

Photo No. 77.	
Photo Date: 11/11/2024	
Description: Photo of Stream S-JDV-21 looking upstream, facing north.	

Photo No. 78.	
Photo Date: 11/11/2024	
Description: Photo of Stream S-JDV-21 looking downstream, facing south.	

Photo No. 79.	
Photo Date: 11/11/2024	
Description: Photo of Stream S-JDV-21 showing the observed substrate.	

Photo No. 80.	
Photo Date: 11/11/2024	
Description: Photo of Stream S-JDV-22 (Brush Creek) looking upstream, facing southwest.	

Photo No. 81.	
Photo Date: 11/11/2024	
Description: Photo of Stream S-JDV-22 (Brush Creek) looking downstream, facing east.	

Photo No. 82.	
Photo Date: 11/11/2024	
Description: Photo of Stream S-JDV-22 (Brush Creek) showing the observed substrate.	

Photo No. 83.	
Photo Date: 11/12/2025	
Description: Photo of Stream S-TPT-1 looking upstream, facing southwest.	

Photo No. 84.	
Photo Date: 11/12/2025	
Description: Photo of Stream S-TPT-1 looking downstream, facing northeast.	

Photo No. 85.	
Photo Date: 11/12/2025	
Description: Photo of Stream S-TPT-1 showing the observed substrate.	

Photo No. 86.	
Photo Date: 3/20/2026	
Description: Photo of Stream S-TMC-2 looking upstream, facing east.	

Photo No. 87.	
Photo Date: 3/20/2026	
Description: Photo of Stream S-TMC-2 looking downstream, facing west.	

Photo No. 88.	
Photo Date: 3/20/2026	
Description: Photo of Stream S-TMC-2 showing the observed substrate.	

Photo No. 89.	
Photo Date: 11/12/2025	
Description: Representative photo of the existing, maintained right-of-way (ROW) within the eastern portion of the Project Study Area, facing west.	

Photo No. 90.	
Photo Date: 11/11/2024	
Description: Representative photo of the existing, maintained ROW within the Project Study Area, facing southeast.	

Photo No. 91.	
Photo Date: 11/11/2024	
Description: Representative photo of the existing, maintained ROW within the western portion of the Project Study Area, facing east.	

Photo No. 92.	
Photo Date: 3/20/2026	
Description: Representative photo of the eastern end of the Project Study Area, facing north.	

Appendix D

Data Forms

**USACE Wetland Determination Data Forms – Eastern Mountains and
Piedmont Region**

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Sammis-Star 345kV Rebuild City/County: Saline Township, Jefferson County Sampling Date: 2024-11-7
 Applicant/Owner: FirstEnergy State: OH Sampling Point: W-JDV-01_PEM-1
 Investigator(s): Jeff Vandever, Tony Tredway Section, Township, Range: 05 8N 2W
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): Undulating Slope (%): 15 to 20
 Subregion (LRR or MLRA): MLRA 126 of LRR N Lat: 40.5293742 Long: -80.6523336 Datum: WGS84
 Soil Map Unit Name: Westmoreland-Berks complex, 40 to 70 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Covertypes is PEM. Based on the presence of all three parameters, this area is a wetland. existing powerline ROW .	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Hydrogen Sulfide Odor (C1) ☒ High Water Table (A2) ☐ Oxidized Rhizospheres along Living Roots (C3) ☒ Saturation (A3) ☐ Presence of Reduced Iron (C4) ☐ Water Marks (B1) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Sediment Deposits (B2) ☐ Thin Muck Surface (C7) ☐ Drift Deposits (B3) ☐ Other (Explain in Remarks) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☒ No ☐ Depth (inches): <u>8</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The criterion for wetland hydrology is met.		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-JDV-01_PEM-1

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30 ft radius)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	0	= Total Cover		
50% of total cover:	0	20% of total cover:		0
Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
	0	= Total Cover		
50% of total cover:	0	20% of total cover:		0
Herb Stratum (Plot size: 5 ft radius)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	92	= Total Cover		
50% of total cover:	46	20% of total cover:		18.4
Woody Vine Stratum (Plot size: 30 ft radius)				
1.				
2.				
3.				
4.				
5.				
	0	= Total Cover		
50% of total cover:	0	20% of total cover:		0
Dominance Test worksheet:				
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)				
Total Number of Dominant Species Across All Strata: 2 (B)				
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	27	x 1 =	27	
FACW species	65	x 2 =	130	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	92 (A)		157 (B)	
Prevalence Index = B/A = 1.7				
Hydrophytic Vegetation Indicators:				
☒ 1 - Rapid Test for Hydrophytic Vegetation				
☒ 2 - Dominance Test is >50%				
☒ 3 - Prevalence Index is ≤3.0 ¹				
☐ 4 - 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 Four Vegetation Strata:				
Tree —Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub —Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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? Yes ☒ No ☐				
Remarks: (Include photo numbers here or on a separate sheet.) The criterion for hydrophytic vegetation is met.				

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 7	10YR 4/2	85	7.5YR 5/6	15	C	M	Silty Clay Loam	
7 to 20	10YR 6/2	95	7.5YR 5/6	5	C	M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
☐ 2 cm Muck (A10) (**LRR N**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Iron Monosulfide (A18)
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
☐ Umbric Surface (F13) (**MLRA 136, 122**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)
☐ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**MLRA 147**)
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
☐ 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 present):

Type: Not present
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Sammis-Star 345kV Rebuild City/County: Saline Township, Jefferson County Sampling Date: 2024-11-7
 Applicant/Owner: FirstEnergy State: OH Sampling Point: W-JDV-01_UPL-1
 Investigator(s): Jeff Vandever, Tony Tredway Section, Township, Range: 05 8N 2W
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): Undulating Slope (%): 15 to 20
 Subregion (LRR or MLRA): MLRA 126 of LRR N Lat: 40.52928 Long: -80.652212 Datum: WGS84
 Soil Map Unit Name: Westmoreland-Berks complex, 40 to 70 percent slopes 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>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: Coverture is UPL. Based on the absence of all three parameters, this area is an upland. existing powerline ROW .	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Hydrogen Sulfide Odor (C1) ☐ High Water Table (A2) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Saturation (A3) ☐ Presence of Reduced Iron (C4) ☐ Water Marks (B1) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Sediment Deposits (B2) ☐ Thin Muck Surface (C7) ☐ Drift Deposits (B3) ☐ Other (Explain in Remarks) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ 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: The criterion for wetland hydrology is not met.		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-JDV-01_UPL-1

Tree Stratum (Plot size: 30 ft radius)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Ulmus rubra</i>	40	Yes	FAC
2.	<i>Quercus rubra</i>	15	Yes	FACU
3.	<i>Acer rubrum</i>	10	No	FAC
4.				
5.				
6.				
7.				
		65	= Total Cover	
50% of total cover: 32.5		20% of total cover: 13		
Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1.	<i>Rosa multiflora</i>	15	Yes	FACU
2.	<i>Rubus allegheniensis</i>	8	Yes	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		23	= Total Cover	
50% of total cover: 11.5		20% of total cover: 4.6		
Herb Stratum (Plot size: 5 ft radius)				
1.	<i>Solidago canadensis</i>	20	Yes	FACU
2.	<i>Symphotrichum lateriflorum</i>	12	Yes	FACW
3.	<i>Arctium minus</i>	10	Yes	FACU
4.	<i>Galium boreale</i>	8	No	FACU
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		50	= Total Cover	
50% of total cover: 25		20% of total cover: 10		
Woody Vine Stratum (Plot size: 30 ft radius)				
1.				
2.				
3.				
4.				
5.				
		0	= Total Cover	
50% of total cover: 0		20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>12</u>	x 2 = <u>24</u>
FAC species <u>50</u>	x 3 = <u>150</u>
FACU species <u>76</u>	x 4 = <u>304</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>138</u> (A)	<u>478</u> (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree—Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub—Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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? Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

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, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> ___ Histosol (A1) ___ Histic Epipedon (A2) ___ Black Histic (A3) ___ Hydrogen Sulfide (A4) ___ Stratified Layers (A5) ___ 2 cm Muck (A10) (LRR N) ___ Depleted Below Dark Surface (A11) ___ Thick Dark Surface (A12) ___ Iron Monosulfide (A18) ___ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) ___ Sandy Gleyed Matrix (S4) ___ Sandy Redox (S5) ___ Stripped Matrix (S6) | <ul style="list-style-type: none"> ___ Dark Surface (S7) ___ Polyvalue Below Surface (S8) (MLRA 147, 148) ___ Thin Dark Surface (S9) (MLRA 147, 148) ___ Loamy Gleyed Matrix (F2) ___ Depleted Matrix (F3) ___ Redox Dark Surface (F6) ___ Depleted Dark Surface (F7) ___ Redox Depressions (F8) ___ Iron-Manganese Masses (F12) (LRR N, MLRA 136) ___ Umbric Surface (F13) (MLRA 136, 122) ___ Piedmont Floodplain Soils (F19) (MLRA 148) ___ Red Parent Material (F21) (MLRA 127, 147) | <ul style="list-style-type: none"> ___ 2 cm Muck (A10) (MLRA 147) ___ Coast Prairie Redox (A16) ___ (MLRA 147, 148) ___ Piedmont Floodplain Soils (F19) ___ (MLRA 136, 147) ___ Very Shallow Dark Surface (TF12) ___ Other (Explain in Remarks) |
| <p>³Indicators of hydrophytic vegetation wetland hydrology must be present, unless disturbed or problematic.</p> | | |

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

Hydric Soil Present? Yes No **X**

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Sammis-Star 345kV Rebuild City/County: Irondale, Jefferson County Sampling Date: 2024-11-7
 Applicant/Owner: FirstEnergy State: OH Sampling Point: W-JDV-02_PEM-1
 Investigator(s): Jeff Vandever, Tony Tredway Section, Township, Range: 23 8N 2W
 Landform (hillslope, terrace, etc): Depression Local relief (concave, convex, none): Concave Slope (%): 2 to 5
 Subregion (LRR or MLRA): MLRA 126 of LRR N Lat: 40.5280186 Long: -80.6955203 Datum: WGS84
 Soil Map Unit Name: Gilpin-Coshocton silt loams, 15 to 25 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Covertypes is PEM. Based on the presence of all three parameters, this area is a wetland. existing powerline ROW .	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Hydrogen Sulfide Odor (C1) ☒ High Water Table (A2) ☐ Oxidized Rhizospheres along Living Roots (C3) ☒ Saturation (A3) ☐ Presence of Reduced Iron (C4) ☐ Water Marks (B1) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Sediment Deposits (B2) ☐ Thin Muck Surface (C7) ☐ Drift Deposits (B3) ☐ Other (Explain in Remarks) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☒ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☒ No ☐ Depth (inches): <u>4</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The criterion for wetland hydrology is met.		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-JDV-02_PEM-1

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>100%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</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>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>60</u> (A)</td> <td><u>90</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.5</u>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>60</u> (A)	<u>90</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>30</u>	x 1 = <u>30</u>																	
FACW species <u>30</u>	x 2 = <u>60</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>60</u> (A)	<u>90</u> (B)																	
20% of total cover: <u>0</u>																		
Sapling/Shrub Stratum (Plot size: 15 ft radius)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = Total Cover		Hydrophytic Vegetation Indicators: ☒ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ 4 - 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.														
20% of total cover: <u>0</u>																		
Herb Stratum (Plot size: 5 ft radius)																		
1. <i>Juncus effusus</i>	25	Yes	FACW															
2. <i>Carex lurida</i>	15	Yes	OBL															
3. <i>Typha angustifolia</i>	10	No	OBL															
4. <i>Scirpus atrovirens</i>	5	No	OBL															
5. <i>Poa palustris</i>	5	No	FACW															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% of total cover: <u>30</u>		60 = Total Cover		Definitions of Four Vegetation Strata: Tree —Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub —Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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.														
20% of total cover: <u>12</u>																		
Woody Vine Stratum (Plot size: 30 ft radius)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = Total Cover		Hydrophytic Vegetation Present? Yes ☒ No _____														
20% of total cover: <u>0</u>																		

Remarks: (Include photo numbers here or on a separate sheet.)
 The criterion for hydrophytic vegetation is met.

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 9	10YR 3/1	95	10YR 6/4	5	C	M	Silty Clay	
9 to 18	10YR 4/1	90	7.5YR 6/4	10	C	M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
☐ 2 cm Muck (A10) (**LRR N**)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Iron Monosulfide (A18)
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
☐ Umbric Surface (F13) (**MLRA 136, 122**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)
☐ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**MLRA 147**)
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
☐ 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 present):

Type: Not present
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Sammis-Star 345kV Rebuild City/County: Irondale, Jefferson County Sampling Date: 2024-11-7
 Applicant/Owner: FirstEnergy State: OH Sampling Point: W-JDV-02_UPL-1
 Investigator(s): Jeff Vandever, Tony Tredway Section, Township, Range: 23 8N 2W
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5 to 10
 Subregion (LRR or MLRA): MLRA 126 of LRR N Lat: 40.5280986 Long: -80.6954965 Datum: WGS84
 Soil Map Unit Name: Gilpin-Coshocton silt loams, 15 to 25 percent slopes 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>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: Covertypes is UPL. Based on the absence of all three parameters, this area is an upland.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Hydrogen Sulfide Odor (C1) ☐ High Water Table (A2) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Saturation (A3) ☐ Presence of Reduced Iron (C4) ☐ Water Marks (B1) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Sediment Deposits (B2) ☐ Thin Muck Surface (C7) ☐ Drift Deposits (B3) ☐ Other (Explain in Remarks) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ 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: The criterion for wetland hydrology is not met.		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-JDV-02_UPL-1

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	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>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = 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>22</u></td> <td>x 3 = <u>66</u></td> </tr> <tr> <td>FACU species <u>95</u></td> <td>x 4 = <u>380</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>117</u> (A)</td> <td><u>446</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.8</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>22</u>	x 3 = <u>66</u>	FACU species <u>95</u>	x 4 = <u>380</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>117</u> (A)	<u>446</u> (B)
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>22</u>	x 3 = <u>66</u>																	
FACU species <u>95</u>	x 4 = <u>380</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>117</u> (A)	<u>446</u> (B)																	
20% of total cover: <u>0</u>																		
Sapling/Shrub Stratum (Plot size: 15 ft radius)																		
1. <i>Rubus allegheniensis</i>	15	Yes	FACU															
2. <i>Ligustrum vulgare</i>	12	Yes	FACU															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: <u>13.5</u>		27 = Total Cover		Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - 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.														
20% of total cover: <u>5.4</u>																		
Herb Stratum (Plot size: 5 ft radius)																		
1. <i>Poa pratensis</i>	25	Yes	FACU															
2. <i>Verbascum thapsus</i>	20	Yes	FACU															
3. <i>Setaria pumila</i>	15	Yes	FAC															
4. <i>Galium boreale</i>	10	No	FACU															
5. <i>Solidago canadensis</i>	8	No	FACU															
6. <i>Dichanthelium clandestinum</i>	7	No	FAC															
7. <i>Taraxacum officinale</i>	5	No	FACU															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% of total cover: <u>45</u>		90 = Total Cover		Definitions of Four Vegetation Strata: Tree —Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub —Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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.														
20% of total cover: <u>18</u>																		
Woody Vine Stratum (Plot size: 30 ft radius)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = Total Cover		Hydrophytic Vegetation Present? Yes _____ No <u>X</u>														
20% of total cover: <u>0</u>																		

Remarks: (Include photo numbers here or on a separate sheet.)
 The criterion for hydrophytic vegetation is not met.

