



Juliet Solar

Exhibit E

Ecological Assessment

Part 4 of 4

Case No. 20-1760-EL-BGN

Wetland and Waterbody Delineation Report
Juliet Solar Project

APPENDIX

A

PHOTOGRAPHS OF SURVEY AREA
AND VICINITY



DP001, View Looking North



DP001, View Looking South



DP002, View Looking North



DP002, View Looking South



DP003, View Looking North



DP003, View Looking South



DP004, View Looking North



DP004, View Looking South



DP005, View Looking North



DP005, View Looking South



DP006, View Looking North



DP006, View Looking South



DP007, View Looking North



DP007, View Looking South



DP008, View Looking North



DP008, View Looking South



DP009, View Looking North



DP009, View Looking South



DP010, View Looking North



DP010, View Looking South



DP011, View Looking North



DP011, View Looking South



DP012, View Looking North



DP012, View Looking South



DP101, View Looking North



DP101, View Looking South



DP102, View Looking North



DP102, View Looking South



DP103, View Looking North



DP103, View Looking South



DP104, View Looking North



DP104, View Looking South



DP105, View Looking North



DP105, View Looking South



DP106, View Looking North



DP106, View Looking South



DP107, View Looking North



DP107, View Looking South



DP108, View Looking North



DP108, View Looking South



DP109, View Looking North



DP109, View Looking South



Stream s001, View Looking Upstream



Stream s001, View Looking Downstream



Stream s002, View Looking Upstream



Stream s002, View Looking Downstream



Stream s003, View Looking Upstream



Stream s003, View Looking Downstream



Stream s004, View Looking Upstream



Stream s004, View Looking Downstream



Stream s101, View Looking Upstream



Stream s101, View Looking Downstream

Site Photographs

Juliet Solar Project
Regulated Waters Delineation Report
Juliet Energy Project, LLC
Wood County, Ohio

Project Number:
E319302602



3901 Industrial Blvd. Indianapolis, IN 46254 USA
Phone (+1) 317-388-1982 Fax (+1) 317-388-1982
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Stream s102, View Looking Upstream



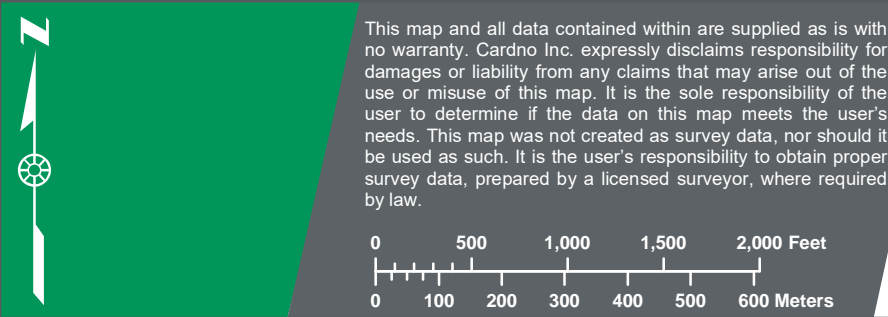
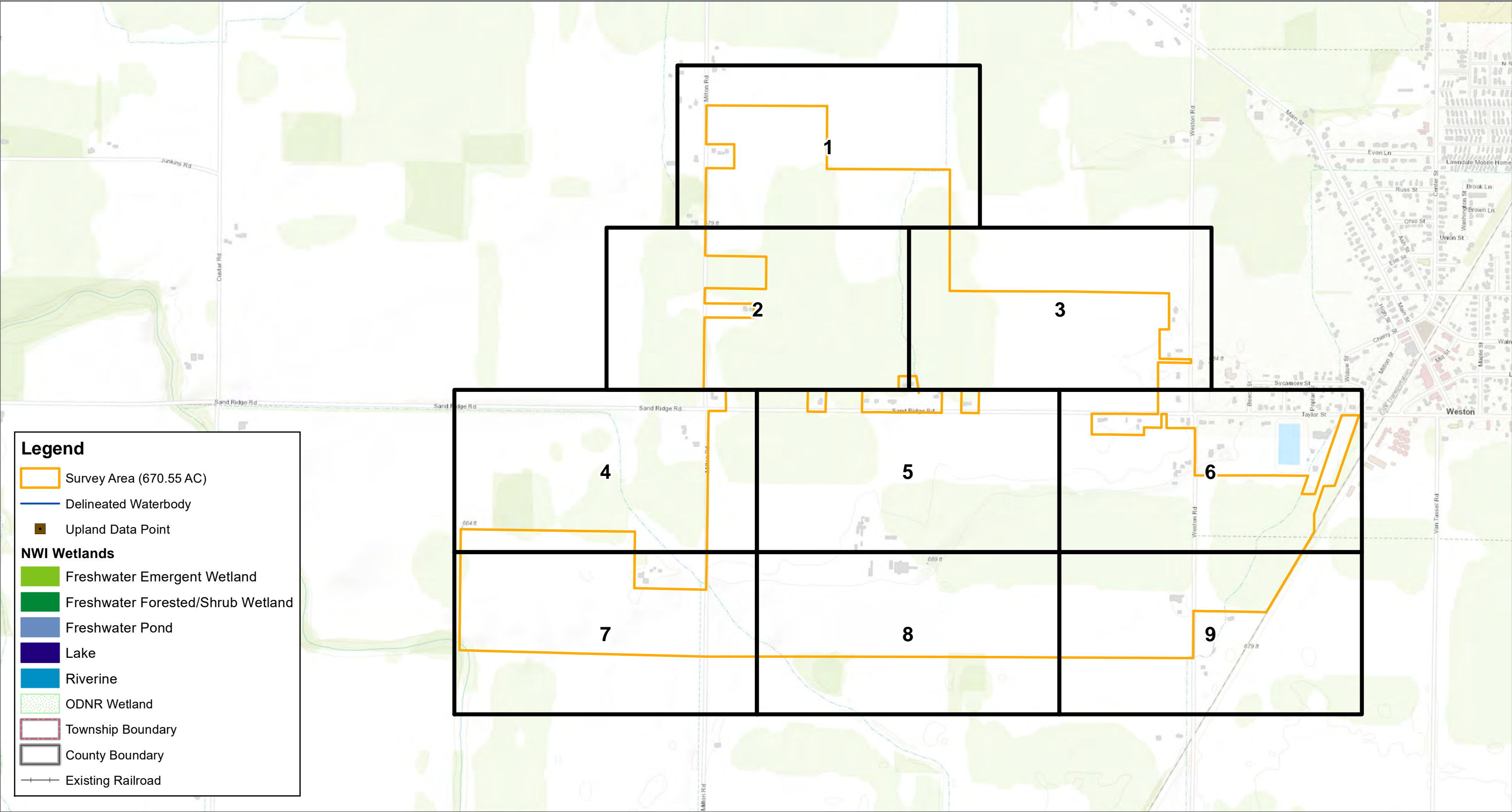
Stream s102, View Looking Downstream

Wetland and Waterbody Delineation Report
Juliet Solar Project

APPENDIX

B

WETLAND AND WATERBODY MAPS



This map and all data contained within are supplied as is with no warranty. Cardno Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Delineated Features - Overview

Juliet Solar Project
Wood County, Ohio



121 Continental Drive, Newark, DE 19713 USA
Phone (+1) 302-395-1919 Fax (+1) 302-395-1920
www.cardno.com





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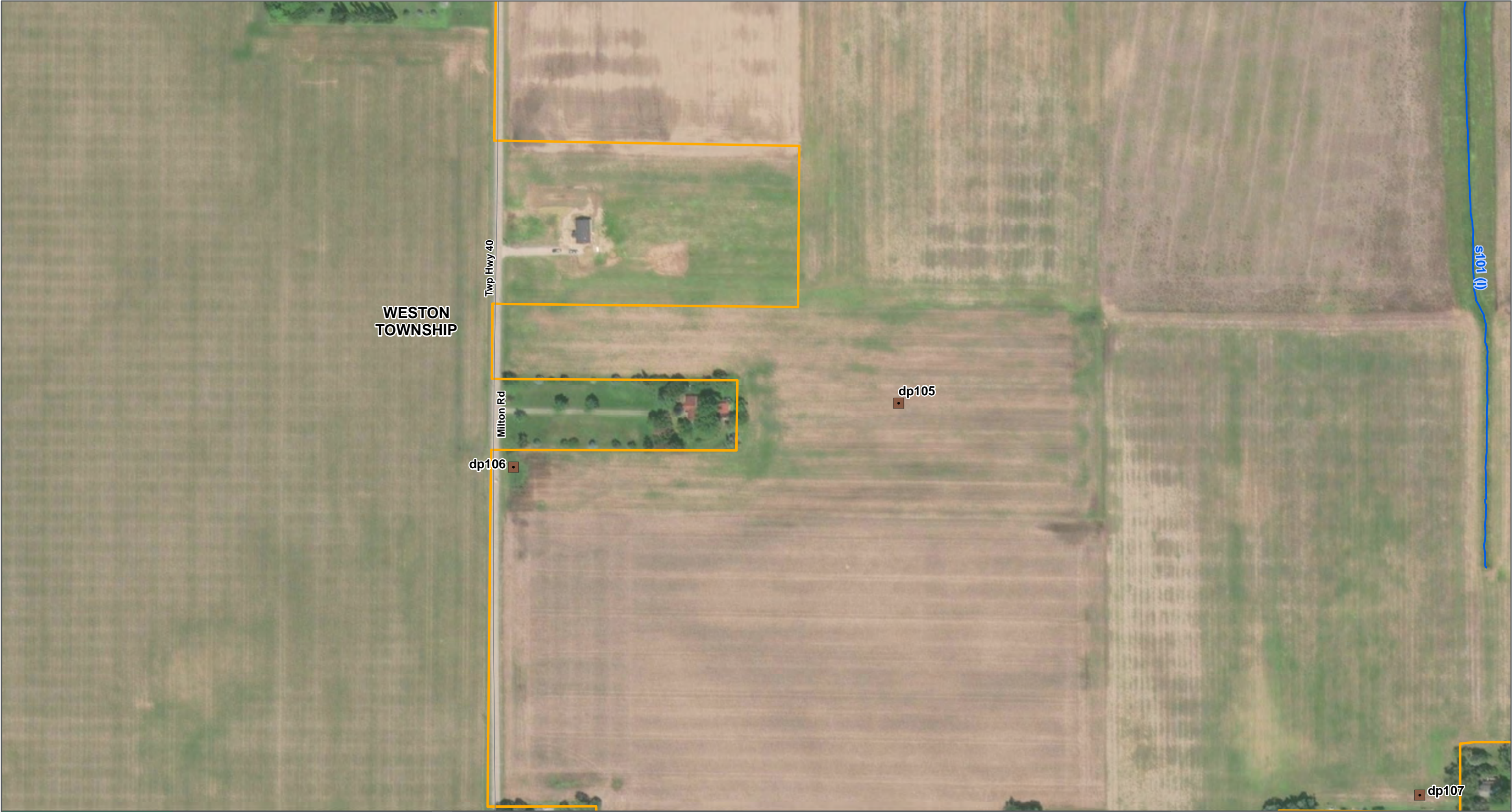
0 100 200 300 400 Feet
0 25 50 75 100 125 Meters

Delineated Features (Sheet 1 of 9)

Juliet Solar Project
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0 100 200 300 400 Feet
0 25 50 75 100 125 Meters

Delineated Features (Sheet 2 of 9)

