (two-dimensional): Toeslope, footslope Down-slope shape: Linear Across-slope shape: Concave Parent material: Loamy till

Typical profile

Ap - 0 to 9 inches: loam *Btg* - 9 to 48 inches: clay loam *BC* - 48 to 68 inches: loam *C* - 68 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 35 percent
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B/D Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Minor Components

Rensselaer

Percent of map unit: 8 percent Landform: Depressions on outwash plains, depressions on till plains Landform position (two-dimensional): Toeslope, footslope Down-slope shape: Linear Across-slope shape: Concave Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Crosier

Percent of map unit: 8 percent

Landform: Till plains Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Other vegetative classification: Trees/Timber (Woody Vegetation), Trees/Timber (Woody Vegetation)

Goodell

Percent of map unit: 4 percent Landform: Depressions on till plains Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Concave Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

CrA—Crosby silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5dpt Elevation: 530 to 1,050 feet Mean annual precipitation: 36 to 44 inches Mean annual air temperature: 49 to 54 degrees F Frost-free period: 180 to 190 days Farmland classification: Prime farmland if drained

Map Unit Composition

Crosby and similar soils: 90 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Crosby

Setting

Landform: Till plains Landform position (two-dimensional): Backslope, shoulder, footslope, summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear Across-slope shape: Linear Parent material: Loess over loamy till

Typical profile

Ap - 0 to 10 inches: silt loam E - 10 to 13 inches: silt loam Bt,BC - 13 to 25 inches: clay loam C - 25 to 60 inches: loam

Properties and qualities

Slope: 0 to 3 percent *Depth to restrictive feature:* 20 to 40 inches to densic material

Custom Soil Resource Report

Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: C/D Other vegetative classification: Trees/Timber (Woody Vegetation)

Minor Components

Miami

Percent of map unit: 7 percent *Other vegetative classification:* Trees/Timber (Woody Vegetation)

Brookston

Percent of map unit: 3 percent Landform: Depressions Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Cy—Cyclone silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2thyf Elevation: 640 to 1,150 feet Mean annual precipitation: 37 to 46 inches Mean annual air temperature: 48 to 55 degrees F Frost-free period: 145 to 180 days Farmland classification: Prime farmland if drained

Map Unit Composition

Cyclone and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Cyclone

Setting

Landform: Depressions on till plains, swales on till plains, flats on till plains Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Dip Down-slope shape: Concave Across-slope shape: Concave, linear Parent material: Loess over loamy till

Typical profile

Ap - 0 to 14 inches: silt loam Btg1 - 14 to 20 inches: silt loam Btg2 - 20 to 49 inches: silty clay loam 2Bt3 - 49 to 60 inches: loam 2C - 60 to 79 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B/D

Minor Components

Fincastle

Percent of map unit: 5 percent Landform: Till plains Landform position (two-dimensional): Summit, footslope, backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear

Xenia

Percent of map unit: 5 percent Landform: Till plains Landform position (two-dimensional): Shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear Across-slope shape: Linear

Sugarvalley

Percent of map unit: 3 percent Landform: Flats on ground moraines Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Rise Down-slope shape: Linear Across-slope shape: Convex

Morningsun

Percent of map unit: 2 percent Landform: Flats on ground moraines Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Rise *Down-slope shape:* Linear *Across-slope shape:* Convex

FnA—Fincastle silt loam, Tipton Till Plain, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2rkb8 Elevation: 400 to 1,010 feet Mean annual precipitation: 37 to 45 inches Mean annual air temperature: 50 to 55 degrees F Frost-free period: 170 to 200 days Farmland classification: Prime farmland if drained

Map Unit Composition

Fincastle and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Fincastle

Setting

Landform: Till plains Landform position (two-dimensional): Summit, footslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear Parent material: Loess over loamy till

Typical profile

 $\begin{array}{l} Ap - 0 \ to \ 10 \ inches: \ silt \ loam \\ E - 10 \ to \ 13 \ inches: \ silt \ loam \\ Bt1 - 13 \ to \ 27 \ inches: \ silty \ clay \ loam \\ 2Bt2 - 27 \ to \ 50 \ inches: \ clay \ loam \\ 2BC - 50 \ to \ 59 \ inches: \ loam \\ 2Cd - 59 \ to \ 79 \ inches: \ loam \end{array}$

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to densic material
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B/D

Minor Components

Cyclone

Percent of map unit: 10 percent Landform: Depressions on till plains, swales on till plains, flats on till plains Landform position (two-dimensional): Toeslope, summit Landform position (three-dimensional): Dip Down-slope shape: Concave Across-slope shape: Concave, linear