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 17	10YR 5/4	100					Silt Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
☐ 2 cm Muck (A10) (**LRR N**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Iron Monosulfide (A18)
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
☐ Umbric Surface (F13) (**MLRA 136, 122**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)
☐ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**MLRA 147**)
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
☐ 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 present):

Type: Fill
Depth (inches): 17

Hydric Soil Present? Yes _____ No **X**

Remarks:

The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Sammis-Star 345kV Rebuild City/County: Hammondsville, Jefferson County Sampling Date: 2024-11-11
 Applicant/Owner: FirstEnergy State: OH Sampling Point: W-JDV-03 PEM-1
 Investigator(s): Jeff Vandever, Tony Tredway Section, Township, Range: 29 8N 2W
 Landform (hillslope, terrace, etc): Depression Local relief (concave, convex, none): Concave Slope (%): 5 to 10
 Subregion (LRR or MLRA): MLRA 124 of LRR N Lat: 40.5360926 Long: -80.727658 Datum: WGS84
 Soil Map Unit Name: Westmoreland-Berks complex, 40 to 70 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ 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>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Covertypes is PEM. Based on the presence of all three parameters, this area is a wetland. Existing powerline ROW .	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Hydrogen Sulfide Odor (C1) ☒ High Water Table (A2) ☐ Oxidized Rhizospheres along Living Roots (C3) ☒ Saturation (A3) ☐ Presence of Reduced Iron (C4) ☐ Water Marks (B1) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Sediment Deposits (B2) ☐ Thin Muck Surface (C7) ☐ Drift Deposits (B3) ☐ Other (Explain in Remarks) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>3</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The criterion for wetland hydrology is met.		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-JDV-03_PEM-1

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30 ft radius)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	0	= Total Cover		
	50% of total cover: 0		20% of total cover: 0	
Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
	0	= Total Cover		
	50% of total cover: 0		20% of total cover: 0	
Herb Stratum (Plot size: 5 ft radius)				
1.	<i>Dichanthelium clandestinum</i>	35	Yes	FAC
2.	<i>Juncus effusus</i>	25	Yes	FACW
3.	<i>Carex lurida</i>	15	No	OBL
4.	<i>Scirpus cyperinus</i>	12	No	FACW
5.	<i>Typha angustifolia</i>	8	No	OBL
6.	<i>Solidago rugosa</i>	5	No	FAC
7.				
8.				
9.				
10.				
11.				
	100	= Total Cover		
	50% of total cover: 50		20% of total cover: 20	
Woody Vine Stratum (Plot size: 30 ft radius)				
1.				
2.				
3.				
4.				
5.				
	0	= Total Cover		
	50% of total cover: 0		20% of total cover: 0	
Dominance Test worksheet:				
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)				
Total Number of Dominant Species Across All Strata: 2 (B)				
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	23	x 1 =	23	
FACW species	37	x 2 =	74	
FAC species	40	x 3 =	120	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	100 (A)		217 (B)	
Prevalence Index = B/A = 2.2				
Hydrophytic Vegetation Indicators:				
1 - Rapid Test for Hydrophytic Vegetation				
☒ 2 - Dominance Test is >50%				
☒ 3 - Prevalence Index is ≤3.0 ¹				
4 - 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 Four Vegetation Strata:				
Tree —Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub —Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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? Yes ☒ No ☐				
Remarks: (Include photo numbers here or on a separate sheet.) The criterion for hydrophytic vegetation is met.				

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 4	10YR 4/2	100					Silty Clay Loam	
4 to 17	10YR 3/1	85	7.5YR 6/4	15	C	M	Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
☐ 2 cm Muck (A10) (**LRR N**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Iron Monosulfide (A18)
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
☐ Umbric Surface (F13) (**MLRA 136, 122**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)
☐ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**MLRA 147**)
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
☐ 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 present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Sammis-Star 345kV Rebuild City/County: Toronto, Jefferson County Sampling Date: 2024-11-11
 Applicant/Owner: FirstEnergy State: OH Sampling Point: W-JDV-03 UPL-1
 Investigator(s): Tony Tredway, Jeff Vandever Section, Township, Range: 29 8N 2W
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1 to 10
 Subregion (LRR or MLRA): MLRA 124 of LRR N Lat: 40.5361211 Long: -80.7275246 Datum: WGS84
 Soil Map Unit Name: Westmoreland-Berks complex, 40 to 70 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Covertypes is UPL. Based on the absence of all three parameters, this area is an upland. Existing powerline ROW .	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Hydrogen Sulfide Odor (C1) ☐ High Water Table (A2) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Saturation (A3) ☐ Presence of Reduced Iron (C4) ☐ Water Marks (B1) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Sediment Deposits (B2) ☐ Thin Muck Surface (C7) ☐ Drift Deposits (B3) ☐ Other (Explain in Remarks) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☐ No ☒ Depth (inches): Saturation Present? Yes ☐ No ☒ Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The criterion for wetland hydrology is not met.		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-JDV-03_UPL-1

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	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)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <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>40</u></td><td>x 3 = <u>120</u></td></tr> <tr><td>FACU species <u>60</u></td><td>x 4 = <u>240</u></td></tr> <tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr> <tr><td>Column Totals: <u>100</u> (A)</td><td><u>360</u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>3.6</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>40</u>	x 3 = <u>120</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>360</u> (B)
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>40</u>	x 3 = <u>120</u>																	
FACU species <u>60</u>	x 4 = <u>240</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>100</u> (A)	<u>360</u> (B)																	
20% of total cover: <u>0</u>																		
Sapling/Shrub Stratum (Plot size: 15 ft radius)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = Total Cover		Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - 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.														
20% of total cover: <u>0</u>																		
Herb Stratum (Plot size: 5 ft radius)																		
1. <i>Solidago canadensis</i>	50	Yes	FACU															
2. <i>Dichanthelium clandestinum</i>	20	Yes	FAC															
3. <i>Setaria pumila</i>	10	No	FAC															
4. <i>Symphytotrichum pilosum</i>	10	No	FAC															
5. <i>Ambrosia artemisiifolia</i>	10	No	FACU															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% of total cover: <u>50</u>		100 = Total Cover		Definitions of Four Vegetation Strata: Tree —Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub —Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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.														
20% of total cover: <u>20</u>																		
Woody Vine Stratum (Plot size: 30 ft radius)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>0</u>		0 = Total Cover		Hydrophytic Vegetation Present? Yes _____ No <u>X</u>														
20% of total cover: <u>0</u>																		

Remarks: (Include photo numbers here or on a separate sheet.)
 The criterion for hydrophytic vegetation is not met.

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 4	10YR 5/3	100					Clay	Compacted
4 to 16	10YR 7/3	100					Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
☐ 2 cm Muck (A10) (**LRR N**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Iron Monosulfide (A18)
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
☐ Umbric Surface (F13) (**MLRA 136, 122**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)
☐ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**MLRA 147**)
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
☐ 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 present):

Type: Hard pack
Depth (inches): 16

Hydric Soil Present? Yes _____ No ☒

Remarks:

The criterion for hydric soil is not met.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-COR		Exhibit 18 OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
Project/Site: <u>Sammis-Star 345kV Rebuild</u> City/County: <u>Hammondsville, Jefferson Cnty</u> Sampling Date: <u>2025-11-13</u>		
Applicant/Owner: <u>FirstEnergy</u> State: <u>OH</u> Sampling Point: <u>W-TPT-01_PEM-1</u>		
Investigator(s): <u>Tony Tredway, Emily Niper</u> Section, Township, Range: <u>06 11N 3W</u>		
Landform (hillslope, terrace, etc): <u>Depression</u> Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0 to 1</u>		
Subregion (LRR or MLRA): <u>MLRA 124 of LRR N</u> Lat: <u>40.5534939</u> Long: <u>-80.755305</u> Datum: <u>WGS84</u>		
Soil Map Unit Name: <u>Coshocton silt loam, 1 to 7 percent slopes</u> NWI Classification: <u>None</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)		
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐		Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Covertypes is PEM. Based on the presence of all three parameters, this area is a wetland. ATV/ORV impacts observed.		
HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☒ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Hydrogen Sulfide Odor (C1) ☒ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☒ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>3</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The criterion for wetland hydrology is met.		

VEGETATION (Four Strata) – Use scientific names of plants.

Exhibit 18
Sampling Point: W-TPT-01_PEM-1

Tree Stratum (Plot size: <u>30 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			

0 = Total Cover
50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lindera benzoin</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			

10 = Total Cover
50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot size: <u>5 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Cyperus esculentus</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Carex annectens</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Juncus effusus</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
4. <u>Alisma subcordatum</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
5. <u>Solidago canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
6. <u>Microstegium vimineum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			

75 = Total Cover
50% of total cover: 37.5 20% of total cover: 15

Woody Vine Stratum (Plot size: <u>30 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			

0 = Total Cover
50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>55</u>	x 2 = <u>110</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>85</u> (A)	<u>185</u> (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree—Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub—Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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?

Yes ☒ No

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 2	10YR 4/4	100					Silt Loam	
2 to 6	10YR 5/2	80	10YR 5/8	20	C	M/PL	Clay Loam	
6 to 12	N 5/	90	10YR 5/8	10	C	PL	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
☐ 2 cm Muck (A10) (**LRR N**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Iron Monosulfide (A18)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7)

- ☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
☐ Loamy Mucky Mineral (F1) (**MLRA 136**)
☒ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
☐ Umbric Surface (F13) (**MLRA 122, 136**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)
☐ Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**MLRA 147**)
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
☐ Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: Clay hardpan
 Depth (inches): 12

Hydric Soil Present? Yes ☒ No ☐**Remarks:**

The criterion for hydric soil is met.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-COR		Exhibit 18 OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)																																		
Project/Site: <u>Sammis-Star 345kV Rebuild</u> City/County: <u>Hammondsville, Jefferson Cnty</u> Sampling Date: <u>2025-11-13</u>																																				
Applicant/Owner: <u>FirstEnergy</u> State: <u>OH</u> Sampling Point: <u>W-TPT-01 UPL-1</u>																																				
Investigator(s): <u>Tony Tredway, Emily Niper</u> Section, Township, Range: <u>06 11N 3W</u>																																				
Landform (hillslope, terrace, etc): <u>Flat</u> Local relief (concave, convex, none): <u>Convex</u> Slope (%): <u>1 to 3</u>																																				
Subregion (LRR or MLRA): <u>MLRA 124 of LRR N</u> Lat: <u>40.5535375</u> Long: <u>-80.7553602</u> Datum: <u>WGS84</u>																																				
Soil Map Unit Name: <u>Coshocton silt loam, 1 to 7 percent slopes</u> NWI Classification: <u>None</u>																																				
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)																																				
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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.																																				
<table border="1" style="width:100%; border-collapse: collapse;"><tr><td>Hydrophytic Vegetation Present?</td><td>Yes ☐</td><td>No ☒</td></tr><tr><td>Hydric Soil Present?</td><td>Yes ☐</td><td>No ☒</td></tr><tr><td>Wetland Hydrology Present?</td><td>Yes ☐</td><td>No ☒</td></tr></table>		Hydrophytic Vegetation Present?	Yes ☐	No ☒	Hydric Soil Present?	Yes ☐	No ☒	Wetland Hydrology Present?	Yes ☐	No ☒	<table border="1" style="width:100%; border-collapse: collapse;"><tr><td>Is the Sampled Area within a Wetland?</td><td>Yes ☐</td><td>No ☒</td></tr></table>	Is the Sampled Area within a Wetland?	Yes ☐	No ☒																						
Hydrophytic Vegetation Present?	Yes ☐	No ☒																																		
Hydric Soil Present?	Yes ☐	No ☒																																		
Wetland Hydrology Present?	Yes ☐	No ☒																																		
Is the Sampled Area within a Wetland?	Yes ☐	No ☒																																		
Remarks: Covertypes is UPL. Based on the absence of all three parameters, this area is an upland.																																				
HYDROLOGY																																				
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width:100%;"><tr><td>☐ Surface Water (A1)</td><td>☐ Hydrogen Sulfide Odor (C1)</td></tr><tr><td>☐ High Water Table (A2)</td><td>☐ Oxidized Rhizospheres on Living Roots (C3)</td></tr><tr><td>☐ Saturation (A3)</td><td>☐ Presence of Reduced Iron (C4)</td></tr><tr><td>☐ Water Marks (B1)</td><td>☐ Recent Iron Reduction in Tilled Soils (C6)</td></tr><tr><td>☐ Sediment Deposits (B2)</td><td>☐ Thin Muck Surface (C7)</td></tr><tr><td>☐ Drift Deposits (B3)</td><td>☐ Other (Explain in Remarks)</td></tr><tr><td>☐ Algal Mat or Crust (B4)</td><td></td></tr><tr><td>☐ Iron Deposits (B5)</td><td></td></tr><tr><td>☐ Inundation Visible on Aerial Imagery (B7)</td><td></td></tr><tr><td>☐ Water-Stained Leaves (B9)</td><td></td></tr><tr><td>☐ Aquatic Fauna (B13)</td><td></td></tr></table>		☐ Surface Water (A1)	☐ Hydrogen Sulfide Odor (C1)	☐ High Water Table (A2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation (A3)	☐ Presence of Reduced Iron (C4)	☐ Water Marks (B1)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Sediment Deposits (B2)	☐ Thin Muck Surface (C7)	☐ Drift Deposits (B3)	☐ Other (Explain in Remarks)	☐ Algal Mat or Crust (B4)		☐ Iron Deposits (B5)		☐ Inundation Visible on Aerial Imagery (B7)		☐ Water-Stained Leaves (B9)		☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%;"><tr><td>☐ Surface Soil Cracks (B6)</td></tr><tr><td>☐ Sparsely Vegetated Concave Surface (B8)</td></tr><tr><td>☐ Drainage Patterns (B10)</td></tr><tr><td>☐ Moss Trim Lines (B16)</td></tr><tr><td>☐ Dry-Season Water Table (C2)</td></tr><tr><td>☐ Crayfish Burrows (C8)</td></tr><tr><td>☐ Saturation Visible on Aerial Imagery (C9)</td></tr><tr><td>☐ Stunted or Stressed Plants (D1)</td></tr><tr><td>☐ Geomorphic Position (D2)</td></tr><tr><td>☐ Shallow Aquitard (D3)</td></tr><tr><td>☐ Microtopographic Relief (D4)</td></tr><tr><td>☐ FAC-Neutral Test (D5)</td></tr></table>	☐ Surface Soil Cracks (B6)	☐ Sparsely Vegetated Concave Surface (B8)	☐ Drainage Patterns (B10)	☐ Moss Trim Lines (B16)	☐ Dry-Season Water Table (C2)	☐ Crayfish Burrows (C8)	☐ Saturation Visible on Aerial Imagery (C9)	☐ Stunted or Stressed Plants (D1)	☐ Geomorphic Position (D2)	☐ Shallow Aquitard (D3)	☐ Microtopographic Relief (D4)	☐ FAC-Neutral Test (D5)
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																				
Remarks: The criterion for wetland hydrology is not met.																																				