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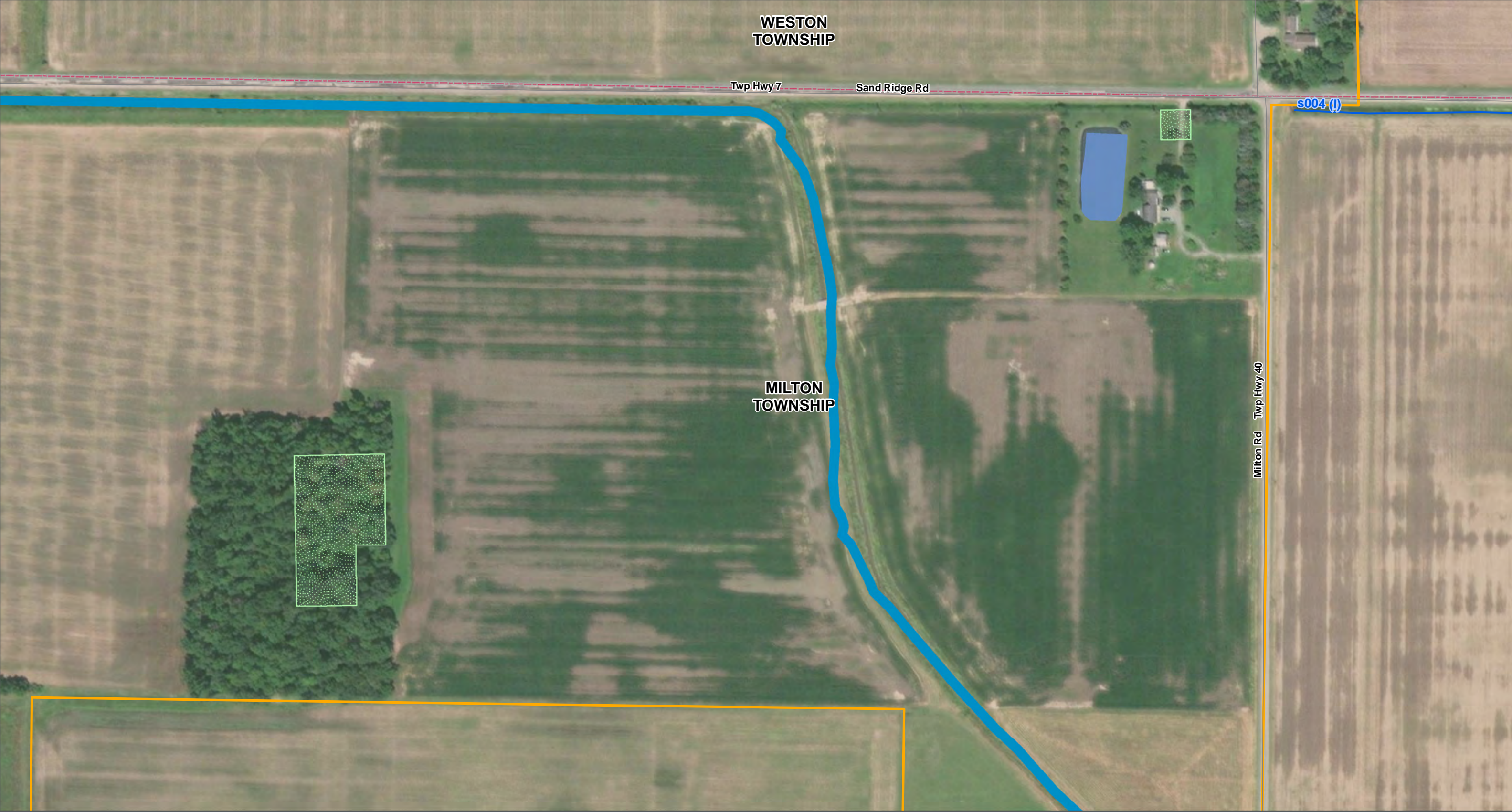
0 100 200 300 400 Feet
0 25 50 75 100 125 Meters

Delineated Features (Sheet 3 of 9)

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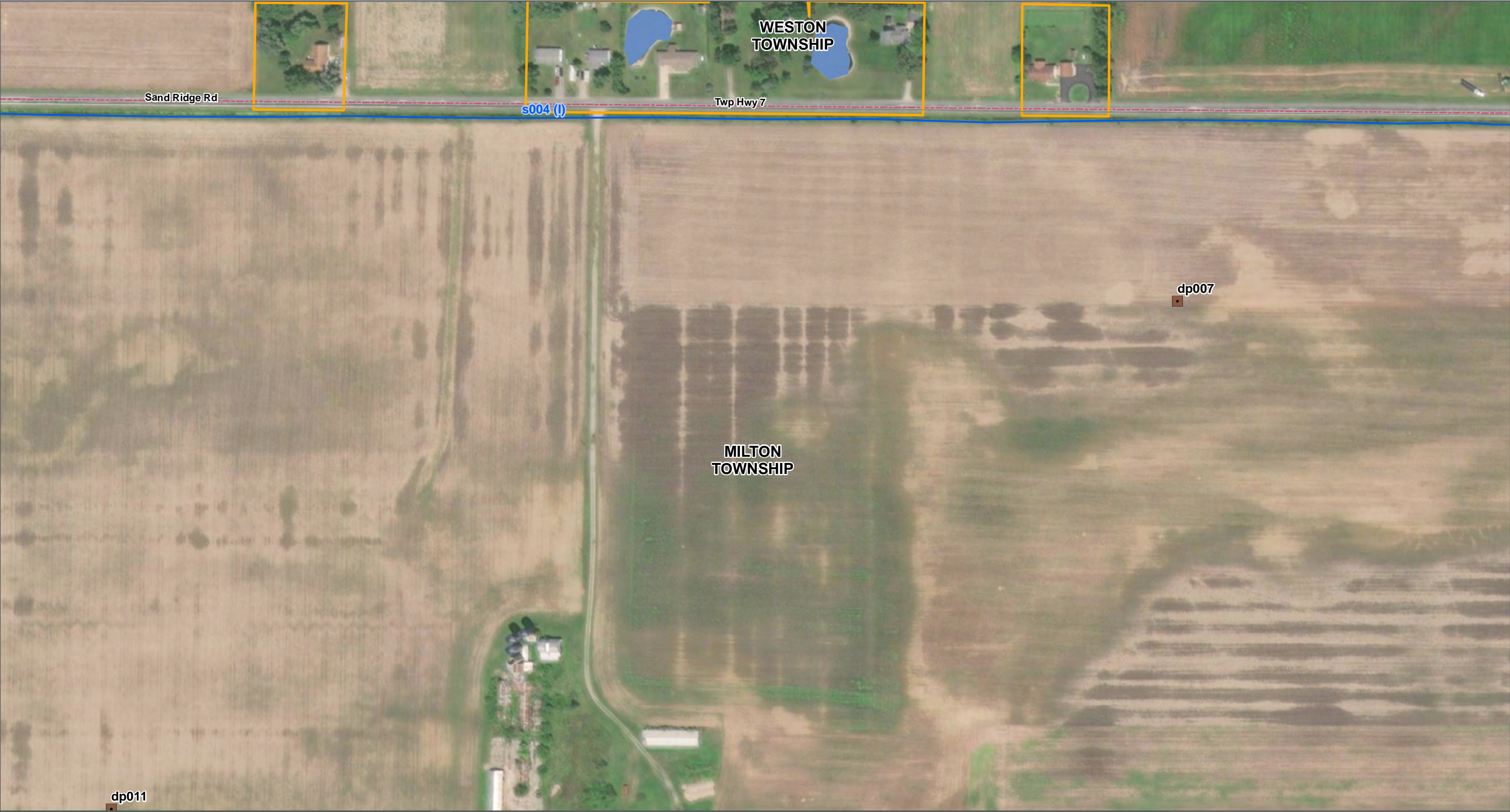
0 100 200 300 400 Feet
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Delineated Features (Sheet 4 of 9)

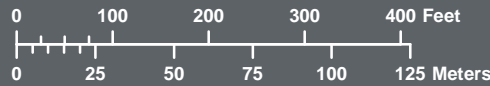
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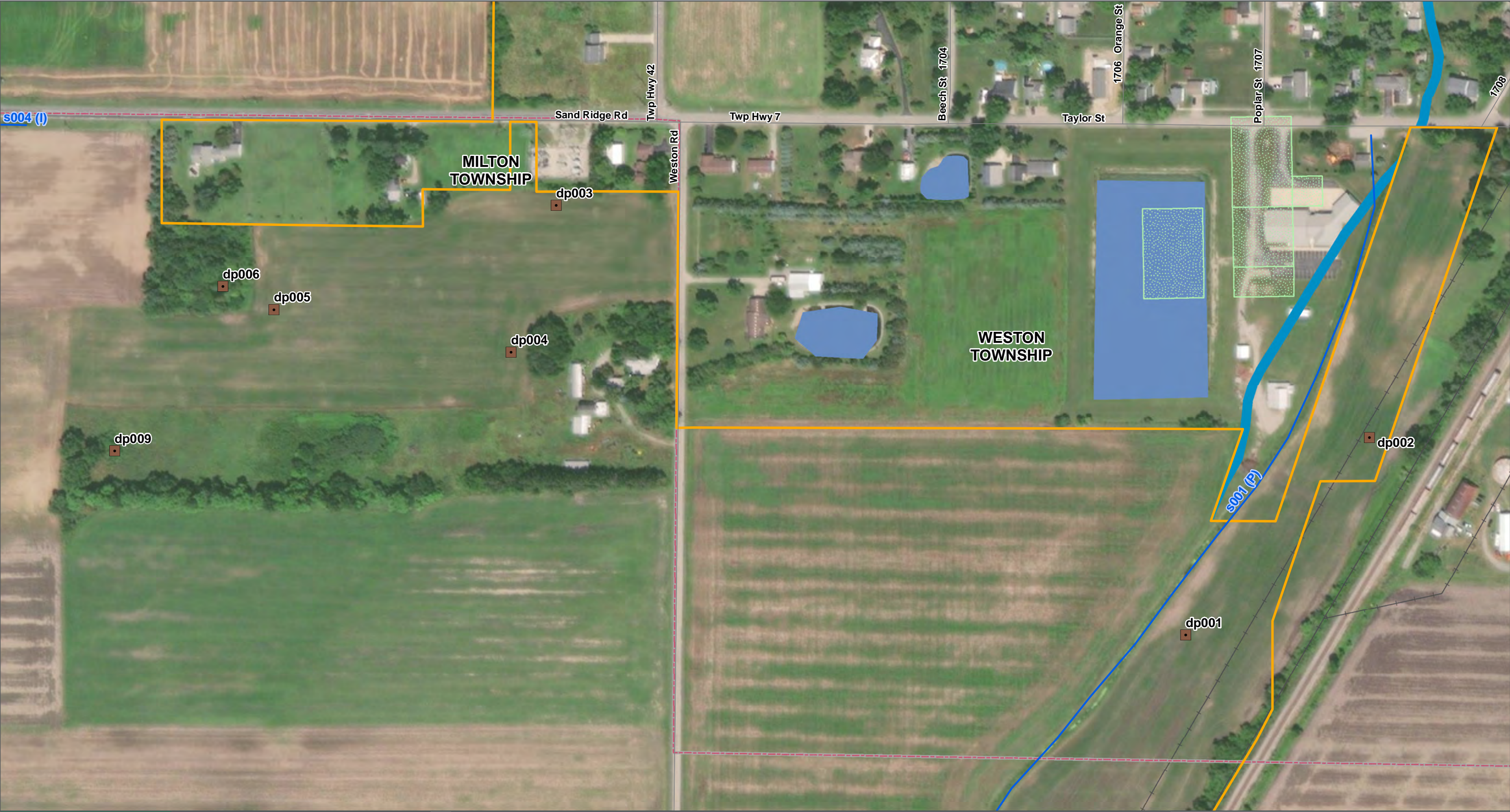


Delineated Features (Sheet 5 of 9)

Juliet Solar Project
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0 100 200 300 400 Feet
0 25 50 75 100 125 Meters

Delineated Features (Sheet 6 of 9)