Mahalasville

Percent of map unit: 5 percent Landform: Depressions on till plains, swales on till plains, flats on till plains Landform position (two-dimensional): Toeslope, summit Landform position (three-dimensional): Dip Down-slope shape: Concave Across-slope shape: Concave, linear

Pw—Pewamo silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t6lv Elevation: 700 to 1,300 feet Mean annual precipitation: 32 to 42 inches Mean annual air temperature: 48 to 54 degrees F Frost-free period: 140 to 180 days Farmland classification: Prime farmland if drained

Map Unit Composition

Pewamo and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Pewamo

Setting

Landform: Depressions on till plains, drainageways on till plains Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Concave, linear Across-slope shape: Concave Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 11 inches: silty clay loam

Btg1 - 11 to 34 inches: silty clay *Btg2 - 34 to 47 inches:* silty clay *BCg - 47 to 57 inches:* clay loam *Cg - 57 to 79 inches:* clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: C/D

Minor Components

Blount

Percent of map unit: 9 percent Landform: End moraines on till plains, ground moraines on till plains Landform position (two-dimensional): Footslope Landform position (three-dimensional): Interfluve Down-slope shape: Linear Across-slope shape: Linear

Minster

Percent of map unit: 6 percent Landform: Depressions on till plains Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave

Sh—Shoals silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 2t6lp Elevation: 340 to 1,000 feet Mean annual precipitation: 34 to 42 inches Mean annual air temperature: 48 to 55 degrees F Frost-free period: 140 to 180 days Farmland classification: Prime farmland if drained

Map Unit Composition

Shoals and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shoals

Setting

Landform: Flood plains Landform position (three-dimensional): Dip Down-slope shape: Linear Across-slope shape: Linear Parent material: Loamy alluvium

Typical profile

Ap - 0 to 10 inches: silt loam B - 10 to 42 inches: silt loam C - 42 to 79 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 22 percent
Available water storage in profile: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B/D

Minor Components

Sloan

Percent of map unit: 8 percent Landform: Flood plains Landform position (three-dimensional): Dip Down-slope shape: Linear Across-slope shape: Linear

Eel

Percent of map unit: 7 percent Landform: Flood plains Landform position (three-dimensional): Rise Down-slope shape: Linear Across-slope shape: Linear

So-Sloan silty clay loam, frequently flooded

Map Unit Setting

National map unit symbol: 5ds5
Elevation: 640 to 1,150 feet
Mean annual precipitation: 34 to 39 inches
Mean annual air temperature: 47 to 52 degrees F
Frost-free period: 165 to 175 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Sloan and similar soils: 100 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Sloan

Setting

Landform: Depressions on flood plains Landform position (two-dimensional): Footslope Down-slope shape: Concave Across-slope shape: Linear Parent material: Loamy alluvium

Typical profile

Ap - 0 to 8 inches: silty clay loam A - 8 to 12 inches: silty clay loam A2 - 12 to 16 inches: silty clay loam Bg1,Bg2 - 16 to 32 inches: loam Cg1 - 32 to 42 inches: loam Cg2 - 42 to 60 inches: stratified sand to loamy sand to loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 30 percent
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: B/D Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)

Wt—Whitaker loam

Map Unit Setting

National map unit symbol: 5dsb Elevation: 580 to 1,200 feet Mean annual precipitation: 32 to 42 inches Mean annual air temperature: 46 to 51 degrees F Frost-free period: 170 to 185 days Farmland classification: Prime farmland if drained

Map Unit Composition

Whitaker and similar soils: 70 percent *Minor components:* 30 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Whitaker

Setting

Landform: Outwash plains, moraines, stream terraces Landform position (two-dimensional): Footslope, toeslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Concave Parent material: Loamy outwash

Typical profile

Ap - 0 to 17 inches: loam Btg - 17 to 39 inches: clay loam BC - 39 to 48 inches: sandy loam C - 48 to 86 inches: stratified loamy sand to silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Available water storage in profile: High (about 10.9 inches)

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B/D Other vegetative classification: Trees/Timber (Woody Vegetation)

Minor Components

Crosier

Percent of map unit: 25 percent Landform: Moraines, till plains Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Other vegetative classification: Trees/Timber (Woody Vegetation)

Selfridge

Percent of map unit: 5 percent Landform: Till plains Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Other vegetative classification: Trees/Timber (Woody Vegetation)

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APPENDIX D

Site Photographs

Photograph # 1	Description: Drainage Feature #1 located on the northeast per	ortion of the Site.
Project # 16IN0383	Project Name: Wabash Industrial Park	Date: 7/20/2016