VEGETATION (Four Strata) – Use scientific names of plants.

 Exhibit 18
 Sampling Point: **W-TPT-01 UPL-1**

Tree Stratum (Plot size: 30 ft radius)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer saccharum</i>	25	Yes	FACU
2.	<i>Liriodendron tulipifera</i>	20	Yes	FACU
3.	<i>Quercus rubra</i>	10	No	FACU
4.	<i>Quercus alba</i>	10	No	FACU
5.	<i>Fagus grandifolia</i>	10	No	FACU
6.				
7.				

50% of total cover: 37.5 75 = Total Cover
 20% of total cover: 15

Sapling/Shrub Stratum (Plot size: 15 ft radius)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Liriodendron tulipifera</i>	10	Yes	FACU
2.	<i>Acer saccharum</i>	10	Yes	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 10 20 = Total Cover
 20% of total cover: 4

Herb Stratum (Plot size: 5 ft radius)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Osmorhiza claytonii</i>	10	Yes	FACU
2.	<i>Polystichum acrostichoides</i>	5	Yes	FACU
3.	<i>Microstegium vimineum</i>	5	Yes	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

50% of total cover: 10 20 = Total Cover
 20% of total cover: 4

Woody Vine Stratum (Plot size: 30 ft radius)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Rosa multiflora</i>	10	Yes	FACU
2.				
3.				
4.				
5.				

50% of total cover: 5 10 = Total Cover
 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 8 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5% (A/B)

Prevalence Index worksheet:

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>120</u>	x 4 = <u>480</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>125</u> (A)	<u>495</u> (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is $\leq 3.0^1$
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree—Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub—Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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?

Yes _____ No **X**

Remarks: (Include photo numbers here or on a separate sheet.)

The criterion for hydrophytic vegetation is not met.

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
	0 to 4	10YR 4/4					Silty Clay	
	4 to 20	10YR 5/6	100				Clay	

²Location: PL=Pore Lining, M=Matrix.

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) (**LRR N**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)

— 2 cm Muck (A10) **(MLRA 147)**
 — Coast Prairie Redox (A16)
 (MLRA 147, 148)
 — Piedmont Floodplain Soils (F19)
 (MLRA 136, 147)
 — Red Parent Material (F21)
 (outside MLRA 127, 147, 148)
 — Very Shallow Dark Surface (F22)
 — Other (Explain in Remarks)

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

Type: Not present

Depth (inches): _____

Hydric Soil Present? Yes No **X**

The criterion for hydric soil is not met.

OEPA ORAM Field Forms

Background Information

Name: Jeff Vandever	
Date: 11/7/2024	
Affiliation: TRC Environmental Corporation	
Address: 1382 West Ninth Street, Suite 400 Cleveland, OH 44113	
Phone Number: (724) 814-0028	
e-mail address: Jvandever@trccompanies.com	
Name of Wetland: W-JDV-01	
Vegetation Communit(ies): PEM	
HGM Class(es): Slope	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Lat/Long or UTM Coordinate	40.529337, -80.652277
USGS Quad Name	See Report
County	Jefferson
Township	Saline
Section and Subsection	5 R2W
Hydrologic Unit Code	050301011106
Site Visit	11/7/2024
National Wetland Inventory Map	See Report
Ohio Wetland Inventory Map	See Report
Soil Survey	See Report
Delineation report/map	See Report

Name of Wetland: W-JDV-01	
Wetland Size (acres, hectares):	0.03 acre (0.01 ha)
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 22	Category: 1

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: FirstEnergy , Sammis-Star 345kV Rebuild Project Rater(s): Jeff Vandever, Tony Tredway Date: 2024-11-07

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

4	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

10	14
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

- | | |
|---|---|
| ☐ ditch | ☐ point source (nonstormwater) |
| ☐ tile | ☒ filling/grading |
| ☐ dike | ☐ road bed/RR track |
| ☐ weir | ☐ dredging |
| ☐ stormwater input | ☐ other |

8	22
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

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

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| ☐ mowing | ☐ shrub/sapling removal |
| ☐ grazing | ☐ herbaceous/aquatic bed removal |
| ☒ clearcutting | ☐ sedimentation |
| ☒ selective cutting | ☐ dredging |
| ☒ woody debris removal | ☐ farming |
| ☐ toxic pollutants | ☐ nutrient enrichment |

22
subtotal this page

Site: FirstEnergy , Sammis-Star 345kV Rebuild Project Rater(s): Jeff Vandever, Tony Tredway Date: 2024-11-07

22

subtotal first page

0

22

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0

22

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic Bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

22

CATEGORY 1**End of Quantitative Rating. Complete Categorization Worksheets.**

ORAM Summary Worksheet

Exhibit 18

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES ☒ NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES ☒ NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES ☒ NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES ☒ NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES ☒ NO	If yes, Category 1.
	Question 6. Bogs	YES ☒ NO	If yes, Category 3.
	Question 7. Fens	YES ☒ NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES ☒ NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES ☒ NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	4	
	Metric 3. Hydrology	10	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	0	
	TOTAL SCORE	22	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	☒ NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	☒ NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	☒ NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☒ YES Wetland is assigned to the appropriate category based on the scoring range	NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☒ NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☒ NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	☒ Category 1	☐ Category 2	☐ Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Jeff Vandever	
Date: 11/7/2024	
Affiliation: TRC Environmental Corporation	
Address: 1382 West Ninth Street, Suite 400 Cleveland, OH 44113	
Phone Number: (724) 814-0028	
e-mail address: Jvandever@trccompanies.com	
Name of Wetland: W-JDV-02	
Vegetation Communit(ies): PEM	
HGM Class(es): Depression	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Lat/Long or UTM Coordinate	40.528017, -80.695549
USGS Quad Name	See Report
County	Jefferson
Township	Saline
Section and Subsection	23 R2W
Hydrologic Unit Code	050301010804
Site Visit	11/7/2024
National Wetland Inventory Map	See Report
Ohio Wetland Inventory Map	See Report
Soil Survey	See Report
Delineation report/map	See Report

Name of Wetland: W-JDV-02	
Wetland Size (acres, hectares):	0.075 acre (0.03 ha)
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 24	Category: 1

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: FirstEnergy , Sammis-Star 345kV Rebuild Project	Rater(s): Jeff Vandever, Tony Tredway	Date: 2024-11-07
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

3	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

11	14
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

- | | |
|---|---|
| ☒ ditch | ☐ point source (nonstormwater) |
| ☒ tile | ☐ filling/grading |
| ☐ dike | ☐ road bed/RR track |
| ☐ weir | ☐ dredging |
| ☐ stormwater input | ☐ other |

8	22
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

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

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| ☐ mowing | ☐ shrub/sapling removal |
| ☐ grazing | ☐ herbaceous/aquatic bed removal |
| ☒ clearcutting | ☐ sedimentation |
| ☒ selective cutting | ☐ dredging |
| ☒ woody debris removal | ☐ farming |
| ☐ toxic pollutants | ☐ nutrient enrichment |

22
subtotal this page

Site: FirstEnergy , Sammis-Star 345kV Rebuild Project **Rater(s):** Jeff Vandever, Tony Tredway **Date:** 2024-11-07

22

subtotal first page

0 22

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

2 24

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic Bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

24

CATEGORY 1**End of Quantitative Rating. Complete Categorization Worksheets.**

ORAM Summary Worksheet

Exhibit 18

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES ☐ NO ☒	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES ☐ NO ☒	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES ☐ NO ☒	If yes, Category 3.
	Question 4. Significant bird habitat	YES ☐ NO ☒	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES ☐ NO ☒	If yes, Category 1.
	Question 6. Bogs	YES ☐ NO ☒	If yes, Category 3.
	Question 7. Fens	YES ☐ NO ☒	If yes, Category 3.
	Question 8a. Old Growth Forest	YES ☐ NO ☒	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES ☐ NO ☒	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES ☐ NO ☒	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES ☐ NO ☐	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES ☐ NO ☐	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES ☐ NO ☒	If yes, Category 3
	Question 11. Relict Wet Prairies	YES ☐ NO ☒	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	2	
	TOTAL SCORE	24	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	☒ NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	☒ NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	☒ NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☒ YES Wetland is assigned to the appropriate category based on the scoring range	NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☒ NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☒ NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	☒ Category 1	☐ Category 2	☐ Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Jeff Vandever	
Date: 11/11/2024	
Affiliation: TRC Environmental Corporation	
Address: 1382 West Ninth Street, Suite 400 Cleveland, OH 44113	
Phone Number: (724) 814-0028	
e-mail address: Jvandever@trccompanies.com	
Name of Wetland: W-JDV-03	
Vegetation Communit(ies): PEM	
HGM Class(es): Riverine	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Lat/Long or UTM Coordinate	40.536037, -80.727645
USGS Quad Name	See Report
County	Jefferson
Township	Saline
Section and Subsection	29 R2W
Hydrologic Unit Code	050301010804
Site Visit	11/11/2024
National Wetland Inventory Map	See Report
Ohio Wetland Inventory Map	See Report
Soil Survey	See Report
Delineation report/map	See Report

Name of Wetland: W-JDV-03	
Wetland Size (acres, hectares):	0.04 acre (0.02 ha)
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 24	Category: 1

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: FirstEnergy , Sammis-Star 345kV Rebuild Project	Rater(s): Jeff Vandevveer, Tony Tredway	Date: 2024-11-11
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

5	5
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

11	16
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

- | | |
|---|---|
| ☐ ditch | ☐ point source (nonstormwater) |
| ☐ tile | ☒ filling/grading |
| ☐ dike | ☐ road bed/RR track |
| ☐ weir | ☐ dredging |
| ☐ stormwater input | ☐ other |

7	23
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

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

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| ☐ mowing | ☐ shrub/sapling removal |
| ☐ grazing | ☐ herbaceous/aquatic bed removal |
| ☒ clearcutting | ☐ sedimentation |
| ☒ selective cutting | ☐ dredging |
| ☒ woody debris removal | ☐ farming |
| ☐ toxic pollutants | ☐ nutrient enrichment |

23
subtotal this page

Site: FirstEnergy , Sammis-Star 345kV Rebuild Project

Rater(s): Jeff Vandever, Tony Tredway

Date: 2024-11-11

23

subtotal first page

0 23

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1 24

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic Bed
☐ Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

24

CATEGORY 1**End of Quantitative Rating. Complete Categorization Worksheets.**

ORAM Summary Worksheet

Exhibit 18

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES ☒ NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES ☒ NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES ☒ NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES ☒ NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES ☒ NO	If yes, Category 1.
	Question 6. Bogs	YES ☒ NO	If yes, Category 3.
	Question 7. Fens	YES ☒ NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES ☒ NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES ☒ NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	1	
	TOTAL SCORE	24	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	☒ NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	☒ NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	☒ NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☒ YES Wetland is assigned to the appropriate category based on the scoring range	NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☒ NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☒ NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	☒ Category 1	☐ Category 2	☐ Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Tony Tredway	
Date: 11/13/2025	
Affiliation: TRC Environmental Corporation	
Address: 1382 West Ninth Street, Suite 400 Cleveland, OH 44113	
Phone Number: (304) 205-3097	
e-mail address: TTredway@trccompanies.com	
Name of Wetland: W-TPT-1	
Vegetation Communit(ies): PEM	
HGM Class(es): Depression	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Lat/Long or UTM Coordinate	40.553494, -80.755305
USGS Quad Name	Salineville
County	Jefferson
Township	Brush Creek
Section and Subsection	06 11N
Hydrologic Unit Code	050301010804
Site Visit	11/13/2025
National Wetland Inventory Map	See Report
Ohio Wetland Inventory Map	See Report
Soil Survey	See Report
Delineation report/map	See Report

Name of Wetland: W-TPT-1	
Wetland Size (acres, hectares):	0.1 acre (0.04 hectare)
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Figure 5: Delineated Resources Map and Surface Water Delineation Report for further details.	
Comments, Narrative Discussion, Justification of Category Changes: Per the Ohio Environmental Protection Agency's Ohio Rapid Assessment Method for Wetlands Manual v. 5.0, the Category 2 includes wetlands of moderate quality, otherwise known as Modified Category 2. As the same avoidance, minimization, and mitigation standards apply to the entire category, wetlands that fall within the scoring range of Modified 2 such as wetland W-TPT-01 are reported as Category 2.	
Final score : 39	Category: 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: FirstEnergy, Sammis-Star 345 kV Rebuild**Rater(s):** Tony Tredway, Emily Niper**Date:** 2025-11-13**1****1**

max 6 pts.

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

13**14**

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

8**22**

max 30 pts.

subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|---|--|
| ☐ ditch | ☐ point source (nonstormwater) |
| ☐ tile | ☐ filling/grading |
| ☐ dike | ☐ road bed/RR track |
| ☐ weir | ☐ dredging |
| ☐ stormwater input | ☒ other: access road |

13**35**

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

- ☐ Excellent (7)
☐ Very good (6)
☒ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☐ Poor (1)

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

- ☐ None or none apparent (9)
☒ Recovered (6)
☐ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| ☐ mowing | ☐ shrub/sapling removal |
| ☐ grazing | ☐ herbaceous/aquatic bed removal |
| ☒ clearcutting | ☐ sedimentation |
| ☒ selective cutting | ☐ dredging |
| ☒ woody debris removal | ☐ farming |
| ☐ toxic pollutants | ☐ nutrient enrichment |

35

subtotal this page



Site: FirstEnergy, Sammis-Star 345 kV Rebuild	Rater(s): Tony Tredway, Emily Niper	Date: 2025-11-13
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35

subtotal first page

0 35

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4 39

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic Bed
- ☐ 2 Emergent
- ☐ 0 Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

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CATEGORY 2

End of Quantitative Rating. Complete Categorization Worksheets.