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0 100 200 300 400 Feet

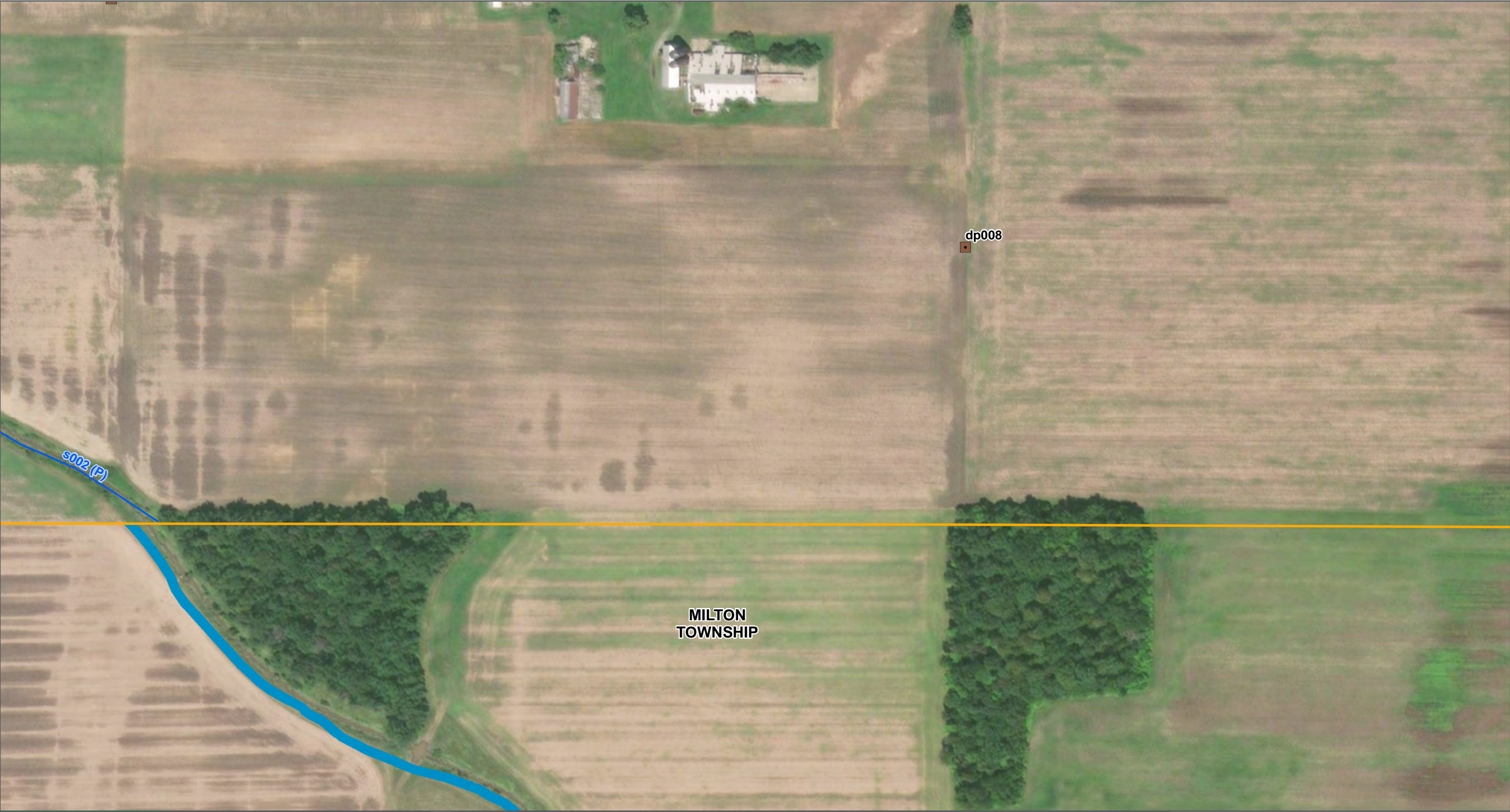
0 25 50 75 100 125 Meters

Delineated Features (Sheet 7 of 9)

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0 100 200 300 400 Feet

0 25 50 75 100 125 Meters

Delineated Features (Sheet 8 of 9)

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0 100 200 300 400 Feet

0 25 50 75 100 125 Meters

Delineated Features (Sheet 9 of 9)

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Wood County, Ohio



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Wetland and Waterbody Delineation Report
Juliet Solar Project

APPENDIX

C

USACE WETLAND DELINEATION
FORMS

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp001
 Investigator(s): B Hess Section, Township, Range: S002 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.339964 Long: -83.801216 Datum: NAD83
 Soil Map Unit Name: Wauseon fine sandy loam, 0 to 1 percent slopes (WyA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp001

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>10</u> (A)</td> <td><u>50</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>10</u> (A)	<u>50</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>10</u> (A)	<u>50</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Triticum aestivum</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>																	
2. _____																				
3. _____																				
4. _____																				
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6. _____																				
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16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>10</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes <u> </u> No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
----------------------	-----	----	---

Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp002
 Investigator(s): B Hess Section, Township, Range: S002 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.341165 Long: -83.799779 Datum: NAD83
 Soil Map Unit Name: Hoytville clay loam, 0 to 1 percent slopes (HoA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp002

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>10</u> (A)</td> <td><u>50</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>10</u> (A)	<u>50</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>10</u> (A)	<u>50</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
Herb Stratum (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Triticum aestivum</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>																	
2. _____																				
3. _____																				
4. _____																				
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16. _____																				
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18. _____																				
19. _____																				
20. _____																				
	<u>10</u>	= Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) <div style="height: 100px; border: 1px solid black;"></div>																				

SOIL

Sampling Point: dp002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- ____ Stripped Matrix (S6)
- ____ Loamy Mucky Mineral (F1)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp003
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.342483 Long: -83.806275 Datum: NAD83
 Soil Map Unit Name: Wauseon fine sandy loam, deep to till, 0 to 1 percent slopes (WnA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp003

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>80</u></td> <td>x 5 = <u>400</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>660</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.55</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>80</u>	x 5 = <u>400</u>	Column Totals: <u>145</u> (A)	<u>660</u> (B)	Prevalence Index = B/A = <u>4.55</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>65</u>	x 4 = <u>260</u>																			
UPL species <u>80</u>	x 5 = <u>400</u>																			
Column Totals: <u>145</u> (A)	<u>660</u> (B)																			
Prevalence Index = B/A = <u>4.55</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Zea mays</u>	<u>75</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Stellaria media</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Lamium amplexicaule</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
4. <u>Poa annua</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____																				
6. _____																				
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18. _____																				
19. _____																				
20. _____																				
	<u>145</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp003

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp004
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.341599 Long: -83.806617 Datum: NAD83
 Soil Map Unit Name: Wauseon fine sandy loam, deep to till, 0 to 1 percent slopes (WnA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) </div> <div style="width: 48%;"> <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		Secondary Indicators (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp004

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>90</u></td> <td>x 5 = <u>450</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>585</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.68</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>90</u>	x 5 = <u>450</u>	Column Totals: <u>125</u> (A)	<u>585</u> (B)	Prevalence Index = B/A = <u>4.68</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
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UPL species <u>90</u>	x 5 = <u>450</u>																			
Column Totals: <u>125</u> (A)	<u>585</u> (B)																			
Prevalence Index = B/A = <u>4.68</u>																				
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2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Zea mays</u>	<u>75</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Stellaria media</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Lamium amplexicaule</u>	<u>15</u>	<u>No</u>	<u>UPL</u>																	
4. <u>Ranunculus abortivus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. _____																				
6. _____																				
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8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
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16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>125</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes _____ No <u>X</u> </div>																

SOIL

Sampling Point: dp004

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp005
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.341834 Long: -83.808508 Datum: NAD83
 Soil Map Unit Name: Rimer and Tedrow, till substratum, loamy fine sands, 0 to 2 percent slopes (RfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp005

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			= Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>75</u></td> <td>x 5 = <u>375</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>595</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.58</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>75</u>	x 5 = <u>375</u>	Column Totals: <u>130</u> (A)	<u>595</u> (B)	Prevalence Index = B/A = <u>4.58</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>75</u>	x 5 = <u>375</u>																			
Column Totals: <u>130</u> (A)	<u>595</u> (B)																			
Prevalence Index = B/A = <u>4.58</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			= Total Cover																	
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Zea mays</u>	<u>75</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Stellaria media</u>	<u>20</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Lepidium virginicum</u>	<u>20</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Poa annua</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Digitaria sanguinalis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
13. _____	_____	_____	_____																	
14. _____	_____	_____	_____																	
15. _____	_____	_____	_____																	
16. _____	_____	_____	_____																	
17. _____	_____	_____	_____																	
18. _____	_____	_____	_____																	
19. _____	_____	_____	_____																	
20. _____	_____	_____	_____																	
			<u>130</u> = Total Cover																	
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
			= Total Cover																	
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) <div style="height: 100px; border: 1px solid black;"></div>																				

SOIL

Sampling Point: dp005

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp006
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): convex
 Slope (%): 1% Lat: 41.341969 Long: -83.808917 Datum: NAD83
 Soil Map Unit Name: Rimer and Tedrow, till substratum, loamy fine sands, 0 to 2 percent slopes (RfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp006

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>30 ft.</u>)																				
1. <u>Morus alba</u>	25	Yes	FACU	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)																
2. <u>Acer saccharinum</u>	20	Yes	FACW																	
3. <u>Celtis occidentalis</u>	10	No	FAC																	
4. <u>Thuja occidentalis</u>	10	No	FACW																	
5. <u>Acer negundo</u>	5	No	FAC																	
6. _____																				
7. _____																				
	70	= Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>70</u></td> <td>x 5 = <u>350</u></td> </tr> <tr> <td>Column Totals: <u>160</u> (A)</td> <td><u>620</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.88</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>70</u>	x 5 = <u>350</u>	Column Totals: <u>160</u> (A)	<u>620</u> (B)	Prevalence Index = B/A = <u>3.88</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>30</u>	x 4 = <u>120</u>																			
UPL species <u>70</u>	x 5 = <u>350</u>																			
Column Totals: <u>160</u> (A)	<u>620</u> (B)																			
Prevalence Index = B/A = <u>3.88</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)																				
1. <u>Lonicera maackii</u>	30	Yes	UPL																	
2. <u>Celtis occidentalis</u>	5	No	FAC																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	35	= Total Cover																		
Herb Stratum (Plot size: <u>5 ft.</u>)																				
1. <u>Euonymus fortunei</u>	40	Yes	UPL																	
2. <u>Toxicodendron radicans</u>	10	No	FAC																	
3. <u>Hesperis matronalis</u>	5	No	FACU																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
9. _____																				
10. _____																				
11. _____																				
12. _____																				
13. _____																				
14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	55	= Total Cover		Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>30 ft.</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover		Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes <u> </u> No <u> X </u> </div>																
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: dp006

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp007
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.341830 Long: -83.813339 Datum: NAD83
 Soil Map Unit Name: Merrill-Aurand complex, 0 to 1 percent slopes (MfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: dp007

Northcentral Great Lakes Region - Version 2.0

SOIL

Sampling Point: dp007

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- ____ Stripped Matrix (S6)
- ____ Loamy Mucky Mineral (F1)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp008
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.337277 Long: -83.814934 Datum: NAD83
 Soil Map Unit Name: Wauseon fine sandy loam, 0 to 1 percent slopes (WyA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp008

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>10</u> (A)</td> <td><u>50</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>10</u> (A)	<u>50</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>10</u> (A)	<u>50</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Triticum aestivum</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
13. _____																				
14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>10</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes <u> </u> No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp008

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Redox Dark Surface (F6)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	X	No
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp009
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): concave
 Slope (%): 4% Lat: 41.340973 Long: -83.809760 Datum: NAD83
 Soil Map Unit Name: Spinks loamy fine sand, 2 to 6 percent slopes (SsB) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp009

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>85</u></td> <td>x 5 = <u>425</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>685</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.57</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>85</u>	x 5 = <u>425</u>	Column Totals: <u>150</u> (A)	<u>685</u> (B)	Prevalence Index = B/A = <u>4.57</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>65</u>	x 4 = <u>260</u>																			
UPL species <u>85</u>	x 5 = <u>425</u>																			
Column Totals: <u>150</u> (A)	<u>685</u> (B)																			
Prevalence Index = B/A = <u>4.57</u>																				
1. <u>Juglans nigra</u>	<u>65</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>65</u>	= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Bromus inermis</u>	<u>80</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Lamium purpureum</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
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12. _____																				
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14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>85</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp009

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp010
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.337754 Long: -83.824291 Datum: NAD83
 Soil Map Unit Name: Hoytville clay loam, 0 to 1 percent slopes (HoA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp010