ORAM Summary Worksheet

Exhibit 18

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES ☒ NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES ☒ NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES ☒ NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES ☒ NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES ☒ NO	If yes, Category 1.
	Question 6. Bogs	YES ☒ NO	If yes, Category 3.
	Question 7. Fens	YES ☒ NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES ☒ NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES ☐ NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES ☐ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES ☒ NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	13	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	13	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	4	
	TOTAL SCORE	39	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	☒ NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	☒ NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	☒ NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	☒ NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	☒ YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☒ NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	☒ Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

OEPA Stream Forms



Primary Headwater Habitat Evaluation Form

Exhibit 18 **36****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-01. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301011106 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.14LENGTH OF STREAM REACH (ft) 200 LAT. 40.529164 LONG. -80.652032 RIVER MILE DATE 2024-11-07 SCORER JDV COMMENTS **NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:**☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	<u> </u>	☒ SILT [3 pts]	<u>45</u>
☐ BOULDER (>256 mm) [16 pts]	<u> </u>	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>20</u>
☐ BEDROCK [16 pts]	<u> </u>	☐ FINE DETRITUS [3 pts]	<u> </u>
☐ COBBLE (65-256 mm) [12 pts]	<u>10</u>	☐ CLAY or HARDPAN [0 pts]	<u> </u>
☒ GRAVEL (2-64 mm) [9 pts]	<u>25</u>	☐ MUCK [0 pts]	<u> </u>
☐ SAND (<2 mm) [6 pts]	<u> </u>	☐ ARTIFICIAL [3 pts]	<u> </u>

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 10

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

4

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

☐ > 4.0 meters (> 13') [30 pts]	☒ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS

AVERAGE BANKFULL WIDTH (meters):

1.5**HHEI Metric Points**Substrate
Max = 40**16**

A + B

Pool Depth
Max = 30**5**Bankfull
Width
Max=30**15****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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS **FLOODPLAIN QUALITY**

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Ohio RiverDistance from Evaluated Stream 1.38 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-06 Quantity: 0.2

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 35Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): Field Measures: Temp (°C) 17.8 Dissolved Oxygen (mg/l) pH (S.U.) 8.11 Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): Salamanders Observed? (Y/N) N Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddisflies

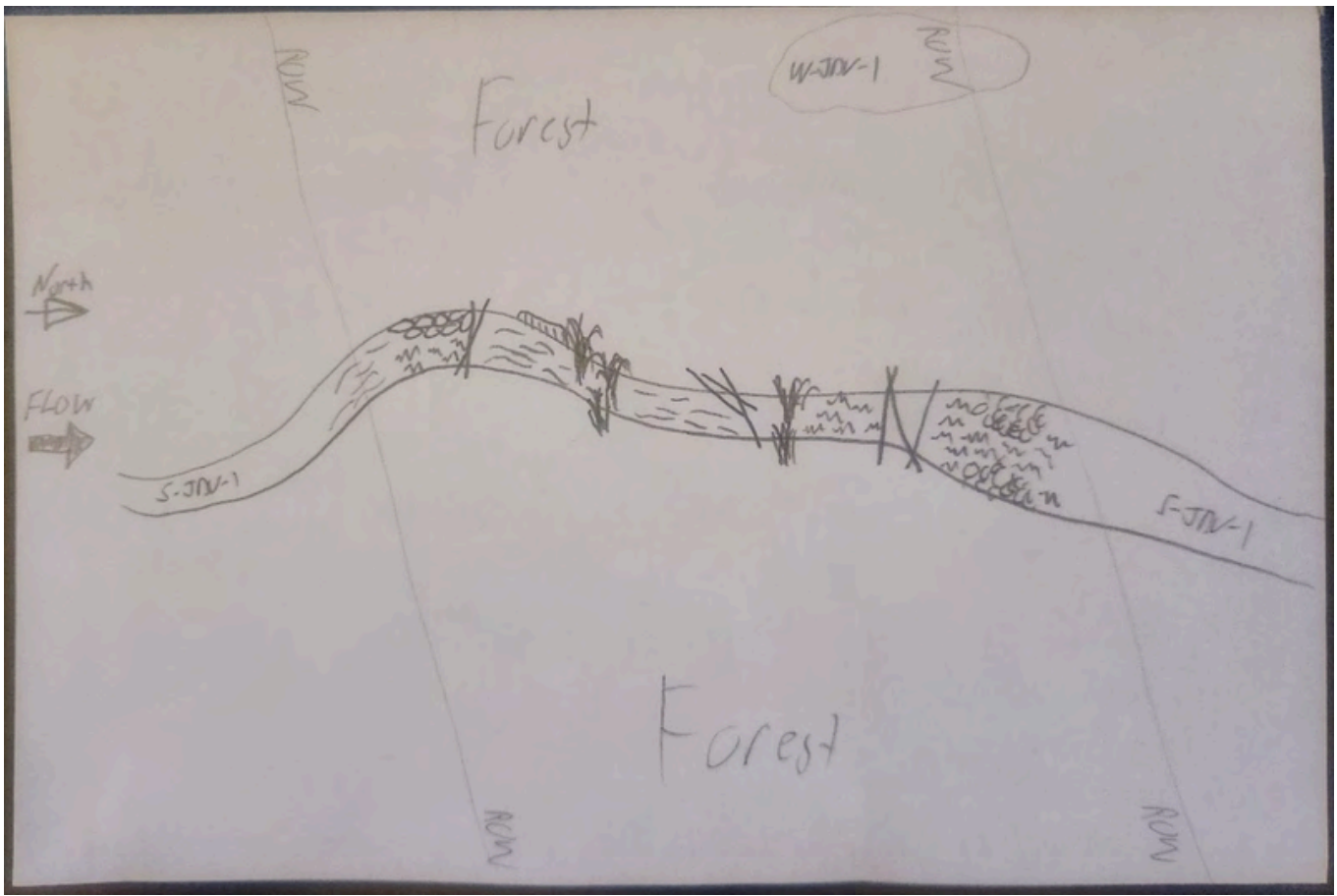
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **51**

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

SITE NAME/LOCATION S-JDV-02. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301011106 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.15LENGTH OF STREAM REACH (ft) 200 LAT. 40.529493 LONG. -80.65061 RIVER MILE N/ADATE 2024-11-07 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:**☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☐ SILT [3 pts]	<u>30</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>10</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>25</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>35</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 25

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI Metric Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☒ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30**15**

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

6

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]
☒ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30**20**

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

1.8**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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Ohio RiverDistance from Evaluated Stream 1.63 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-06 Quantity: 0.2

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 45Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): Field Measures: Temp (°C) 16.5 Dissolved Oxygen (mg/l) pH (S.U.) 7.96 Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): Salamanders Observed? (Y/N) N Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddisflies

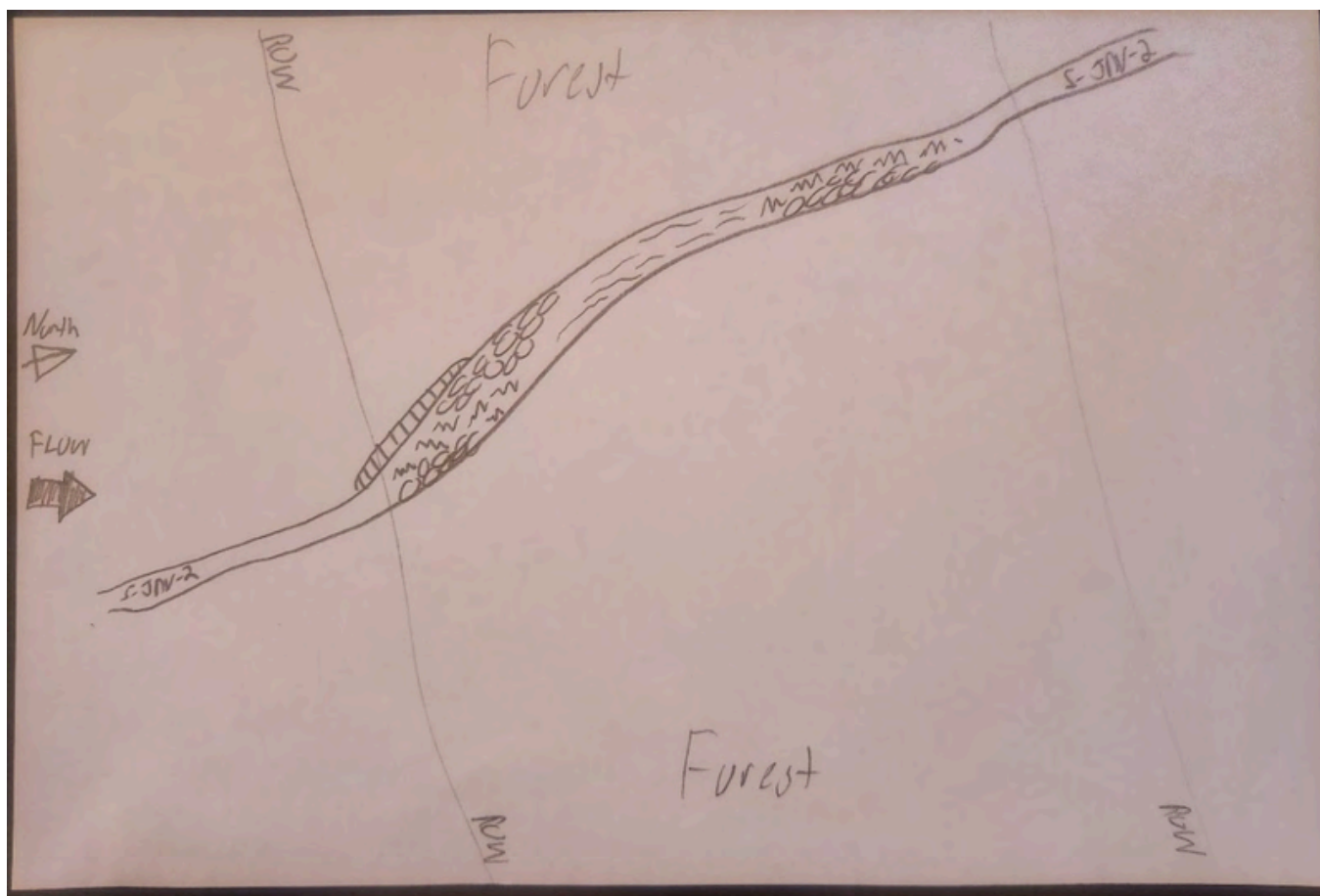
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **21****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-03. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301011106 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.002LENGTH OF STREAM REACH (ft) 200 LAT. 40.5305004 LONG. -80.6422232 RIVER MILE N/ADATE 2024-11-07 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate **TYPE** boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>60</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	___
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>5</u>	☐ CLAY or HARDPAN [0 pts]	<u>15</u>
☒ GRAVEL (2-64 mm) [9 pts]	<u>20</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 5

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI
Metric
Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

0Pool Depth
Max = 30**0**

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

1Bankfull
Width
Max=30**5****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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☒ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Ohio RiverDistance from Evaluated Stream 0.73 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-06 Quantity: 0.2

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 100Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _Field Measures: Temp (°C) 0 Dissolved Oxygen (mg/l) _ pH (S.U.) 0 Conductivity (µmhos/cm) _Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

No water present at time of observation**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _Salamanders Observed? (Y/N) N Species observed (if known): _Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _

Comments Regarding Biology:

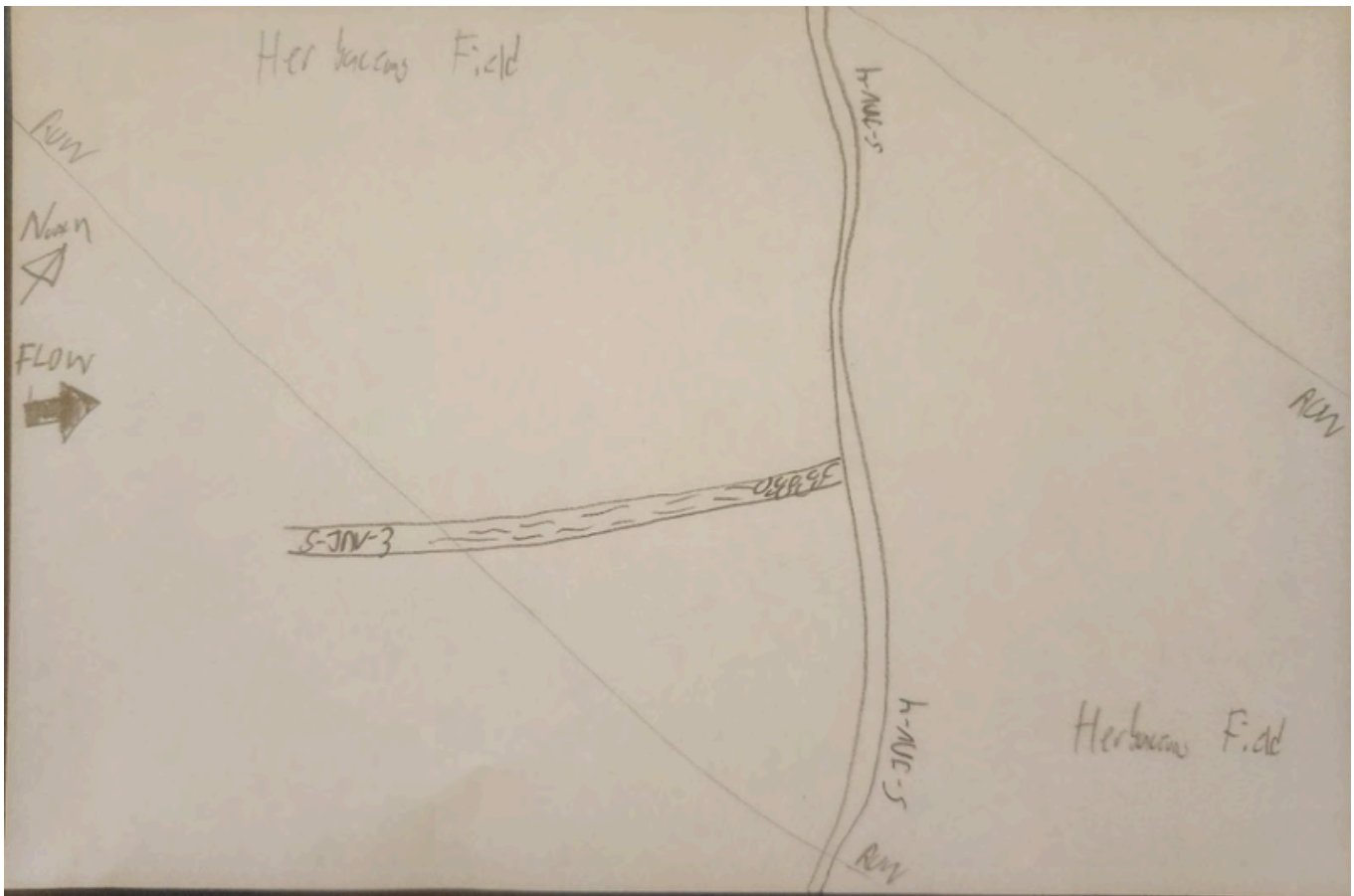
None observed

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

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **16****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-04. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301011106 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.001LENGTH OF STREAM REACH (ft) 200 LAT. 40.5305814877 LONG. -80.6420871 RIVER MILE N/ADATE 2024-11-07 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ ☐ BLDR SLABS [16 pts]	___	☒ ☐ SILT [3 pts]	<u>65</u>
☐ ☐ BOULDER (>256 mm) [16 pts]	___	☐ ☐ LEAF PACK/WOODY DEBRIS [3 pts]	___
☐ ☐ BEDROCK [16 pts]	___	☐ ☐ FINE DETRITUS [3 pts]	___
☐ ☐ COBBLE (65-256 mm) [12 pts]	___	☐ ☒ CLAY or HARDPAN [0 pts]	<u>20</u>
☐ ☐ GRAVEL (2-64 mm) [9 pts]	<u>15</u>	☐ ☐ MUCK [0 pts]	___
☐ ☐ SAND (<2 mm) [6 pts]	___	☐ ☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 0