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>65</u></td> <td>x 5 = <u>325</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>425</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.70</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>65</u>	x 5 = <u>325</u>	Column Totals: <u>115</u> (A)	<u>425</u> (B)	Prevalence Index = B/A = <u>3.70</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>50</u>	x 2 = <u>100</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>65</u>	x 5 = <u>325</u>																			
Column Totals: <u>115</u> (A)	<u>425</u> (B)																			
Prevalence Index = B/A = <u>3.70</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Zea mays</u>	<u>65</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Panicum dichotomiflorum</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
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13. _____																				
14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>115</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes _____ No <u>X</u> </div>																

SOIL

Sampling Point: dp010

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp011
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.338689 Long: -83.821759 Datum: NAD83
 Soil Map Unit Name: Merrill-Aurand complex, 0 to 1 percent slopes (MfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: dp011

Northcentral Great Lakes Region - Version 2.0

SOIL

Sampling Point: dp011

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp012
 Investigator(s): B Hess Section, Township, Range: S003 T004N R009E
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.336976 Long: -83.824400 Datum: NAD83
 Soil Map Unit Name: Hoytville clay loam, 0 to 1 percent slopes (HoA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp012

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>65</u></td> <td>x 5 = <u>325</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>425</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.70</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>65</u>	x 5 = <u>325</u>	Column Totals: <u>115</u> (A)	<u>425</u> (B)	Prevalence Index = B/A = <u>3.70</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
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Column Totals: <u>115</u> (A)	<u>425</u> (B)																			
Prevalence Index = B/A = <u>3.70</u>																				
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3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Zea mays</u>	<u>65</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Panicum dichotomiflorum</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
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15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>115</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp012

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp101
 Investigator(s): K Hillier Section, Township, Range: S034 T005N R009E
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.344959 Long: -83.806896 Datum: NAD83
 Soil Map Unit Name: Ottokee-Spinks loamy fine sands, 0 to 2 percent slopes (OtB) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp101

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>43%</u> (A/B)																
1. <u>Morus alba</u>	<u>55</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Juniperus virginiana</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>75</u>	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>3</u></td> <td>x 1 = <u>3</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>23</u></td> <td>x 3 = <u>69</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>25</u></td> <td>x 5 = <u>125</u></td> </tr> <tr> <td>Column Totals: <u>151</u> (A)</td> <td><u>577</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.82</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>3</u>	x 1 = <u>3</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>23</u>	x 3 = <u>69</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>25</u>	x 5 = <u>125</u>	Column Totals: <u>151</u> (A)	<u>577</u> (B)	Prevalence Index = B/A = <u>3.82</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>3</u>	x 1 = <u>3</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>23</u>	x 3 = <u>69</u>																			
FACU species <u>90</u>	x 4 = <u>360</u>																			
UPL species <u>25</u>	x 5 = <u>125</u>																			
Column Totals: <u>151</u> (A)	<u>577</u> (B)																			
Prevalence Index = B/A = <u>3.82</u>																				
1. <u>Morus alba</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Ulmus rubra</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>25</u>	= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Bromus inermis</u>	<u>25</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Geum canadense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Mentha spicata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Carex grisea</u>	<u>3</u>	<u>No</u>	<u>FAC</u>																	
5. <u>Amaranthus tuberculatus</u>	<u>3</u>	<u>No</u>	<u>OBL</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
13. _____	_____	_____	_____																	
14. _____	_____	_____	_____																	
15. _____	_____	_____	_____																	
16. _____	_____	_____	_____																	
17. _____	_____	_____	_____																	
18. _____	_____	_____	_____																	
19. _____	_____	_____	_____																	
20. _____	_____	_____	_____																	
	<u>51</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp101

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)

- ____ Stripped Matrix (S6)
- ____ Loamy Mucky Mineral (F1)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp102
 Investigator(s): K Hillier Section, Township, Range: S034 T005N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.346292 Long: -83.806652 Datum: NAD83
 Soil Map Unit Name: Wauseon fine sandy loam, deep to till, 0 to 1 percent slopes (WnA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp102

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>75</u></td> <td>x 5 = <u>375</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>375</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>75</u>	x 5 = <u>375</u>	Column Totals: <u>75</u> (A)	<u>375</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>75</u>	x 5 = <u>375</u>																			
Column Totals: <u>75</u> (A)	<u>375</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Glycine max</u>	<u>75</u>	<u>Yes</u>	<u>UPL</u>																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
13. _____																				
14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>75</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp102

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

Project/Site:	Juliet		City/County:	Weston/Wood		Sampling Date:	10/21/2020				
Applicant/Owner:	7X Energy		State:	OH	Sampling Point:	dp103					
Investigator(s):	K Hillier		Section, Township, Range:		S034 T005N R009E						
Landform (hillslope, terrace, etc.):	Summit		Local relief (concave, convex, none): none								
Slope (%):	1%	Lat:	41.346422	Long:	-83.812946	Datum:	NAD83				
Soil Map Unit Name:	Wauseon fine sandy loam, deep to till, 0 to 1 percent slopes (WnA)					NWI classification:	none				
Are climatic / hydrologic conditions on the site typical for this time of year?			Yes	<input checked="" type="checkbox"/>	No	(If no, explain in Remarks.)					
Are Vegetation		Soil		or Hydrology		significantly disturbed?	Are "Normal Circumstances" present?	Yes	<input checked="" type="checkbox"/>	No	
Are Vegetation		Soil		or Hydrology		naturally problematic?	(If needed, explain any answers in Remarks.)				

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)					
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches):			
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches):			
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches):			
(includes capillary fringe)			Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

VEGETATION - Use scientific names of plants.

Sampling Point: dp103

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>75</u></td> <td>x 5 = <u>375</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>395</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.65</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>75</u>	x 5 = <u>375</u>	Column Totals: <u>85</u> (A)	<u>395</u> (B)	Prevalence Index = B/A = <u>4.65</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>75</u>	x 5 = <u>375</u>																			
Column Totals: <u>85</u> (A)	<u>395</u> (B)																			
Prevalence Index = B/A = <u>4.65</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Glycine max</u>	<u>75</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Carex grayi</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
3. _____																				
4. _____																				
5. _____																				
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8. _____																				
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16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>85</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes <u> </u> No <u> X </u> </div>																

SOIL

Sampling Point: dp103

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp104
 Investigator(s): K Hillier Section, Township, Range: S034 T005N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.350157 Long: -83.823456 Datum: NAD83
 Soil Map Unit Name: Merrill-Aurand complex, 0 to 1 percent slopes (MfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp104

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>48</u></td> <td>x 4 = <u>192</u></td> </tr> <tr> <td>UPL species <u>43</u></td> <td>x 5 = <u>215</u></td> </tr> <tr> <td>Column Totals: <u>101</u> (A)</td> <td><u>437</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.33</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>48</u>	x 4 = <u>192</u>	UPL species <u>43</u>	x 5 = <u>215</u>	Column Totals: <u>101</u> (A)	<u>437</u> (B)	Prevalence Index = B/A = <u>4.33</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>48</u>	x 4 = <u>192</u>																			
UPL species <u>43</u>	x 5 = <u>215</u>																			
Column Totals: <u>101</u> (A)	<u>437</u> (B)																			
Prevalence Index = B/A = <u>4.33</u>																				
1. <u>Elaeagnus umbellata</u>	<u>5</u>	<u>Yes</u>	<u>UPL</u>																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>5</u>	= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Setaria faberi</u>	<u>35</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Bromus inermis</u>	<u>35</u>	<u>Yes</u>	<u>UPL</u>																	
3. <u>Toxicodendron radicans</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Cirsium arvense</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Solidago canadensis</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Physalis heterophylla</u>	<u>3</u>	<u>No</u>	<u>UPL</u>																	
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
13. _____																				
14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>96</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes _____ No <u>X</u> </div>																

SOIL

Sampling Point: dp104

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

_____ Histosol (A1)	_____ Stripped Matrix (S6)
_____ Histic Epipedon (A2)	_____ Loamy Mucky Mineral (F1)
_____ Black Histic (A3)	_____ Loamy Gleyed Matrix (F2)
_____ Hydrogen Sulfide (A4)	_____ Depleted Matrix (F3)
_____ Stratified Layers (A5)	_____ Redox Dark Surface (F6)
_____ Depleted Below Dark Surface (A11)	_____ Depleted Dark Surface (F7)
_____ Thick Dark Surface (A12)	_____ Redox Depressions (F8)
_____ Sandy Mucky Mineral (S1)	
_____ Sandy Gleyed Matrix (S4)	
_____ Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp105
 Investigator(s): K Hillier Section, Township, Range: S034 T005N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.345983 Long: -83.821622 Datum: NAD83
 Soil Map Unit Name: Merrill-Aurand complex, 0 to 1 percent slopes (MfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp105

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
= Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>75</u></td> <td>x 5 = <u>375</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>415</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.88</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>75</u>	x 5 = <u>375</u>	Column Totals: <u>85</u> (A)	<u>415</u> (B)	Prevalence Index = B/A = <u>4.88</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>75</u>	x 5 = <u>375</u>																			
Column Totals: <u>85</u> (A)	<u>415</u> (B)																			
Prevalence Index = B/A = <u>4.88</u>																				
= Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
= Total Cover																				
Herb Stratum (Plot size: <u>5 ft.</u>)																				
1. <u>Glycine max</u>	75	Yes	UPL																	
2. <u>Cirsium arvense</u>	10	No	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
13. _____	_____	_____	_____																	
14. _____	_____	_____	_____																	
15. _____	_____	_____	_____																	
16. _____	_____	_____	_____																	
17. _____	_____	_____	_____																	
18. _____	_____	_____	_____																	
19. _____	_____	_____	_____																	
20. _____	_____	_____	_____																	
85 = Total Cover																				
Woody Vine Stratum (Plot size: <u>30 ft.</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
= Total Cover																				
Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																				
Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																				
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp105

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp106
 Investigator(s): K Hillier Section, Township, Range: S034 T005N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.345564 Long: -83.824679 Datum: NAD83
 Soil Map Unit Name: Merrill-Aurand complex, 0 to 1 percent slopes (MfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp106

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>75</u></td> <td>x 5 = <u>375</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>375</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>75</u>	x 5 = <u>375</u>	Column Totals: <u>75</u> (A)	<u>375</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>75</u>	x 5 = <u>375</u>																			
Column Totals: <u>75</u> (A)	<u>375</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is $\leq 3.0^1$ _____ 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.																
1. <u>Glycine max</u>	<u>75</u>	<u>Yes</u>	<u>UPL</u>																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
13. _____																				
14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>75</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp106

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp107
 Investigator(s): K Hillier Section, Township, Range: S034 T005N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.343681 Long: -83.817426 Datum: NAD83
 Soil Map Unit Name: Merrill-Aurand complex, 0 to 1 percent slopes (MfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp107

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>80</u></td> <td>x 5 = <u>400</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>500</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.76</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>80</u>	x 5 = <u>400</u>	Column Totals: <u>105</u> (A)	<u>500</u> (B)	Prevalence Index = B/A = <u>4.76</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>25</u>	x 4 = <u>100</u>																			
UPL species <u>80</u>	x 5 = <u>400</u>																			
Column Totals: <u>105</u> (A)	<u>500</u> (B)																			
Prevalence Index = B/A = <u>4.76</u>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Zea mays</u>	<u>80</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Stellaria media</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
13. _____																				
14. _____																				
15. _____																				
16. _____																				
17. _____																				
18. _____																				
19. _____																				
20. _____																				
	<u>105</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes _____ No <u>X</u> </div>																

SOIL

Sampling Point: dp107

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<u> </u> Histosol (A1)	<u> </u> Stripped Matrix (S6)
<u> </u> Histic Epipedon (A2)	<u> </u> Loamy Mucky Mineral (F1)
<u> </u> Black Histic (A3)	<u> </u> Loamy Gleyed Matrix (F2)
<u> </u> Hydrogen Sulfide (A4)	<u> </u> Depleted Matrix (F3)
<u> </u> Stratified Layers (A5)	<u> </u> Redox Dark Surface (F6)
<u> </u> Depleted Below Dark Surface (A11)	<u> </u> Depleted Dark Surface (F7)
<u> </u> Thick Dark Surface (A12)	<u> </u> Redox Depressions (F8)
<u> </u> Sandy Mucky Mineral (S1)	
<u> </u> Sandy Gleyed Matrix (S4)	
<u> </u> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Coast Prairie Redox (A16)
☐ 5 cm Mucky Peat or Peat (S3)
☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8)
☐ Thin Dark Surface (S9)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp108
 Investigator(s): K Hillier Section, Township, Range: S004 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.337792 Long: -83.828342 Datum: NAD83
 Soil Map Unit Name: Merrill-Aurand complex, 0 to 1 percent slopes (MfA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp108