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

3

TOTAL NUMBER OF SUBSTRATE TYPES:

3**HHEI
Metric
Points**Substrate
Max = 40**6**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

2Pool Depth
Max = 30**5**

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.8Bankfull
Width
Max=30**5****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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☒ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Ohio RiverDistance from Evaluated Stream 0.72 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-06 Quantity: 0.2

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 100Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): __Field Measures: Temp (°C) 17.8 Dissolved Oxygen (mg/l) __ pH (S.U.) 7.06 Conductivity (µmhos/cm) __Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

Oily sheen on surface of water**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): __Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): __Salamanders Observed? (Y/N) N Species observed (if known): __Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Scuds; beetles

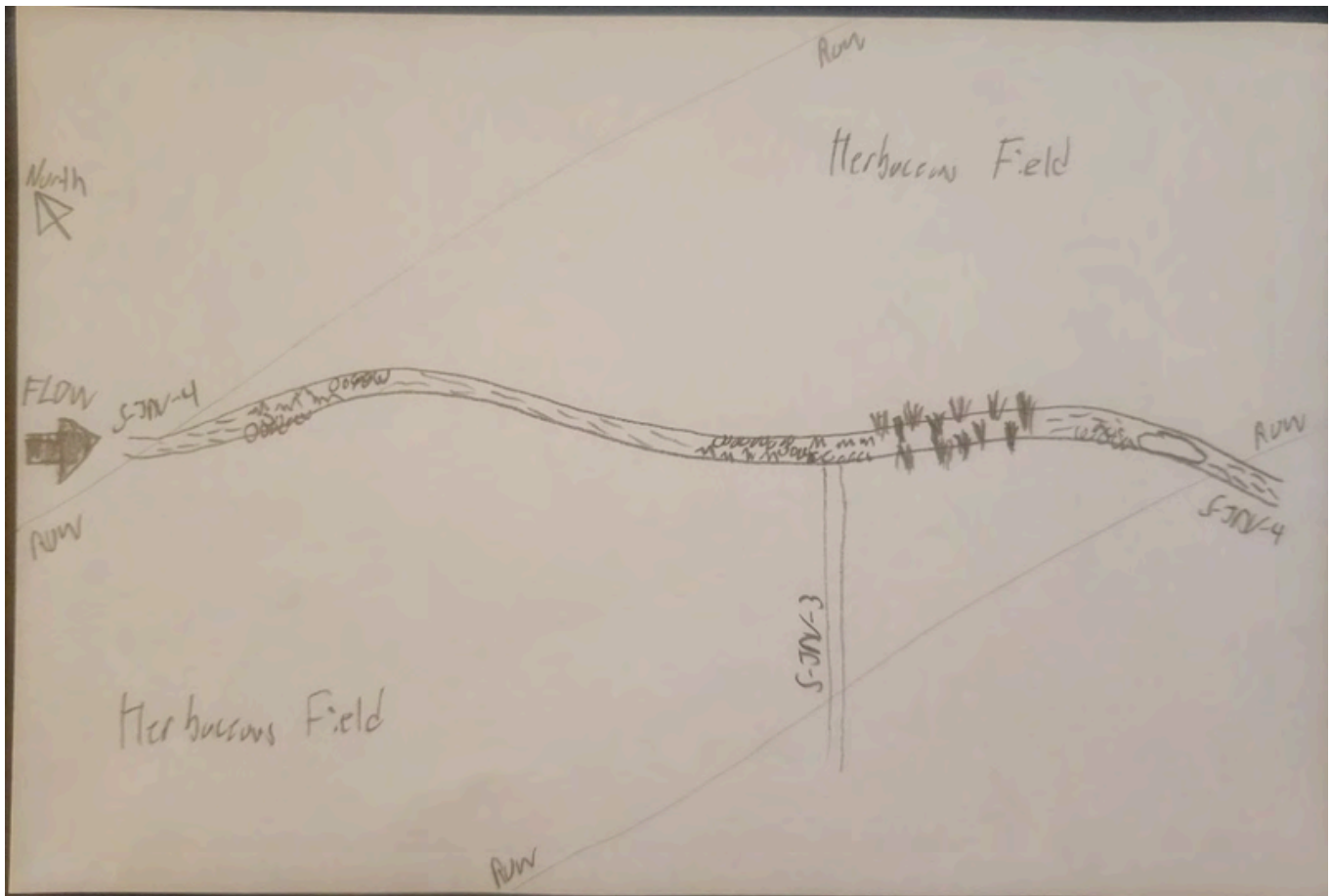
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

Exhibit 18
QHEI Score: 48.25

Stream & Location: Hollow Rock Run (S-JDV-5)

RM: 2.54

Date: 2024-11-07

Saline Township, Jefferson County, Ohio

Scorers Full Name & Affiliation: Jeff Vandever, TRC

River Code: N/A

STORET #: N/A

Lat./Long.:
(NAD83 - decimal)

40.527421 / -80.673383

Office verified location ☒

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

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY	
☐ BLDR/SLABS [10]		☐ HARDPAN [4]		☐ POOL RIFFLE		☐ LIMESTONE [1]		☐ HEAVY [-2]	Substrate 14 Maximum 20

Comments

Cobble, gravel, silt, detritus

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.

AMOUNT

Check ONE (Or 2 & average)

1 UNDERCUT BANKS [1]		0 POOLS > 70CM [2]		0 OXBOWS, BACKWATERS [1]		0 AQUATIC MACROPHYTES [1]		0 LOGS OR WOODY DEBRIS [1]		AMOUNT	
1	OVERHANGING VEGETATION [1]	0	ROOTWADS [1]	0		0		0		☐ EXTENSIVE >75% [11]	Cover 8 Maximum 20
1	SHALLOWS (IN SLOW WATER) [1]	0		0		0		0		☐ MODERATE 25-75% [7]	
2	ROOTMATS [1]	1	BOULDERS [1]	1		1		1		☒ SPARSE 5-<25% [3]	
0										☐ NEARLY ABSENT <5% [1]	

Comments

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

SINUOSITY		DEVELOPMENT		CHANNELIZATION		STABILITY		Channel	
☐ HIGH [4]		☐ EXCELLENT [7]		☐ NONE [6]		☐ HIGH [3]		☐ HIGH [3]	Channel 9.5 Maximum 20
☐ MODERATE [3]		☐ GOOD [5]		☒ RECOVERED [4]		☒ MODERATE [2]		☒ MODERATE [2]	
☐ LOW [2]		☒ FAIR [3]		☒ RECOVERING [3]		☐ LOW [1]		☐ LOW [1]	
☒ NONE [1]		☐ POOR [1]		☐ 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		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		L R		Channel	
☐ EROSION		☐ L R	☒ WIDE > 50M [4]	☒ L R	☒ FOREST, SWAMP [3]	☐ L R	☐ CONSERVATION TILLAGE [1]	☐ HIGH [3]	Channel 6.75 Maximum 10
☐ NONE / LITTLE [3]		☐ MODERATE 10-50M [3]		☐ SHRUB OR OLD FIELD [2]		☒ URBAN OR INDUSTRIAL [0]		☒ MODERATE [2]	
☒ MODERATE [2]		☒ NARROW 5-10M [2]		☐ RESIDENTIAL, PARK, NEW FIELD [1]		☐ MINING / CONSTRUCTION [0]		☐ LOW [1]	
☒ HEAVY / SEVERE [1]		☐ VERY NARROW < 5M [1]		☐ FENCED PASTURE [1]					
		☐ NONE [0]		☐ OPEN PASTURE, ROWCROP [0]					

Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH		CHANNEL WIDTH		CURRENT VELOCITY		Recreation Potential		Pool /	
Check ONE (ONLY!)		Check ONE (Or 2 & average)		Check ALL that apply		Primary Contact Secondary Contact (circle one and comment on back)		Current	
☐ > 1M [6]		☐ POOL WIDTH > RIFFLE WIDTH [2]		☐ TORRENTIAL [-1]		☐ SLOW [1]		☐ MODERATE [1]	Pool / 3 Current Maximum 12
☐ 0.7-<1M [4]		☒ POOL WIDTH = RIFFLE WIDTH [1]		☐ VERY FAST [1]		☐ INTERSTITIAL [-1]		☐ INTERMITTENT [-2]	
☐ 0.4-<0.7 [2]		☐ POOL WIDTH < RIFFLE WIDTH [0]		☐ FAST [1]		☐ EDDIES [1]			
☒ 0.2-<0.4M [1]				☒ MODERATE [1]					
☐ < 0.2M [0]									

Comments

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		Riffle /	
☐ BEST AREAS >10CM [2]		☐ MAXIMUM > 50CM [2]		☐ STABLE (E.G., COBBLE, BOULDER) [2]		☐ NONE [2]		☐ NONE [2]	Riffle / 3 Run Maximum 8
☒ BEST AREAS 5-10CM [1]		☒ MAXIMUM < 50CM [1]		☒ MOD. STABLE (E.G., LARGE GRAVEL) [1]		☐ LOW [1]		☐ MODERATE [0]	
☐ BEST AREAS <5CM [METRIC=0]				☐ UNSTABLE (E.G., FINE GRAVEL, SAND) [0]		☒ MODERATE [0]		☐ EXTENSIVE [-1]	

Comments

6] GRADIENT (75.8 ft/mi)		DRAINAGE AREA		%POOL:		%GLIDE:		Gradient	
		☐ VERY LOW - LOW [2-4]			20				Gradient 4 Maximum 10
	(5.56 mi ²)	☐ MODERATE [6-10]			50				
		☒ HIGH - VERY HIGH [10-6]					30		

AJ SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
☒ WADE
☐ L. LINE
☐ OTHER

STAGE

- 1st-sample pass-- 2nd
☐ HIGH
☐ UP
☒ NORMAL
☐ LOW
☐ DRY

DISTANCE

- ☐ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☒ OTHER
 .07 meters

CLARITY

- 1st --sample pass-- 2nd
☐ < 20 CM
☐ 20-<40 CM
☐ 40-70 CM
☐ > 70 CM/ CTB
☐ SECCHI DEPTH

CANOPY

- ☐ > 85%- OPEN
☒ 55-<85%
☐ 30-<55%
☐ 10-<30%
☐ <10%- CLOSED

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
 ARMOURD / SLUMPS
 ISLANDS / SCoured
 IMPOUNDED / DESICCATED
 FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

EJ EJ ISSUES

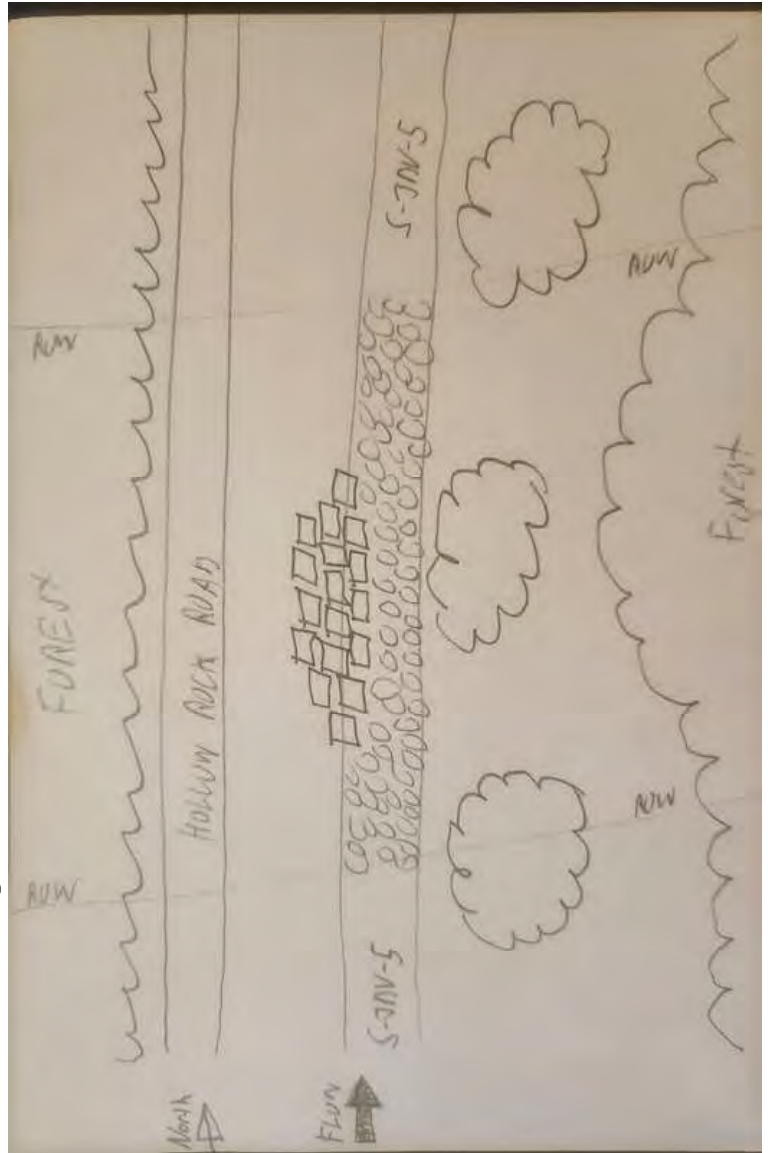
- WWTP / CSO / NPDES / INDUSTRY
 HARDENED / URBAN / DIRT & GRIM
 CONTAMINATED / LANDFILL
 BMPS-CONSTRUCTION- SEDIMENT
 LOGGING / IRRIGATION / COOLING
 BANK / EROSION / SURFACE
 FALSE BANK / MANURE / LAGOON
 WASH H₂O / TILE / H₂O TABLE
 ACID / MINE / QUARRY / FLOW
 NATURAL / WETLAND / STAGNANT
 PARK / GOLF / LAWN / HOME
 ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- $\bar{x}$ width 5 m
 $\bar{x}$ depth 0.4 m
 max. depth 0.7m
 $\bar{x}$ bankfull width 5m
 bankfull $\bar{x}$ depth 1m
 W/D ratio 12.500
 bankfull max. depth 1m
 floodprone $\bar{x}^2$ width
 entrench. ratio
 Legacy Tree:

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.
 S-JDV-5 (Hollow Rock Run) parallels Hollow Rock Road and flows south to north; temperature = 18.7°C; pH = 8.2

Stream Drawing:





Primary Headwater Habitat Evaluation Form

Exhibit 18 **25****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-06. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.05LENGTH OF STREAM REACH (ft) 200 LAT. 40.526878 LONG. -80.683544 RIVER MILE N/ADATE 2024-11-07 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:**☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>45</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	___
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>25</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>30</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 25

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

3**HHEI Metric Points**Substrate
Max = 40**15**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30**5**

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

2

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30**5**

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.6**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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
☐	☐	Mature Forest, Wetland
☒	☒	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture

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

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☒ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Yellow Creek

Distance from Evaluated Stream 3.68 miles

☐ CWH Name: ____

Distance from Evaluated Stream ____

☐ EWH Name: ____

Distance from Evaluated Stream ____

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

USGS Quadrangle Name: See Report

NRCS Soil Map Page: See Report NRCS Soil Map Stream Order See Report

County: Jefferson

Township / City: Saline

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-06 Quantity: 0.2

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 90

Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results):

Field Measures: Temp (°C) 20.1 Dissolved Oxygen (mg/l) pH (S.U.) 7.84 Conductivity (µmhos/cm)

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

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):

Salamanders Observed? (Y/N) N Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddisflies; scuds

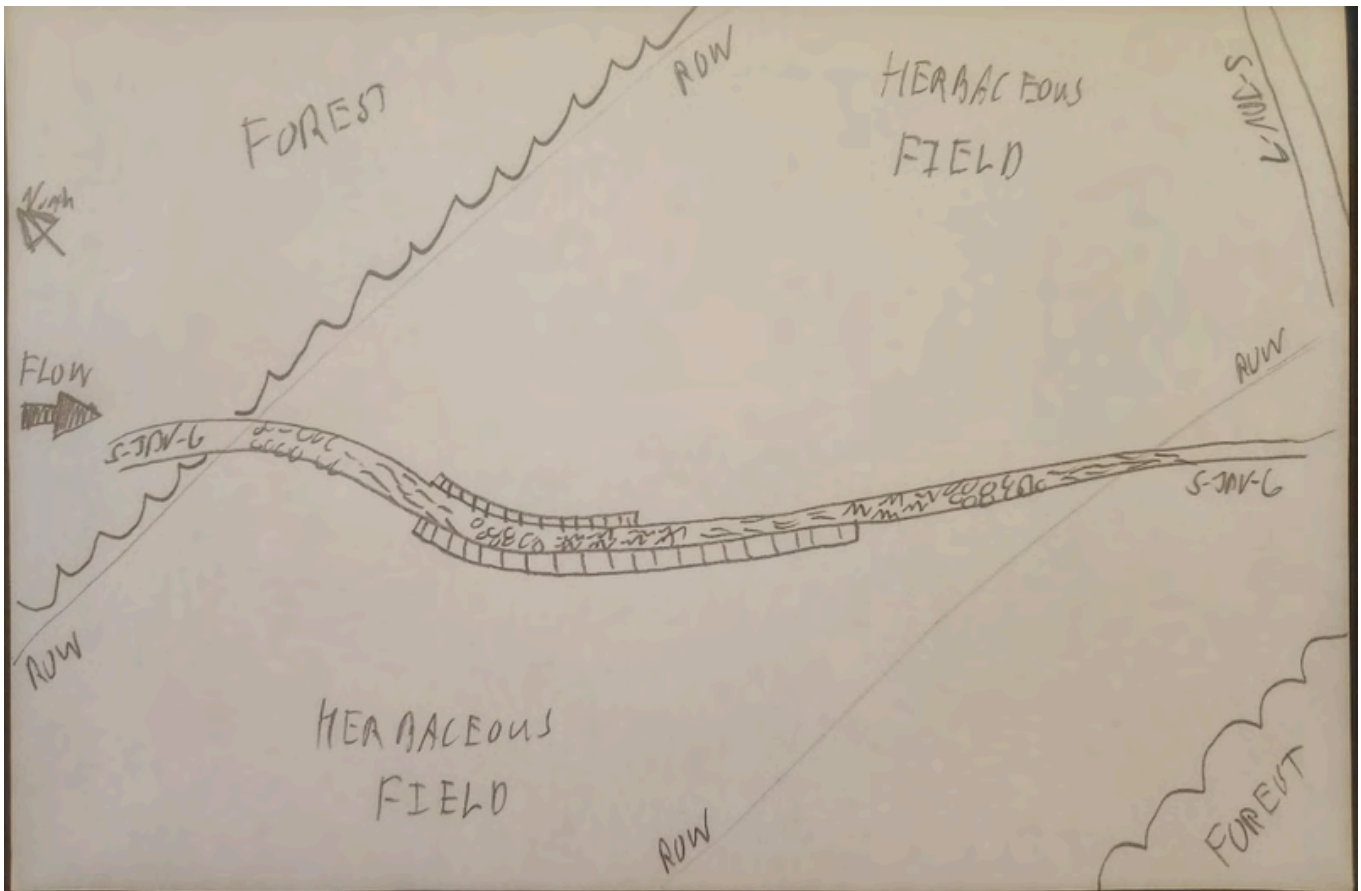
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **21**

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

SITE NAME/LOCATION S-JDV-07, FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.056LENGTH OF STREAM REACH (ft) 200 LAT. 40.526845 LONG. -80.682904 RIVER MILE N/ADATE 2024-11-07 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	_____	☒ SILT [3 pts]	<u>55</u>
☐ BOULDER (>256 mm) [16 pts]	_____	☐ LEAF PACK/WOODY DEBRIS [3 pts]	_____
☐ BEDROCK [16 pts]	_____	☐ FINE DETRITUS [3 pts]	_____
☐ COBBLE (65-256 mm) [12 pts]	<u>5</u>	☐ CLAY or HARDPAN [0 pts]	<u>15</u>
☒ GRAVEL (2-64 mm) [9 pts]	<u>25</u>	☐ MUCK [0 pts]	_____
☐ SAND (<2 mm) [6 pts]	_____	☐ ARTIFICIAL [3 pts]	_____

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 5

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI
Metric
Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

0Pool Depth
Max = 30**0**

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.7Bankfull
Width
Max=30**5****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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☒ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 3.62 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-06 Quantity: 0.2

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 100Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _Field Measures: Temp (°C) 0 Dissolved Oxygen (mg/l) _ pH (S.U.) 0 Conductivity (µmhos/cm) _Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

No water present at time of observation**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _Salamanders Observed? (Y/N) N Species observed (if known): _Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _

Comments Regarding Biology:

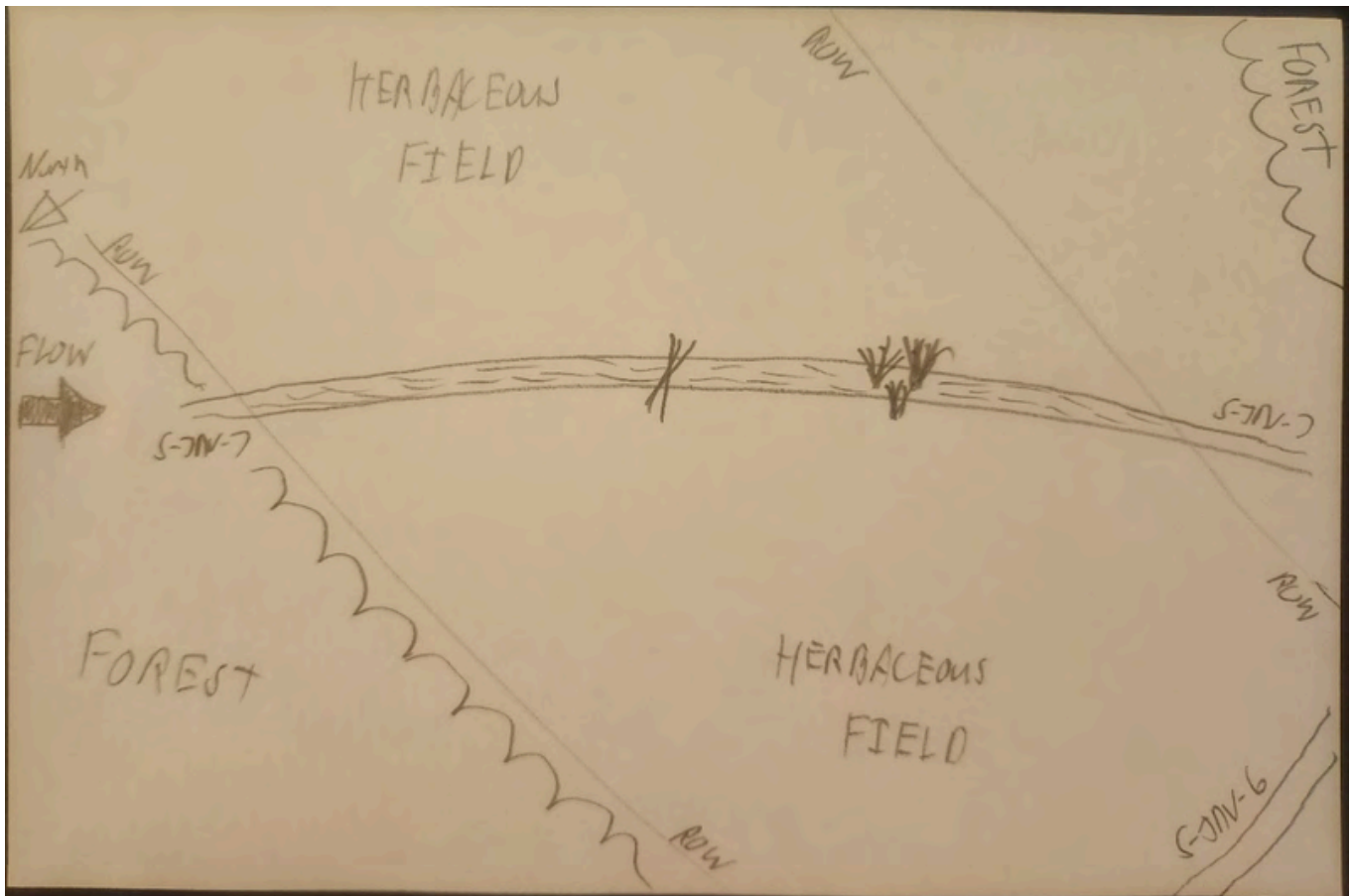
None observed

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

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **36**

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

SITE NAME/LOCATION S-JDV-08. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.053LENGTH OF STREAM REACH (ft) 200 LAT. 40.5281969877 LONG. -80.6955882 RIVER MILE N/ADATE 2024-11-07 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>45</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>20</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>10</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>25</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 10

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI
Metric
Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

4Pool Depth
Max = 30**5**

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

☐ > 4.0 meters (> 13') [30 pts]	☒ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

1.5Bankfull
Width
Max=30**15****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	(Per Bank)
☐	☒	Wide >10m
☒	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 3.29 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-06 Quantity: 0.2

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 100Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): Field Measures: Temp (°C) 20.5 Dissolved Oxygen (mg/l) pH (S.U.) 7.7 Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): Salamanders Observed? (Y/N) N Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddisflies; scuds

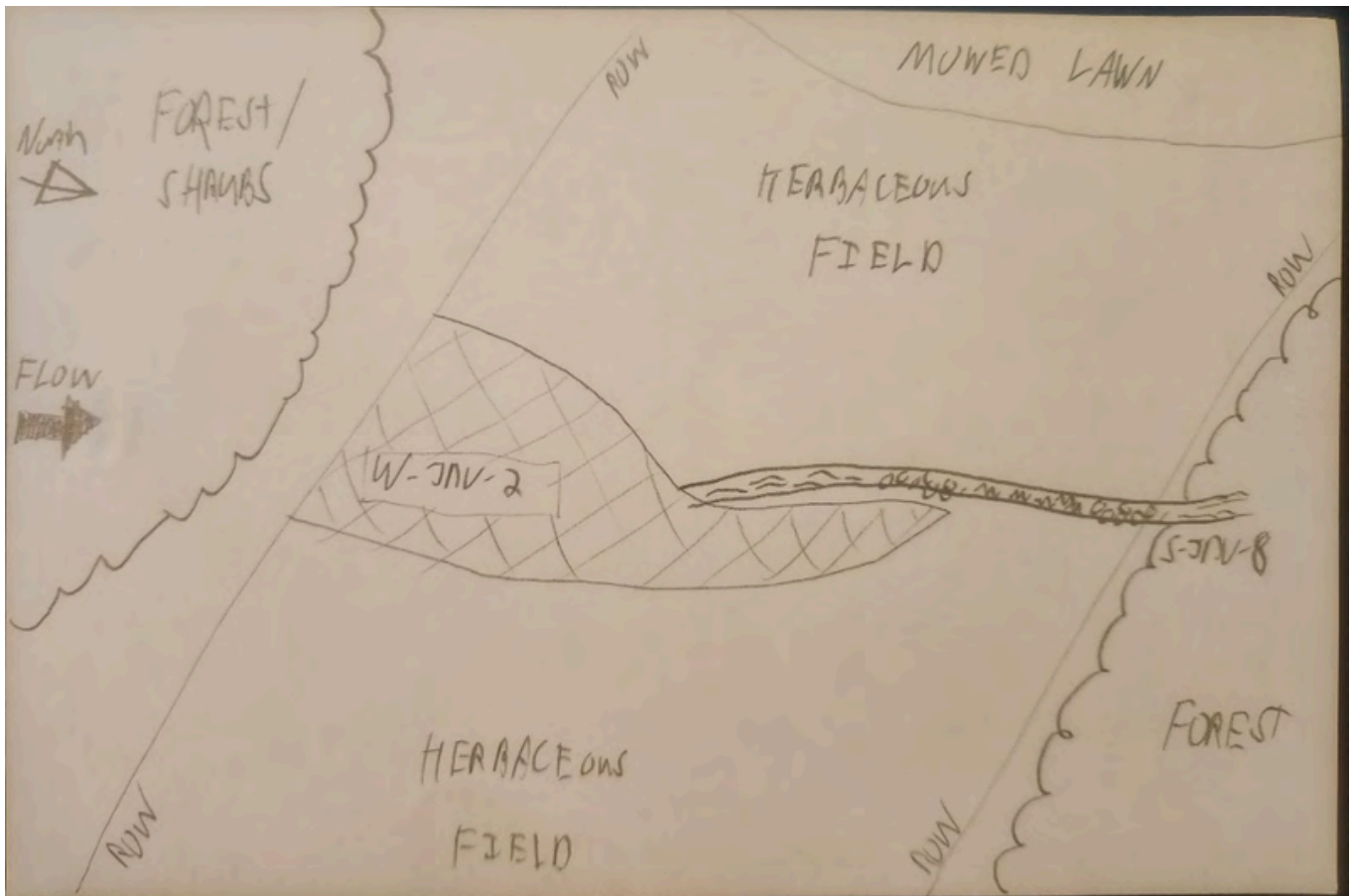
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **70****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-09. FirstEnergy - Sammis-Star 345kV Rebuild. Tarburner RunSITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.54LENGTH OF STREAM REACH (ft) 200 LAT. 40.5283471877 LONG. -80.6989103 RIVER MILE N/ADATE 2024-11-08 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☐ SILT [3 pts]	<u>15</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>5</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☒ COBBLE (65-256 mm) [12 pts]	<u>35</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>45</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 35