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>80</u></td> <td>x 5 = <u>400</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>480</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.80</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>80</u>	x 5 = <u>400</u>	Column Totals: <u>100</u> (A)	<u>480</u> (B)	Prevalence Index = B/A = <u>4.80</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
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6. _____																				
7. _____																				
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: _____ Rapid Test for Hydrophytic Vegetation _____ Dominance Test is >50% _____ Prevalence Index is $\leq 3.0^1$ _____ 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.																
1. <u>Zea mays</u>	<u>80</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Stellaria media</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____																				
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20. _____																				
	<u>100</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes _____ No <u>X</u> </div>																

SOIL

Sampling Point: dp108

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
 _____ 5 cm Mucky Peat or Peat (S3)
 _____ Dark Surface (S7)
 _____ Polyvalue Below Surface (S8)
 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

WETLAND DETERMINATION DATA FORM -- Northcentral Great Lakes Region

Project/Site: Juliet City/County: Weston/Wood Sampling Date: 10/21/2020
 Applicant/Owner: 7X Energy State: OH Sampling Point: dp109
 Investigator(s): K Hillier Section, Township, Range: S004 T004N R009E
 Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): none
 Slope (%): 1% Lat: 41.337385 Long: -83.834035 Datum: NAD83
 Soil Map Unit Name: Hoytville clay loam, 0 to 1 percent slopes (HoA) NWI 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 significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: dp109

	Absolute % Cover	Dominant Species?	Indicator Status																	
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1. _____																				
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes _____ No <u>X</u></div>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: dp109

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)

- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

_____ 2 cm Muck (A10)
 _____ Coast Prairie Redox (A16)
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 _____ Thin Dark Surface (S9)
 _____ Iron-Manganese Masses (F12)
 _____ Red Parent Material (F21)
 _____ Very Shallow Dark Surface (TF12)
 _____ Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
----------------------	-----	----	---

Remarks:

Wetland and Waterbody Delineation
Report
Juliet Solar Project

APPENDIX

D

STREAM ASSESSMENT FORMS

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

☐

BOAT

☒

WADE

☐

L. LINE

☐

OTHER

STAGE

☐

HIGH

☐

UP

☒

NORMAL

☐

LOW

☐

DRY

DISTANCE

☐

0.5 Km

☐

0.2 Km

☐

0.15 Km

☐

0.12 Km

☐

OTHER

meters

CANOPY

☐

>85% - OPEN

☐

55% - <85%

☒

30% - <55%

☐

10% - <30%

☐

<10% - CLOSED

CLARITY

1st

--sample pass--

2nd

☐

<20 cm

☐

20 - <40 cm

☐

40 - 70 cm

☐

> 70 cm/ CTB

☐

SECCHI DEPTH

1st

cm

--sample pass--

2nd

cm

BJ AESTHETICS

☐

NUISANCE ALGAE

☐

INVASIVE MACROPHYTES

☐

EXCESS TURBIDITY

☐

DISCOLORATION

☐

FOAM / SCUM

☐

OIL SHEEN

☐

TRASH / LITTER

☐

NUISANCE ODOR

☐

SLUDGE DEPOSITS

☐

CSOs/SSOs/OUTFALLS

CJ RECREATION

AREA

DEPTH

POOL:

☐

>100ft2

☐

>3ft

Highlight some & COMMENT

DJ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA

ACTIVE / HISTORIC / BOTH / NA

YOUNG-SUCCESSION-OLD

SPRAY / SNAG / REMOVED

MODIFIED / DIPPED OUT / NA

LEVEED / ONE SIDED

RELOCATED / CUTOFFS

MOVING-BEDLOAD-STABLE

ARMoured / SLUMPS

ISLANDS / SCURED

IMPOUNDED / DESICCATED

FLOOD CONTROL / DRAINAGE

EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT&GRIME

CONTAMINATED / LANDFILL

BMPs-CONSTRUCTION-SEDIMENT

LOGGING / IRRIGATION / COOLING

BANK / EROSION / SURFACE

FALSE BANK / MANURE / LAGOON

WASH H2O / TILE / H2O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

6

\bar{x} width (ft)

1

\bar{x} depth

18

max. depth

8

\bar{x} bankfull width (ft)

1

bankfull \bar{x} depth (ft)

8

W/D ratio

1

bankfull max. depth

floodprone x^2 width (ft)

entrench. ratio

Legacy Tree:

Stream Drawing: (see associated waters delineation report figures and photo pages)



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

22.00

Stream & Location: s002

RM: **Date:** 10/21/2020

Ben Hess

Scorers Full Name & Affiliation: Cardno

Office verified

River Code: - - - - -

STORET #: - - - - -

Lat/ Long: 41.3364 / -83.8231

location ☐

1] SUBSTRATE

Check **ONLY Two** substrate **TYPE BOXES**; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		POOL	RIFFLE	OTHER TYPES		POOL	RIFFLE	ORIGIN		QUALITY		Substrate 4.0 Maximum 20
<input type="checkbox"/>	BLDR /SLABS [10]			<input checked="" type="checkbox"/>	HARDPAN [4]		30	<input type="checkbox"/>	LIMESTONE [1]	<input checked="" type="checkbox"/>	HEAVY [-2]	
<input type="checkbox"/>	BOULDER [9]			<input type="checkbox"/>	DETRITUS [3]			<input checked="" type="checkbox"/>	TILLS [1]	<input type="checkbox"/>	MODERATE [-1]	
<input type="checkbox"/>	COBBLE [8]			<input type="checkbox"/>	MUCK [2]			<input type="checkbox"/>	WETLANDS [0]	<input type="checkbox"/>	NORMAL [0]	
<input type="checkbox"/>	GRAVEL [7]		5	<input checked="" type="checkbox"/>	SILT [2]		60	<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]	
<input type="checkbox"/>	SAND [6]		5	<input type="checkbox"/>	ARTIFICIAL [0]			<input type="checkbox"/>	SANDSTONE [0]	<input type="checkbox"/>	EXTENSIVE [-2]	
<input type="checkbox"/>	BEDROCK [5]							<input type="checkbox"/>	RIP/RAP [0]	<input checked="" type="checkbox"/>	MODERATE [-1]	
								<input type="checkbox"/>	LACUSTURINE [0]	<input type="checkbox"/>	NORMAL [0]	
								<input type="checkbox"/>	SHALE [-1]	<input type="checkbox"/>	NONE [1]	
								<input type="checkbox"/>	COAL FINES [-2]			

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal

AMOUNT

quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1 UNDERCUT BANKS [1]		0 POOLS > 70cm [2]		0 OXBOWS, BACKWATERS [1]		Check ONE (Or 2 & average)		Cover Maximum 20
<input type="checkbox"/>	OVERHANGING VEGETATION [1]	<input type="checkbox"/>	ROOTWADS [1]	<input type="checkbox"/>	AQUATIC MACROPHYTES [1]	<input type="checkbox"/>	EXTENSIVE >75% [11]	
<input type="checkbox"/>	SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/>	BOULDERS [1]	<input type="checkbox"/>	LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/>	MODERATE 25-75% [7]	
<input type="checkbox"/>	ROOTMATS [1]	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	SPARSE 5-<25% [3]	
						<input checked="" type="checkbox"/>	NEARLY ABSENT <5% [1]	

Comments

3] CHANNEL MORPHOLOGY

Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	Channel Maximum 20
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]	
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input checked="" type="checkbox"/> LOW [1]	
<input checked="" type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		

Comments

4] BANK EROSION AND RIPARIAN ZONE

Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream		L	R	RIPARIAN WIDTH		L	R	FLOOD PLAIN QUALITY		L	R	CONSERVATION TILLAGE [1]		Riparian Maximum 10
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WIDE > 50m [4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FOREST, SWAMP [3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	URBAN OR INDUSTRIAL [0]	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MODERATE 10-50m [3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SHRUB OR OLD FIELD [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MINING / CONSTRUCTION [0]	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NARROW 5-10m [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VERY NARROW < 5m [1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FENCED PASTURE [1]	<input type="checkbox"/>	<input type="checkbox"/>			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NONE [0]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OPEN PASTURE, ROWCROP [0]					

Comments

Indicate predominant land use(s) past 100m riparian.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

<input type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<input checked="" type="checkbox"/> SLOW [1]	Recreation Potential Primary Contact <input type="checkbox"/> Secondary Contact <input checked="" type="checkbox"/> (check one and comment on back)
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	<input type="checkbox"/> INTERSTITIAL [-1]	
<input type="checkbox"/> 0.4-<0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	<input type="checkbox"/> INTERMITTENT [-2]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> MODERATE [1]	<input type="checkbox"/> EDDIES [1]	
<input checked="" type="checkbox"/> < 0.2m [0]				

Comments

Indicate for reach - pools and riffles.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS	Riffle / Run Maximum 8
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]	
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]	
<input checked="" type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input checked="" type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input checked="" type="checkbox"/> MODERATE [0]	
			<input type="checkbox"/> EXTENSIVE [-1]	

Comments

6] GRADIENT DRAINAGE AREA

(2.0 ft/mi)

(3.800 mi²)

☒ VERY LOW - LOW [2-4]

☐ MODERATE [6-10]

☐ HIGH - VERY HIGH [10-6]

%POOL: 0%

%RUN: 0%

%GLIDE: 100%

%RIFFLE: 0%

Gradient
Maximum 10
4.0

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

☐

BOAT

☒

WADE

☐

L. LINE

☐

OTHER

STAGE

☐

HIGH

☐

UP

☒

NORMAL

☐

LOW

☐

DRY

DISTANCE

☐

0.5 Km

☐

0.2 Km

☐

0.15 Km

☐

0.12 Km

☐

OTHER

meters

CANOPY

☐

>85% - OPEN

☒

55% - <85%

☐

30% - <55%

☐

10% - <30%

☐

<10% - CLOSED

CLARITY

1st

--sample pass--

2nd

☐

<20 cm

☐

20 - <40 cm

☐

40 - 70 cm

☐

> 70 cm/ CTB

☐

SECCHI DEPTH

1st

_____ cm

--sample pass--

2nd

_____ cm

CJ RECREATION

AREA

DEPTH

POOL:

☐

>100ft2

☐

>3ft

BJ AESTHETICS

☐

NUISANCE ALGAE

☐

INVASIVE MACROPHYTES

☐

EXCESS TURBIDITY

☐

DISCOLORATION

☐

FOAM / SCUM

☐

OIL SHEEN

☐

TRASH / LITTER

☐

NUISANCE ODOR

☐

SLUDGE DEPOSITS

☐

CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

☐

PUBLIC / PRIVATE / BOTH / NA

☐

ACTIVE / HISTORIC / BOTH / NA

☐

YOUNG-SUCCESSION-OLD

☐

SPRAY / SNAG / REMOVED

☐

MODIFIED / DIPPED OUT / NA

☐

LEVEED / ONE SIDED

☐

RELOCATED / CUTOFFS

☐

MOVING-BEDLOAD-STABLE

☐

ARMoured / SLUMPS

☐

ISLANDS / SCoured

☐

IMPOUNDED / DESICCATED

☐

FLOOD CONTROL / DRAINAGE

EJ ISSUES

☐

WWTP / CSO / NPDES / INDUSTRY

☐

HARDENED / URBAN / DIRT&GRIME

☐

CONTAMINATED / LANDFILL

☐

BMPs-CONSTRUCTION-SEDIMENT

☐

LOGGING / IRRIGATION / COOLING

☐

BANK / EROSION / SURFACE

☐

FALSE BANK / MANURE / LAGOON

☐

WASH H2O / TILE / H2O TABLE

☐

ACID / MINE / QUARRY / FLOW

☐

NATURAL / WETLAND / STAGNANT

☐

PARK / GOLF / LAWN / HOME

☐

ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

9

̄ width (ft)

2

̄ depth

18

max. depth

10

̄ bankfull width (ft)

2

bankfull ̄ depth (ft)

5

W/D ratio

1

bankfull max. depth

floodprone x² width (ft)

entrench. ratio

Legacy Tree:

Stream Drawing:

(see associated waters delineation report figures and photo pages)



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

21.00

Stream & Location: s003 RM: Cardno Date: 10/21/2020
Ben Hess Scorers Full Name & Affiliation: Cardno Office verified location
River Code: STORET #: Lat/ Long: 41.3365 / -83.8247

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present Check ONE (Or 2 & average)

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE	ORIGIN	QUALITY
<input type="checkbox"/> BLDR /SLABS [10]			<input checked="" type="checkbox"/> HARDPAN [4]		30	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]			<input type="checkbox"/> DETRITUS [3]			<input checked="" type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]			<input type="checkbox"/> MUCK [2]			<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> NORMAL [0]
<input type="checkbox"/> GRAVEL [7]		5	<input checked="" type="checkbox"/> SILT [2]		60	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input type="checkbox"/> SAND [6]		5	<input type="checkbox"/> ARTIFICIAL [0]			<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> BEDROCK [5]						<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]
						<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> NORMAL [0]
						<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]
						<input type="checkbox"/> COAL FINES [-2]	

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

Substrate Maximum 20

5.0

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.) Check ONE (Or 2 & average)

UNDERCUT BANKS [1]	OVERHANGING VEGETATION [1]	SHALLOWS (IN SLOW WATER) [1]	ROOTMATS [1]	POOLS > 70cm [2]	ROOTWADS [1]	BOULDERS [1]	OXBOWS, BACKWATERS [1]	AQUATIC MACROPHYTES [1]	LOGS OR WOODY DEBRIS [1]
1	0	0	0	0	0	0	0	0	0

Comments

Cover Maximum 20

3.0

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input checked="" type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel Maximum 20

6.0

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIFFLE	WIDE > 50m [4]	MODERATE 10-50m [3]	NARROW 5-10m [2]	VERY NARROW < 5m [1]	NONE [0]
<input checked="" type="checkbox"/> NONE / LITTLE [3]						
<input type="checkbox"/> MODERATE [2]						
<input type="checkbox"/> HEAVY / SEVERE [1]						

Comments

Riparian Maximum 10

3.0

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
<input type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]
<input checked="" type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> MODERATE [1]

Comments

Pool / Current Maximum 12

1.0

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average).

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input checked="" type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input checked="" type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

Riffle / Run Maximum 8

1.0

6] GRADIENT DRAINAGE AREA (1.0 ft/mi) (1.710 mi²)

VERY LOW - LOW [2-4]	MODERATE [6-10]	HIGH - VERY HIGH [10-6]	%POOL:	%GLIDE:	%RIFFLE:
<input checked="" type="checkbox"/>			0%	100%	0%

Gradient Maximum 10

2.0

A] SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

<input type="checkbox"/>	BOAT
<input checked="" type="checkbox"/>	WADE
<input type="checkbox"/>	L. LINE
<input type="checkbox"/>	OTHER

STAGE

<input type="checkbox"/>	HIGH
<input type="checkbox"/>	UP
<input checked="" type="checkbox"/>	NORMAL
<input type="checkbox"/>	LOW
<input type="checkbox"/>	DRY

DISTANCE

<input type="checkbox"/>	0.5 Km
<input type="checkbox"/>	0.2 Km
<input type="checkbox"/>	0.15 Km
<input type="checkbox"/>	0.12 Km
<input type="checkbox"/>	OTHER

meters

CLARITY

1st	--sample pass--	2nd
<input type="checkbox"/>	<20 cm	<input type="checkbox"/>
<input type="checkbox"/>	20 - <40 cm	<input type="checkbox"/>
<input type="checkbox"/>	40 - 70 cm	<input type="checkbox"/>
<input type="checkbox"/>	> 70 cm/ CTB	<input type="checkbox"/>
<input type="checkbox"/>	SECCHI DEPTH	<input type="checkbox"/>

1st _____ cm

--sample pass--

2nd _____ cm

CANOPY

<input type="checkbox"/>	>85% - OPEN
<input type="checkbox"/>	55% - <85%
<input checked="" type="checkbox"/>	30% - <55%
<input type="checkbox"/>	10% - <30%
<input type="checkbox"/>	<10% - CLOSED

C] RECREATION

AREA	DEPTH
POOL: <input type="checkbox"/> >100ft ²	<input type="checkbox"/> >3ft

B] AESTHETICS

<input type="checkbox"/>	NUISANCE ALGAE
<input type="checkbox"/>	INVASIVE MACROPHYTES
<input type="checkbox"/>	EXCESS TURBIDITY
<input type="checkbox"/>	DISCOLORATION
<input type="checkbox"/>	FOAM / SCUM
<input type="checkbox"/>	OIL SHEEN
<input type="checkbox"/>	TRASH / LITTER
<input type="checkbox"/>	NUISANCE ODOR
<input type="checkbox"/>	SLUDGE DEPOSITS
<input type="checkbox"/>	CSOs/SSOs/OUTFALLS

Highlight some & COMMENT

D] MAINTENANCE

<input type="checkbox"/>	PUBLIC / PRIVATE / BOTH / NA
<input type="checkbox"/>	ACTIVE / HISTORIC / BOTH / NA
<input type="checkbox"/>	YOUNG-SUCCESSION-OLD
<input type="checkbox"/>	SPRAY / SNAG / REMOVED
<input type="checkbox"/>	MODIFIED / DIPPED OUT / NA
<input type="checkbox"/>	LEVEED / ONE SIDED
<input type="checkbox"/>	RELOCATED / CUTOFFS
<input type="checkbox"/>	MOVING-BEDLOAD-STABLE
<input type="checkbox"/>	ARMoured / SLUMPS
<input type="checkbox"/>	ISLANDS / SCURED
<input type="checkbox"/>	IMPOUNDED / DESICCATED
<input type="checkbox"/>	FLOOD CONTROL / DRAINAGE

E] ISSUES

<input type="checkbox"/>	WWTP / CSO / NPDES / INDUSTRY
<input type="checkbox"/>	HARDENED / URBAN / DIRT&GRIME
<input type="checkbox"/>	CONTAMINATED / LANDFILL
<input type="checkbox"/>	BMPs-CONSTRUCTION-SEDIMENT
<input type="checkbox"/>	LOGGING / IRRIGATION / COOLING
<input type="checkbox"/>	BANK / EROSION / SURFACE
<input type="checkbox"/>	FALSE BANK / MANURE / LAGOON
<input type="checkbox"/>	WASH H2O / TILE / H2O TABLE
<input type="checkbox"/>	ACID / MINE / QUARRY / FLOW
<input type="checkbox"/>	NATURAL / WETLAND / STAGNANT
<input type="checkbox"/>	PARK / GOLF / LAWN / HOME
<input type="checkbox"/>	ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

<input type="checkbox"/>	2	̄ width (ft)
<input type="checkbox"/>	0	̄ depth
<input type="checkbox"/>	18	max. depth
<input type="checkbox"/>	4	̄ bankfull width (ft)
<input type="checkbox"/>	1	bankfull ̄ depth (ft)
<input type="checkbox"/>	8	W/D ratio
<input type="checkbox"/>	1	bankfull max. depth
<input type="checkbox"/>		floodprone x ² width (ft)
<input type="checkbox"/>		entrench. ratio

Legacy Tree:

Stream Drawing:

(see associated waters delineation report figures and photo pages)



Primary Headwater Habitat Evaluation Form

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

27

SITE NAME/LOCATION Juliet Solar / Weston, Ohio
 SITE NUMBER S004 RIVER BASIN Lower Maumee DRAINAGE AREA (mi²) 0.6
 LENGTH OF STREAM REACH (ft) 1475 LAT 41.342884 LONG -83.817479 RIVER CODE RIVER MILE
 DATE 10/21/2020 SCORER B Hess COMMENTS

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

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

1. **SUBSTRATE** (Est. % of every type of substrate present. Check ONLY 2 predominant substrate TYPE boxes (Max of 40).
 Add total number of significant substrate types found (Max of 8). Final metric score is A + B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]		<input checked="" type="checkbox"/> SILT [3 PTS]	60
<input type="checkbox"/> BOULDER (>256mm) [16 pts]		<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	
<input type="checkbox"/> BEDROCK [16 PTS]		<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> COBBLE (65-256mm) [12 pts]		<input checked="" type="checkbox"/> CLAY or HARDPAN [0 PT]	30
<input type="checkbox"/> GRAVEL (2-64mm) [9 pts]	5	<input type="checkbox"/> MUCK [0 PT]	
<input type="checkbox"/> SAND (<2mm) [6 pts]	5	<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock 0 (A)

SCORE OF 2 MOST PREDOMINANT SUBSTRATE TYPES:

3

TOTAL NUMBER OF SUBSTRATE TYPES:

4

HHEI
Metric
Points

Substrate
Max = 40

7

A + B

2. **Maximum Pool Depth** (Measure the maximum pool depth within the 61m (200') evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> >30 centimeters [20 pts]	<input checked="" type="checkbox"/> >5 cm - 10 cm [15 pts]
<input type="checkbox"/> >22.5 - 30 cm [30 pts]	<input type="checkbox"/> <5 cm [5 pts]
<input type="checkbox"/> >10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

5

15

Pool Depth
Max = 30

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

<input type="checkbox"/> >4.0 meters (>13') [30 pts]	<input type="checkbox"/> >1.0 m - 1.5 m (>3'3" - 4'8") [15 pts]
<input type="checkbox"/> >3.0 m - 4.0 m (>9'7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤1.0 m (≤ 3'3") [5 pts]
<input type="checkbox"/> >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

0.9

5

Bankfull
Width
Max = 30

This information must also be completed

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

RIPARIAN WIDTH

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

FLOODPLAIN QUALITY

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Conservation Tillage
Urban or Industrial
Open Pasture, Row Crop
Mining or Construction

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

Comments

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

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**S004**QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSGS Quadrangle Name: Weston NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____County: Wood Township/City: Milton/Weston**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/20/2020 Quantity: 0.5Photographer Information: See photopagesElevated Turbidity? (Y/N): N Canopy (% open): 100Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number _____

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

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

Additional comments/description of pollution impacts _____

BIOTIC EVALUATIONPerformed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)Fish observed? (Y/N) N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) NFrogs or Tadpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

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

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

(see associated waters delineation report figures and photo pages)

FLOW →



Primary Headwater Habitat Evaluation Form

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

52

SITE NAME/LOCATION Juliet Solar / Weston, Ohio
 SITE NUMBER S101 RIVER BASIN Lower Maumee DRAINAGE AREA (mi²) 0.55
 LENGTH OF STREAM REACH (ft) 200 LAT 41.347595 LONG -83.817119 RIVER CODE RIVER MILE
 DATE 10/21/2020 SCORER B Hess COMMENTS

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

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

1. SUBSTRATE (Est. % of every type of substrate present. Check ONLY 2 predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is A + B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]		<input checked="" type="checkbox"/> SILT [3 PTS]	100
<input type="checkbox"/> BOULDER (>256mm) [16 pts]		<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	
<input type="checkbox"/> BEDROCK [16 PTS]		<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> COBBLE (65-256mm) [12 pts]		<input type="checkbox"/> CLAY or HARDPAN [0 PT]	
<input type="checkbox"/> GRAVEL (2-64mm) [9 pts]		<input type="checkbox"/> MUCK [0 PT]	
<input type="checkbox"/> SAND (<2mm) [6 pts]		<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock 0 (A)

SCORE OF 2 MOST PREDOMINANT SUBSTRATE TYPES:

6

TOTAL NUMBER OF SUBSTRATE TYPES:

1

HHEI
Metric
Points

Substrate
Max = 40

7

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61m (200') evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> >30 centimeters [20 pts]	<input type="checkbox"/> >5 cm - 10 cm [15 pts]
<input type="checkbox"/> >22.5 - 30 cm [30 pts]	<input type="checkbox"/> <5 cm [5 pts]
<input checked="" type="checkbox"/> >10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