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

21

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI
Metric
Points**Substrate
Max = 40**25**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☒ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

15Pool Depth
Max = 30**25**

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]
☒ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

1.6Bankfull
Width
Max=30**20****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	(Per Bank)
☐	☒	Wide >10m
☐	☐	Moderate 5-10m
☒	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☒	Immature Forest, Shrub or Old Field	☒	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 3.24 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-07 Quantity: 0.1

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 65Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): Field Measures: Temp (°C) 11.8 Dissolved Oxygen (mg/l) pH (S.U.) 7.96 Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) Y Species observed (if known): Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): Salamanders Observed? (Y/N) N Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddisflies; crane flies

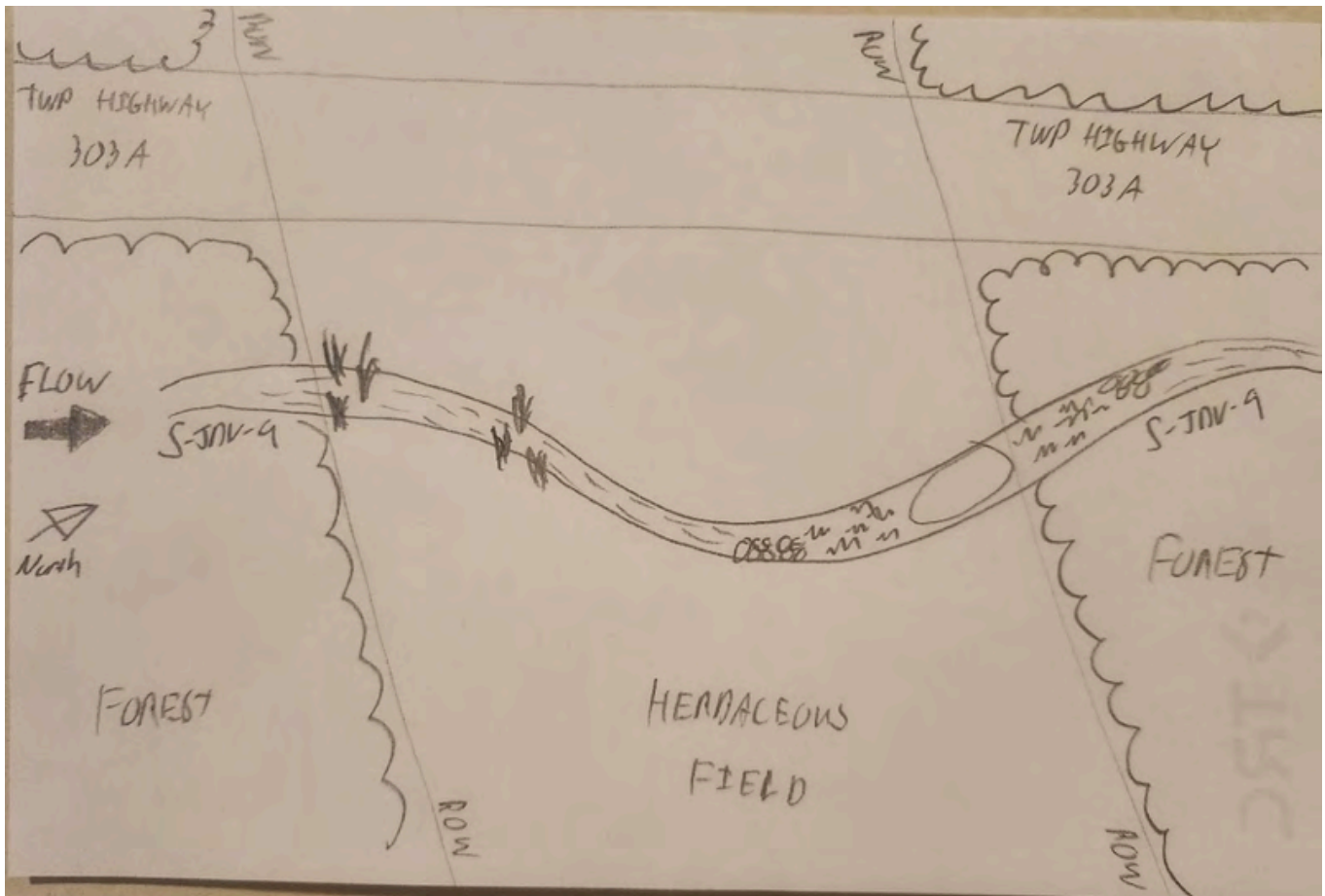
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **21****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-10. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.001LENGTH OF STREAM REACH (ft) 200 LAT. 40.528988 LONG. -80.704483 RIVER MILE N/ADATE 2024-11-08 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>45</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	___
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>10</u>	☐ CLAY or HARDPAN [0 pts]	<u>20</u>
☒ GRAVEL (2-64 mm) [9 pts]	<u>25</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 10

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI
Metric
Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

0Pool Depth
Max = 30**0**

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.8Bankfull
Width
Max=30**5****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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☒	☒	Fenced Pasture	☐	☐	Mining or Construction

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

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☒ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 0.35 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-07 Quantity: 0.1

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 80Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _Field Measures: Temp (°C) 0 Dissolved Oxygen (mg/l) _ pH (S.U.) 0 Conductivity (µmhos/cm) _Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

No water present at time of observation**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _Salamanders Observed? (Y/N) N Species observed (if known): _Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _

Comments Regarding Biology:

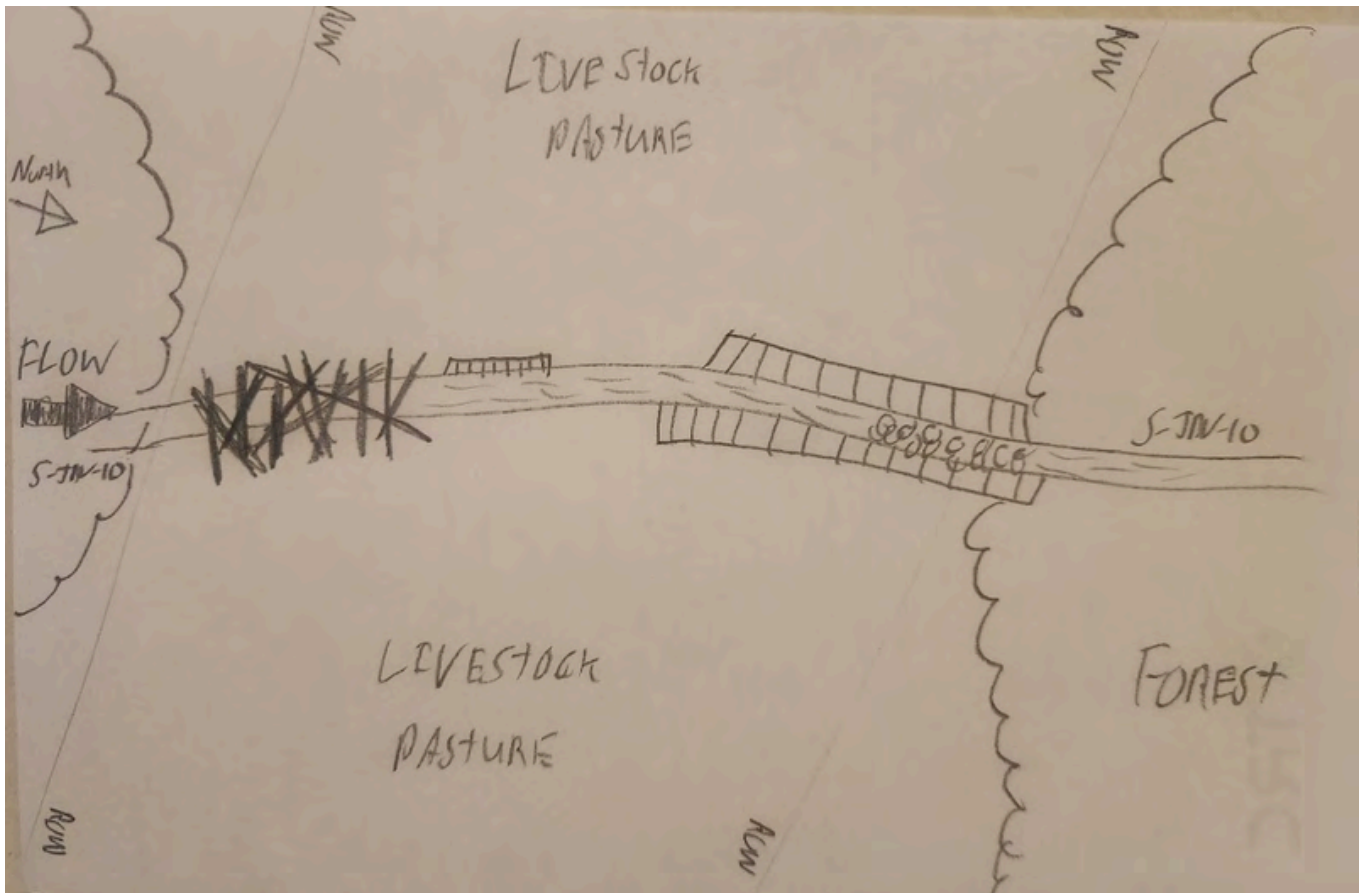
None observed

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

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

FLOW →

SEE PAGE 3





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

Exhibit 18
QHEI Score: 57.5

Stream & Location: Yellow Creek (S-JDV-11)

RM: 7.22

Date: 2024-11-08

Saline Township, Jefferson County, Ohio

Scorers Full Name & Affiliation: Jeff Vandever, TRC

River Code: N/A

STORET #: N/A

Lat./Long.:
(NAD83 - decimal)

40.529727 / -80.711254

Office verified location ☒

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

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		POOL RIFFLE		POOL RIFFLE		ORIGIN		QUALITY	
☐ BLDR/SLABS [10]		☐ HARDPAN [4]		☐ LIMESTONE [1]		☐ HEAVY [-2]		☐ TILLS [1]		☒ MODERATE [-1]	
☐ BOULDER [9]	10 10	☐ DETRITUS [3]	5 5	☐ WETLANDS [0]		☐ NORMAL [0]		☐ HARDPAN [0]		☐ FREE [1]	
☐ COBBLE [8]	10 10	☐ MUCK [2]		☒ SANDSTONE [0]		☒ EXTENSIVE [-2]		☐ RIP/RAP [0]		☒ MODERATE [-1]	
☒ GRAVEL [7]	45 45	☒ SILT [2]	30 30	☐ LACUSTRINE [0]		☐ NORMAL [0]		☐ SHALE [-1]		☐ NONE [1]	
☐ SAND [6]		☐ ARTIFICIAL [0]		☐ COAL FINES [-2]							
☐ BEDROCK [5]											

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

Substrate Maximum 20

Comments

Boulders; cobble, gravel, silt, detritus

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.

AMOUNT

Check ONE (Or 2 & average)

UNDERCUT BANKS [1]		POOLS > 70CM [2]		OXBOWS, BACKWATERS [1]		AQUATIC MACROPHYTES [1]		LOGS OR WOODY DEBRIS [1]	
2		2		0		0		2	
1		1		0		0		2	
2		2		2		2		2	
0		0		0		0		0	

Channel Maximum 20

Comments

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

SINUOSITY		DEVELOPMENT		CHANNELIZATION		STABILITY	
☐ HIGH [4]		☐ EXCELLENT [7]		☐ NONE [6]		☒ HIGH [3]	
☐ MODERATE [3]		☒ GOOD [5]		☒ RECOVERED [4]		☒ MODERATE [2]	
☐ LOW [2]		☐ FAIR [3]		☐ RECOVERING [3]		☐ LOW [1]	
☒ NONE [1]		☐ POOR [1]		☐ RECENT OR NO RECOVERY [1]			

Channel Maximum 20

Comments

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

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY	
☐ NONE / LITTLE [3]		☒ WIDE > 50M [4]		☒ FOREST, SWAMP [3]	
☒ MODERATE [2]		☐ MODERATE 10-50M [3]		☒ SHRUB OR OLD FIELD [2]	
☒ HEAVY / SEVERE [1]		☐ NARROW 5-10M [2]		☐ RESIDENTIAL, PARK, NEW FIELD [1]	
		☐ VERY NARROW < 5M [1]		☐ FENCED PASTURE [1]	
		☐ NONE [0]		☐ OPEN PASTURE, ROWCROP [0]	

Riparian Maximum 10

Comments

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH		CHANNEL WIDTH		CURRENT VELOCITY	
☐ > 1M [6]		☐ POOL WIDTH > RIFFLE WIDTH [2]		☐ TORRENTIAL [-1]	
☒ 0.7-<1M [4]		☒ POOL WIDTH = RIFFLE WIDTH [1]		☐ VERY FAST [1]	
☐ 0.4-<0.7 [2]		☐ POOL WIDTH < RIFFLE WIDTH [0]		☐ FAST [1]	
☐ 0.2-<0.4M [1]				☒ MODERATE [1]	
☐ < 0.2M [0]				☐ SLOW [1]	
				☐ INTERSTITIAL [-1]	
				☐ INTERMITTENT [-2]	
				☐ EDDIES [1]	

Pool / Current Maximum 12

Comments

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	
☒ BEST AREAS >10CM [2]		☒ MAXIMUM > 50CM [2]		☐ STABLE (E.G., COBBLE, BOULDER) [2]		☐ NONE [2]	
☐ BEST AREAS 5-10CM [1]		☐ MAXIMUM < 50CM [1]		☒ MOD. STABLE (E.G., LARGE GRAVEL) [1]		☐ LOW [1]	
☐ BEST AREAS <5CM [METRIC=0]				☒ UNSTABLE (E.G., FINE GRAVEL, SAND) [0]		☒ MODERATE [0]	
						☐ EXTENSIVE [-1]	

Riffle / Run Maximum 8

Comments

GRADIENT (15 ft/mi)		DRAINAGE AREA (146 mi ²)		%POOL: 30		%GLIDE:		%RUN: 35		%RIFFLE: 35	
☐ VERY LOW - LOW [2-4]		☐ MODERATE [6-10]									
☒ HIGH - VERY HIGH [10-6]											

Gradient Maximum 10

A) SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
☒ WADE
☐ L. LINE
☐ OTHER