15

25

Pool Depth
Max = 30

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

<input type="checkbox"/> >4.0 meters (>13') [30 pts]	<input type="checkbox"/> >1.0 m - 1.5 m (>3'3" - 4'8") [15 pts]
<input type="checkbox"/> >3.0 m - 4.0 m (>9'7" - 13') [25 pts]	<input type="checkbox"/> ≤1.0 m (≤ 3'3") [5 pts]
<input checked="" type="checkbox"/> >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

1.5

20

Bankfull
Width
Max = 30

This information must also be completed

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

RIPARIAN WIDTH

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Comments

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

FLOODPLAIN QUALITY

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Conservation Tillage
Urban or Industrial
Open Pasture, Row Crop
Mining or Construction

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

Comments

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

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**S101**QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSGS Quadrangle Name: Weston NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____County: Wood Township/City: Weston/Weston**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/20/2020 Quantity: 0.5Photographer Information: See photopagesElevated Turbidity? (Y/N): N Canopy (% open): 95Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number _____

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

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

Additional comments/description of pollution impacts _____

BIOTIC EVALUATIONPerformed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)Fish observed? (Y/N) N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) NFrogs or Tadpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

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

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

(see associated waters delineation report figures and photo pages)

FLOW →



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: **57.50**

Stream & Location: s102 **RM:** **Date:** 10/21/2020
Kaitlin Hillier **Scorers Full Name & Affiliation:** Cardno **Office verified**
River Code: **STORET #:** **Lat/ Long:** 41.3358 / -83.8342 **location**

1] SUBSTRATE Check **ONLY Two** substrate **TYPE BOXES**; estimate % or note every type present

BEST TYPES		POOL	RIFFLE	OTHER TYPES		POOL	RIFFLE	ORIGIN		QUALITY	
<input type="checkbox"/>	BLDR /SLABS [10]		5	<input type="checkbox"/>	HARDPAN [4]			<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]
<input type="checkbox"/>	BOULDER [9]			<input type="checkbox"/>	DETRITUS [3]			<input checked="" type="checkbox"/>	TILLS [1]	<input type="checkbox"/>	MODERATE [-1]
<input checked="" type="checkbox"/>	COBBLE [8]		25	<input type="checkbox"/>	MUCK [2]			<input type="checkbox"/>	WETLANDS [0]	<input checked="" type="checkbox"/>	NORMAL [0]
<input checked="" type="checkbox"/>	GRAVEL [7]		40	<input type="checkbox"/>	SILT [2]		15	<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]
<input type="checkbox"/>	SAND [6]		15	<input type="checkbox"/>	ARTIFICIAL [0]			<input type="checkbox"/>	SANDSTONE [0]	<input type="checkbox"/>	EXTENSIVE [-2]
<input type="checkbox"/>	BEDROCK [5]							<input type="checkbox"/>	RIP/RAP [0]	<input type="checkbox"/>	MODERATE [-1]

NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

ORIGIN **QUALITY**

EMBEDDEDNESS

Substrate **18.0** **Maximum 20**

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.)

1] UNDERCUT BANKS [1]		0] POOLS > 70cm [2]		0] OXBOWS, BACKWATERS [1]	
1	OVERHANGING VEGETATION [1]	0	ROOTWADS [1]	0	AQUATIC MACROPHYTES [1]
0	SHALLOWS (IN SLOW WATER) [1]	0	BOULDERS [1]	1	LOGS OR WOODY DEBRIS [1]
0	ROOTMATS [1]	1			

Comments

AMOUNT Check ONE (Or 2 & average)

☐ EXTENSIVE >75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-<25% [3] ☐ NEARLY ABSENT <5% [1]

Cover **4.0** **Maximum 20**

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel **14.0** **Maximum 20**

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		CONSERVATION TILLAGE	
L	R	L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

Riparian **8.5** **Maximum 10**

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
<input type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.7-<1m [4]	<input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]
<input checked="" type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]

Comments

Recreation Potential **Primary Contact** ☐ **Secondary Contact** ☒ (check one and comment on back)

Pool / Current **5.0** **Maximum 12**

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input checked="" type="checkbox"/> BEST AREAS 5-10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

Comments

Riffle / Run **4.0** **Maximum 8**

6] GRADIENT DRAINAGE AREA

(2.0 ft/mi) ☒ VERY LOW - LOW [2-4] ☐ MODERATE [6-10] ☐ HIGH - VERY HIGH [10-6]

(5.250 mi²)

%POOL: 20% **%GLIDE:** 5% **%RUN:** 45% **%RIFFLE:** 30%

Gradient **4.0** **Maximum 10**

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

BOAT

X

WADE

L. LINE

OTHER

STAGE

HIGH

UP

X

NORMAL

LOW

DRY

DISTANCE

0.5 Km

0.2 Km

0.15 Km

0.12 Km

OTHER

meters

CLARITY

1st

--sample pass--

2nd

<20 cm

20 - <40 cm

40 - 70 cm

> 70 cm/ CTB

SECCHI DEPTH

1st

cm

--sample pass--

2nd

cm

CANOPY

>85% - OPEN

55% - <85%

X

30% - <55%

10% - <30%

<10% - CLOSED

BJ AESTHETICS

NUISANCE ALGAE

INVASIVE MACROPHYTES

EXCESS TURBIDITY

DISCOLORATION

FOAM / SCUM

OIL SHEEN

TRASH / LITTER

NUISANCE ODOR

SLUDGE DEPOSITS

CSOs/SSOs/OUTFALLS

CJ RECREATION

AREA

DEPTH

POOL:

>100ft2

>3ft

Highlight some & COMMENT

DJ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA

ACTIVE / HISTORIC / BOTH / NA

YOUNG-SUCCESSION-OLD

SPRAY / SNAG / REMOVED

MODIFIED / DIPPED OUT / NA

LEVEED / ONE SIDED

RELOCATED / CUTOFFS

MOVING-BEDLOAD-STABLE

ARMoured / SLUMPS

ISLANDS / SCoured

IMPOUNDED / DESICCATED

FLOOD CONTROL / DRAINAGE

EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT&GRIME

CONTAMINATED / LANDFILL

BMPs-CONSTRUCTION-SEDIMENT

LOGGING / IRRIGATION / COOLING

BANK / EROSION / SURFACE

FALSE BANK / MANURE / LAGOON

WASH H2O / TILE / H2O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

15

̄ width (ft)

2

̄ depth

18

max. depth

20

̄ bankfull width (ft)

4

bankfull ̄ depth (ft)

6

W/D ratio

bankfull max. depth

floodprone x² width (ft)

entrench. ratio

Legacy Tree:

Stream Drawing: (see associated waters delineation report figures and photo pages)

Juliet Solar Project

APPENDIX

E

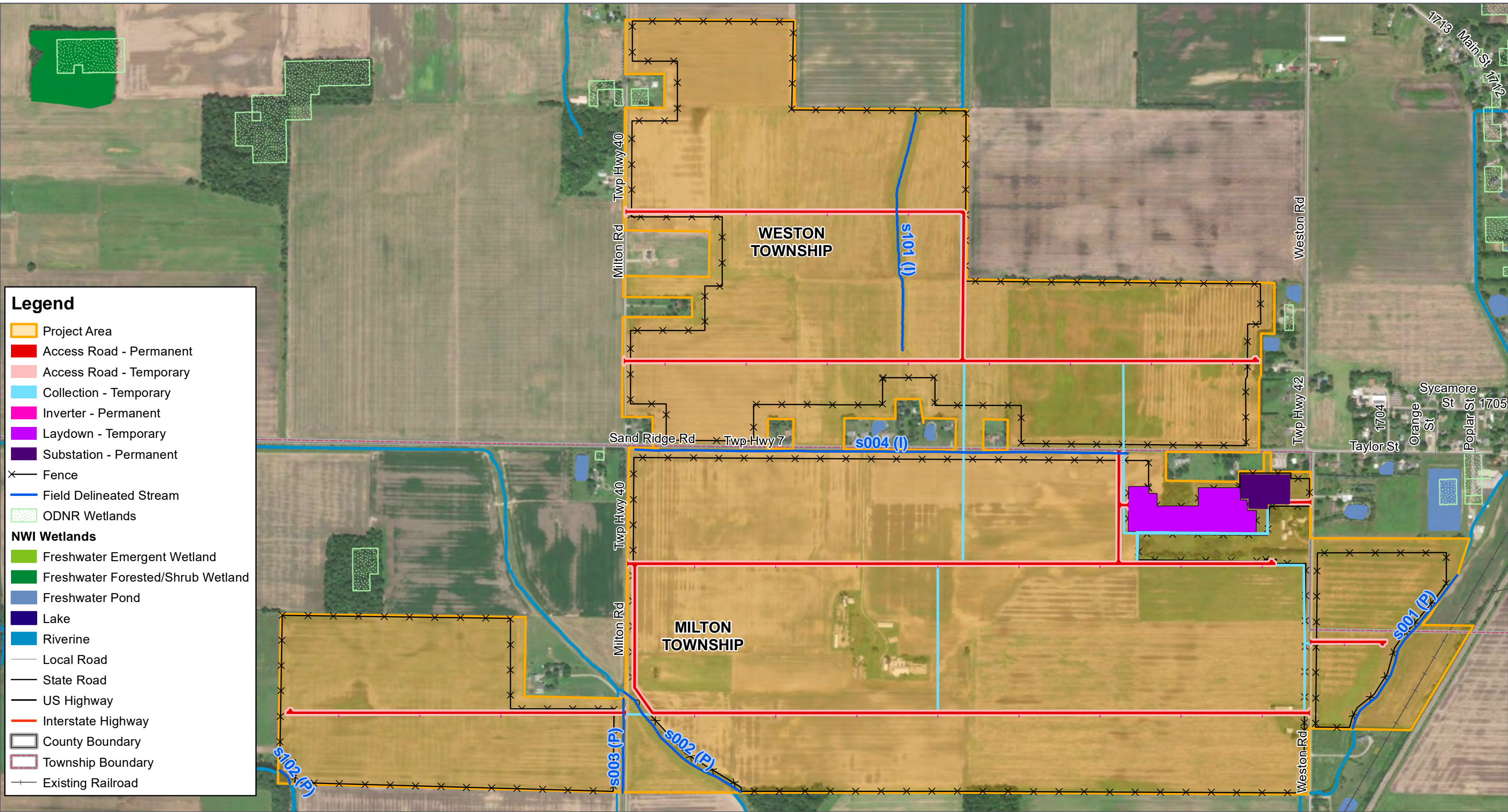
WETLAND AND WATERBODY
IMPACT TABLES

Table E-1. Waterbodies within the Juliet Solar Project Boundary

Feature ID	County	Linear Feet in Project Area	Flow Regime	Type	Drainage Basin	Anticipated Jurisdictional (Yes/No)	Crossed (Yes/No)
S001	Wood	1,470	Perennial	Ditch	Tontogany Creek	Yes	No
S002	Wood	1,217	Perennial	Ditch	Beaver Creek - Maumee River	Yes	Yes
S003	Wood	729	Perennial	Ditch	Beaver Creek - Maumee River	Yes	Yes
S004	Wood	3,833	Intermittent	Ditch	Beaver Creek - Maumee River	Yes	Yes
S101	Wood	1,868	Intermittent	Ditch	Beaver Creek - Maumee River	Yes	Yes
S102	Wood	137	Perennial	Stream	Beaver Creek - Maumee River	Yes	No
Project Totals		9,253				6	4

Table E-2. Proposed Waterbody Crossing Methods and Impacts for the Juliet Solar Project

Feature ID	Access Roads						Collection Lines					
	Crossings		Temporary Impacts		Permanent Impacts		Crossings		Temporary Impacts		Permanent Impacts	
	Number of Crossings	Crossing Method	Access Road Impact (l.f.)	Access Road Impact (acre)	Access Road Impact (l.f.)	Access Road Impact (acre)	Number of Crossings	Crossing Method	Collection Line Impact (l.f.)	Collection Line Impact (acre)	Collection Line Impact (l.f.)	Collection Line Impact (acre)
S001	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
S002	0	n/a	0.00	0	0.00	0	1	HDD	0	0	0	0
S003	1	Culvert	30.00	0.006887	20.00	0.00459	1	Open Cut	0	0	0	0
S004	1	Culvert	30.00	0.006887	20.00	0.00459	2	Open Cut (1), HDD (1)	20	0.005	0	0
S101	1	Culvert	31.00	0.014233	20.00	0.009183	1	HDD	0	0	0	0
S102	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Project Totals	3	n/a	91	0.028	60	0.018	5	n/a	20	0.005	0	0.00



Juliet Solar Project

APPENDIX

F

INADVERTENT RELEASE OF
DRILLING FLUID CONTINGENCY
PLAN

INADVERTENT RELEASE OF DRILLING FLUID CONTINGENCY PLAN

For Horizontal Directional Drilling
Juliet Solar Project
Wood County, Ohio

I. Introduction

Construction of the Juliet Solar Project in Wood County, Ohio, will include the use of trenchless excavation methods known as horizontal directional drilling (“HDD”). This widely used technique accomplishes the installation of buried utilities with minimal impact, by routing the utility under a sensitive feature (such as a stream, river or wetland). The HDD procedure uses a bentonite slurry, a fine clay material as a drilling lubricant (“drilling mud”). Although bentonite is non-toxic and non-hazardous, a potential environmental risk associated with conducting HDD under sensitive features occurs when bentonite is released to the surface during construction (sometimes referred to as an inadvertent release or “frac-out”).

Seepage of drilling fluid is most likely to occur near the bore entry and exit points where the drill head is shallow. Frac-outs can occur, however, in any location along a directional bore. This plan establishes operational procedures and responsibilities for the prevention, containment, and remediation of any of frac-outs that may occur in connection with the proposed HDD as part of the construction of the Juliet Solar Project.

The objectives of this Plan are to:

1. Minimize the potential for an inadvertent release associated with HDD activities;
2. Provide for the timely detection of an inadvertent release;
3. Protect sensitive water courses and associated riparian vegetation;
4. Ensure an organized, timely, and minimum-impact response in the event an inadvertent release occurs; and
5. Ensure that all appropriate notifications are made immediately to management and environmental personnel.

Measures to be deployed as part of the contingency plan include site inspection, proper training of the contractor and construction personnel, development of response procedures, provision of containment materials, and implementation of appropriate clean up procedures. These measures are described in detail below:

II. Description of Work

Drilling operations will be carefully monitored to determine if and when a frac-out may be occurring. Operations will be halted immediately upon detection of a significant decline in drilling pressure or other evidence that a frac-out may be occurring. The clean-up of all spills shall begin immediately. Management and environmental personnel shall be notified immediately of any spills and shall be consulted regarding remediation procedures. Spill response kits shall be maintained on-site and used if a frac-out occurs. A vacuum truck and containment materials, such as straw bales, shall also be readily available. In the event of a frac-out, the on-site supervisor of construction activities (“Site Supervisor”) will conduct an evaluation of the situation and direct recommended mitigation actions, based on the following guidelines:

1. If the frac-out is minor, easily contained, has not reached the surface, and is not threatening sensitive resources, then drilling operations may resume after use of a leak-stopping compound or redirection of the bore; and
2. If the frac-out has reached the surface, any hazardous materials within the bentonite shall be removed, contained and properly disposed of, as required by law. The drilling contractor shall be responsible for ensuring that the bentonite either is properly disposed of at an approved disposal facility or properly recycled in an approved manner. The Site Supervisor shall notify and take any necessary follow-up response actions in coordination with the relevant regulatory agency representatives. The Site Supervisor shall coordinate the mobilization of equipment stored at off-site locations (e.g., vacuum trucks) on an as needed basis.

III. Site Supervisor Responsibilities

The Site Supervisor has ultimate responsibility for implementing this plan. The Site Supervisor shall ensure that all relevant employees are trained prior to drilling. The Site Supervisor shall be notified immediately when a frac-out is detected. The Site Supervisor shall be responsible for ensuring that environmental personnel are aware of the frac-out, and coordinate personnel, response, remediation, and regulatory agency notification. The Site Supervisor shall ensure all waste materials are properly containerized, labeled, and removed from the site to an approved disposal facility by personnel experienced in the removal, transport and disposal of drilling mud.

The Site Supervisor shall be familiar with all aspects of the drilling activity, the contents of this plan and the conditions of approval under which the HDD is authorized to take place. The Site Supervisor shall have the authority to stop work and commit the resources (personnel and equipment) necessary to implement this plan. The Site Supervisor shall ensure that a copy of this plan is available (at the project work site) and accessible to all construction personnel. The Site Supervisor shall ensure that all workers are properly trained and familiar with the necessary procedures for response to a frac-out, prior to commencement of drilling operations.

IV. Equipment

The Site Supervisor shall ensure that:

1. Spill responses kit and spill containment materials are available on-site at all times, and that the equipment is in good working order;
2. Equipment required to contain and remediate a frac-out release either will either be available at the work site or readily available at an offsite location within 15- minutes of the bore site; and

If equipment is required to be operated adjacent to a water course, absorbent pads and plastic sheeting for placement beneath motorized equipment shall be used to protect sensitive areas from engine fluids.

V. Training

Prior to the start of construction, the Site Supervisor shall ensure that relevant workers receive training in the following areas:

1. The provisions of this plan, equipment maintenance and site-specific permit and monitoring requirements;
2. Inspection procedures for release prevention and containment equipment and materials;
3. Contractor/employee obligations to immediately stop the drilling operation upon first evidence of the occurrence of a frac-out and to immediately report any frac-out releases;
4. Contractor/employee responsibilities in the event of a release;
5. Operation of release prevention and control equipment and the location of release control materials, as necessary and appropriate; and
6. Protocols for communication with relevant regulatory agency representatives who might be on-site during the remediation effort.

VI. Procedures

The following procedures shall be followed each day, prior to the start of work. This plan shall be available on-site during all construction. The Site Supervisor shall be on-site at any time that HDD is occurring or is planned to occur. The Site Supervisor shall ensure that a briefing is held at the start of each day of HDD to review the appropriate procedures to be followed in case of a frac-out. Questions shall be answered and clarification given on any point over which the HDD operating crew or other employees or contractors have concerns.

A. Drilling

Drilling pressures shall be closely monitored so they do not exceed those needed to penetrate the target formation. Pressure levels shall be monitored randomly by the operator. Pressure levels shall be set at a minimum level to prevent frac-outs. During the pilot bore, the drilled annulus shall be maintained. Cutters and reamers shall be pulled back into previously-drilled sections after each new joint of pipe is added.

Exit and entry pits shall be enclosed by silt fences and straw or similar material. A spill kit shall be on-site and used if a frac-out occurs. A vacuum truck shall be readily available prior to and during all HDD operations. Containment materials (straw, silt fencing, sand bags, frac-out spill kits, etc.) shall be staged on-site at locations where they are readily available and easily mobilized for immediate use in the event of a frac-out. If necessary, barriers (straw bales or sedimentation fences) between the bore site and the edge of the water source, shall be constructed, prior to drilling, to prevent released bentonite material from reaching the water.

Once the drill rig is in place, and drilling begins, the drill operator shall stop work whenever the pressure in the drill rig significantly drops or there is a lack of returns in the entrance pit. If either of these occur, the Site Supervisor shall be informed that a possible frac-out has occurred. The

Site Supervisor and the drill rig operator(s) shall work to coordinate the likely location of the frac-out.

The location of the frac-out shall be recorded and notes made on the location and measures taken to address the concern. The following subsections shall be adhered to when addressing a frac-out situation.

Water containing mud, silt, bentonite, or other pollutants from equipment washing or other activities, shall not be allowed to enter any water course. The bentonite used in the drilling process shall be either disposed of at an approved disposal facility or recycled in an approved manner. Other construction materials and wastes shall be recycled, or disposed of, as appropriate.

B. Vacuum Truck

A vacuum truck shall be staged at a location from which it can be mobilized and relocated so that any place along the drill shot, can be reached by the apparatus, within thirty (30) minutes of information indicating a possible frac-out.

C. Field Response

The response of the field crew to a frac-out release shall be immediate and in accordance with procedures set forth in this plan. All appropriate emergency actions that do not pose additional threats to sensitive resources will be taken, as follows:

1. Boring shall stop immediately;
2. The bore stem shall be pulled back to relieve pressure on the frac-out;
3. The Site Supervisor shall be notified to ensure that management and environmental personnel are notified, adequate response actions are taken and required notifications are made;
4. The Site Supervisor shall evaluate the situation and recommend the type and level of response warranted, including the level of notification required;
5. If the frac-out is minor, easily contained, has not reached the surface and is not threatening any sensitive resources, then a leak-stopping compound shall be employed to block the frac-out. If the use of leak-stopping compound is not fully successful, then the bore stem shall be redirected to a new location along the desired drill path (i.e., where a frac-out has not occurred);
6. If the frac-out has reached the surface, any hazardous materials within the bentonite shall be removed to a depth of 48 inches, contained and properly disposed of, as required by law. A dike or berm may be constructed around the frac-out to entrap released drilling fluid, if necessary. Clean sand shall be deployed and the area returned to pre-project contours; and
7. If a frac-out occurs, reaches the surface and becomes widespread, the Site Supervisor shall authorize a vacuum truck and bulldozer stored off-site to be mobilized. The vacuum

truck may be either positioned at either end of the line of the drill so that the frac-out can be reached by crews on foot, or may be pulled by a bulldozer, so that contaminated soils can be vacuumed up.

D. Response Close-out Procedures

1. When the release has been contained and remediated, response close-out activities shall be conducted at the direction of the Site Supervisor. These activities shall include those below.
2. The recovered drilling fluid shall either be recycled or transported to an approved facility for disposal. No recovered drilling fluids may be discharged into streams, storm drains or any other water source;
3. All frac-out excavation and remediation sites shall be returned to pre-project contours using clean fill, as necessary; and
4. All containment measures (fiber rolls, straw bale, etc.) shall be removed, unless otherwise specified by the Site Supervisor.

E. Resumption of HDD

For minor releases not necessitating external notification, HDD may continue, if full containment is achieved through the use of a leak-stopping compound or redirection of the bore and the cleanup crew remains at the frac-out location throughout the HDD activity. For releases necessitating external notification, HDD activities shall not restart without prior approval from the Site Supervisor.

F. Bore Abandonment

Abandonment of the bore will only be required when all efforts to control the frac-out within the existing directional bore have failed.

VII. Notification

In the event of a frac-out that reaches a water source, the Site Supervisor shall notify safety personnel so they can notify the appropriate regulatory agencies. All agency notifications will occur within 24 hours and proper documentation will be created in a timely and complete manner.

The following information will be provided:

1. Name and telephone number of person reporting;
2. Location of the release;
3. Date and time of release;
4. Type and quantity, estimated size of release;

5. How the release occurred;
6. The type of activity that was occurring around the area of the frac-out;
7. Description of any sensitive areas, and their location in relation to the frac-out; and
8. Description of the methods used to remediate the site.

A. Communicating with Regulatory Agency Personnel

All employees and subcontractors shall adhere to the following protocols when regulatory agency personnel arrive on site. Regulatory agency personnel shall be required to comply with appropriate safety rules. Only the Site Supervisor, safety personnel and environmental should coordinate communication with regulatory agency personnel.

B. Documentation

The Site Supervisor shall record the frac-out event in his or her daily log. The log will include the following:

1. Details on the release event, including an estimate of the amount of bentonite released;
2. The location and time of release;
3. The size of the area impacted, and the success of the remediation action;
4. Name and telephone number of person reporting;
5. Date;
6. How the release occurred;
7. The type of activity that was occurring around the area of the frac-out;
8. Description of any sensitive areas, and their location in relation to the frac-out;
9. Description of the methods used to remediate the site; and
10. Listing of the water-related permits for the project.

VIII. Project Completion and Clean-up

1. All materials and any rubbish-construction debris shall be removed from the construction zone at the end of each work day;
2. Sump pits at bore entry and exits will be filled and returned to natural grade; and
3. All protective measures (fiber rolls, straw bale, silt fence, etc.) will be removed unless otherwise specified by the Site Supervisor.

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Summary: Application Exhibit E - Ecological Assessment Part 4 of 4 electronically filed by
Teresa Orahod on behalf of Dylan F. Borchers