STAGE

1st-sample pass-2nd

☐ HIGH☐ UP☒ NORMAL☐ LOW☐ DRY**DISTANCE**

- ☐ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☒ OTHER

.07
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**B) AESTHETICS**☐ NUISANCE ALGAE☐ INVASIVE☐ MACROPHYTES☐ EXCESS TURBIDITY☐ DISCOLORATION☐ FOAM / SCUM☐ OIL SHEEN☐ TRASH / LITTER☐ NUISANCE ODOR☐ SLUDGE DEPOSITS☐ CSOS/SSOS/OUTFALLS**D) 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

Circle some & COMMENT

E) EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT & GRIM

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

F) MEASUREMENTS $\bar{x}$ width 32 m $\bar{x}$ depth 0.8 m

max. depth 1.6 m

 $\bar{x}$ bankfull width 45 mbankfull $\bar{x}$ depth

W/D ratio 40.000

bankfull max. depth

floodprone x^2 width

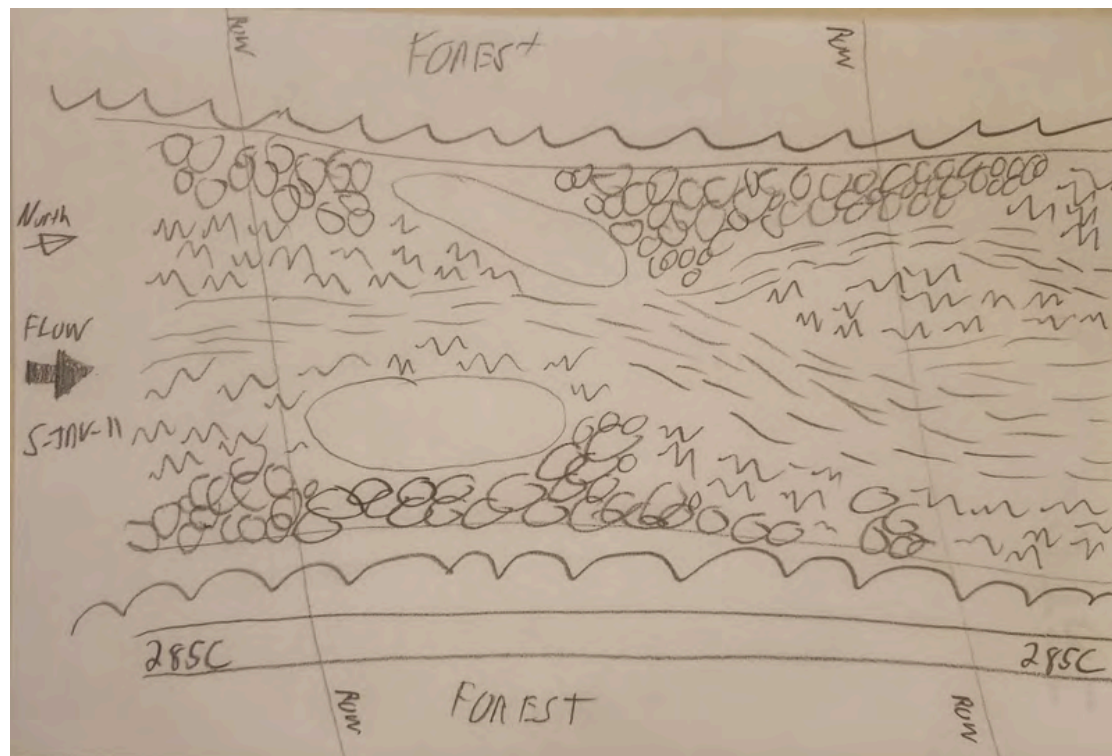
entrench. ratio

Legacy Tree:

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

S-JDV-11 (Yellow Creek) parallels Township Road 285C and flows south to north; temperature = 14.1C; pH = 8.12

Exhibit 18

Stream Drawing:



Primary Headwater Habitat Evaluation Form

Exhibit 18 **25**

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

SITE NAME/LOCATION S-JDV-12. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.001LENGTH OF STREAM REACH (ft) 200 LAT. 40.530288 LONG. -80.716112 RIVER MILE N/ADATE 2024-11-08 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>65</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>10</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	___	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>25</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 0

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

3**HHEI
Metric
Points**Substrate
Max = 40**15**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

3Pool Depth
Max = 30**5**

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.7Bankfull
Width
Max=30**5****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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 0.19 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-07 Quantity: 0.1

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 65Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): Field Measures: Temp (°C) 14.5 Dissolved Oxygen (mg/l) pH (S.U.) 7.58 Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): Salamanders Observed? (Y/N) N Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Unidentified larvae

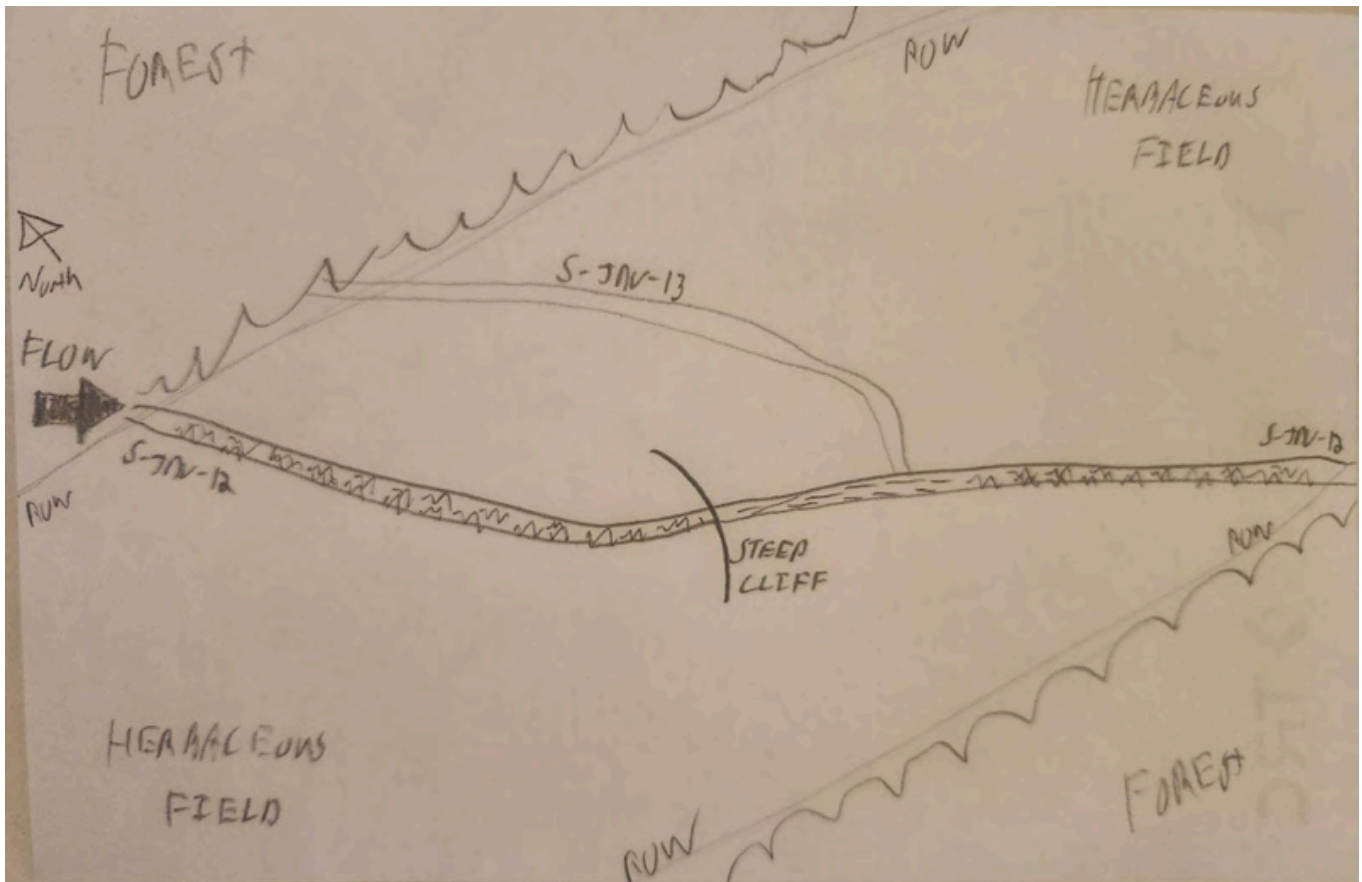
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **11****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-13. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.001LENGTH OF STREAM REACH (ft) 200 LAT. 40.5303074877 LONG. -80.7157331 RIVER MILE N/ADATE 2024-11-08 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ ☐ BLDR SLABS [16 pts]	___	☒ ☐ SILT [3 pts]	<u>50</u>
☐ ☐ BOULDER (>256 mm) [16 pts]	___	☐ ☐ LEAF PACK/WOODY DEBRIS [3 pts]	___
☐ ☐ BEDROCK [16 pts]	___	☐ ☐ FINE DETRITUS [3 pts]	___
☐ ☐ COBBLE (65-256 mm) [12 pts]	___	☐ ☒ CLAY or HARDPAN [0 pts]	<u>30</u>
☐ ☐ GRAVEL (2-64 mm) [9 pts]	<u>20</u>	☐ ☐ MUCK [0 pts]	___
☐ ☐ SAND (<2 mm) [6 pts]	___	☐ ☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 0

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

3

TOTAL NUMBER OF SUBSTRATE TYPES:

3**HHEI
Metric
Points**Substrate
Max = 40**6**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☒ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30**0**

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

0

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30**5**

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.6**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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☒	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☒ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Yellow Creek

Distance from Evaluated Stream 0.19 miles

☐ CWH Name: ____

Distance from Evaluated Stream ____

☐ EWH Name: ____

Distance from Evaluated Stream ____

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

USGS Quadrangle Name: See Report

NRCS Soil Map Page: See Report NRCS Soil Map Stream Order See Report

County: Jefferson

Township / City: Saline

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-07 Quantity: 0.1

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _

Field Measures: Temp (°C) 0 Dissolved Oxygen (mg/l) _ pH (S.U.) 0 Conductivity (µmhos/cm) _

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

Additional comments/description of pollution impacts:

No water present at time of observation

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _

Salamanders Observed? (Y/N) N Species observed (if known): _

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _

Comments Regarding Biology:

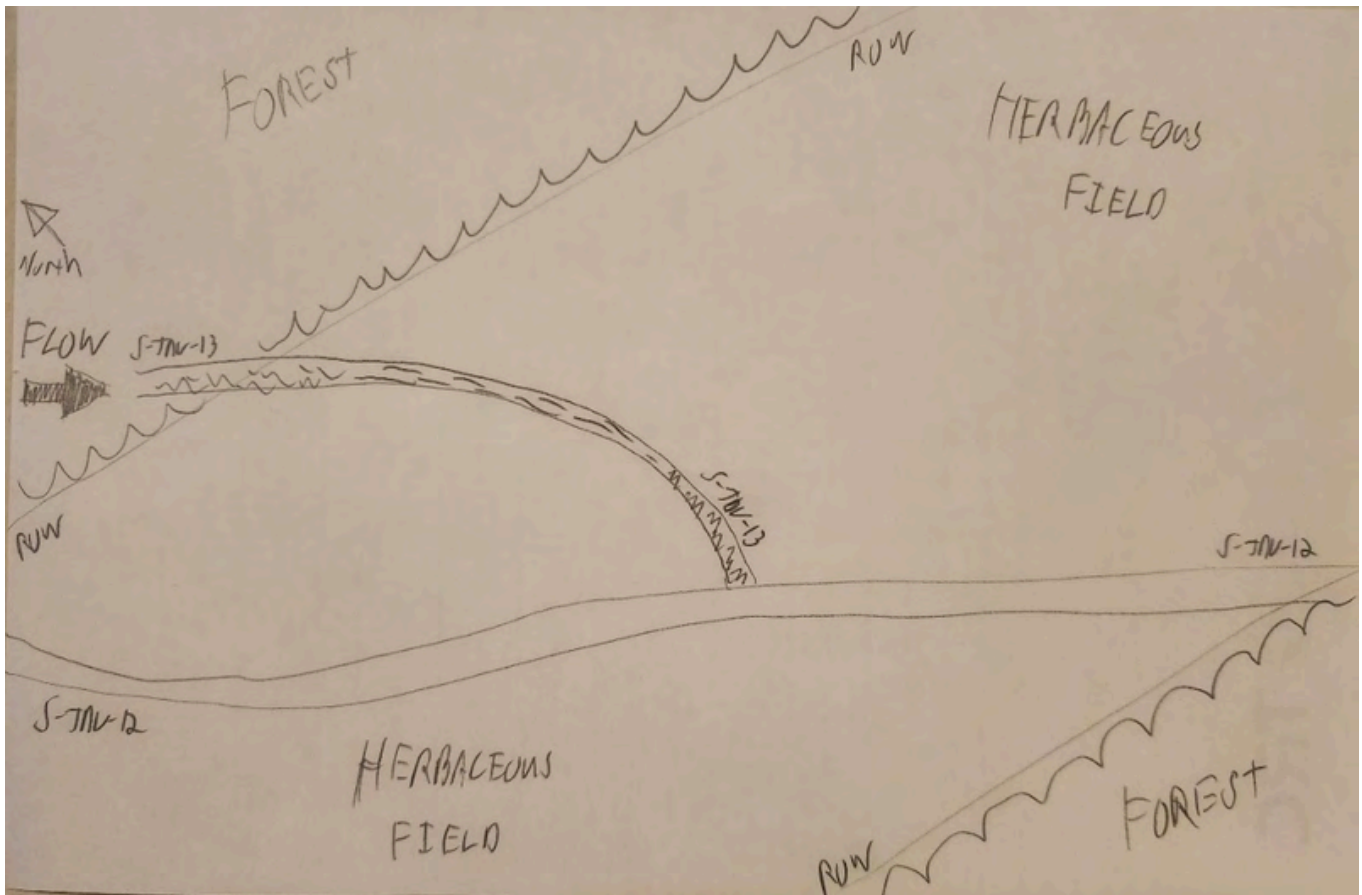
None observed

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

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **71****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-14. FirstEnergy - Sammis-Star 345kV Rebuild. Lowery RunSITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.72LENGTH OF STREAM REACH (ft) 200 LAT. 40.5383762877 LONG. -80.731348 RIVER MILE N/ADATE 2024-11-11 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☐ SILT [3 pts]	<u>10</u>
☐ BOULDER (>256 mm) [16 pts]	<u>10</u>	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>5</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☒ COBBLE (65-256 mm) [12 pts]	<u>40</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>35</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 50

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

21

TOTAL NUMBER OF SUBSTRATE TYPES:

5**HHEI
Metric
Points**Substrate
Max = 40**26**

A + B

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

☐ > 30 centimeters [20 pts]	☒ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30**15**

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

9

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

☒ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30**30**

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

4.2**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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☒ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 0.32 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-10 Quantity: 0.3

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 25Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): Field Measures: Temp (°C) 13.6 Dissolved Oxygen (mg/l) pH (S.U.) 8.35 Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): Salamanders Observed? (Y/N) N Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddisflies; scuds; unidentified larvae

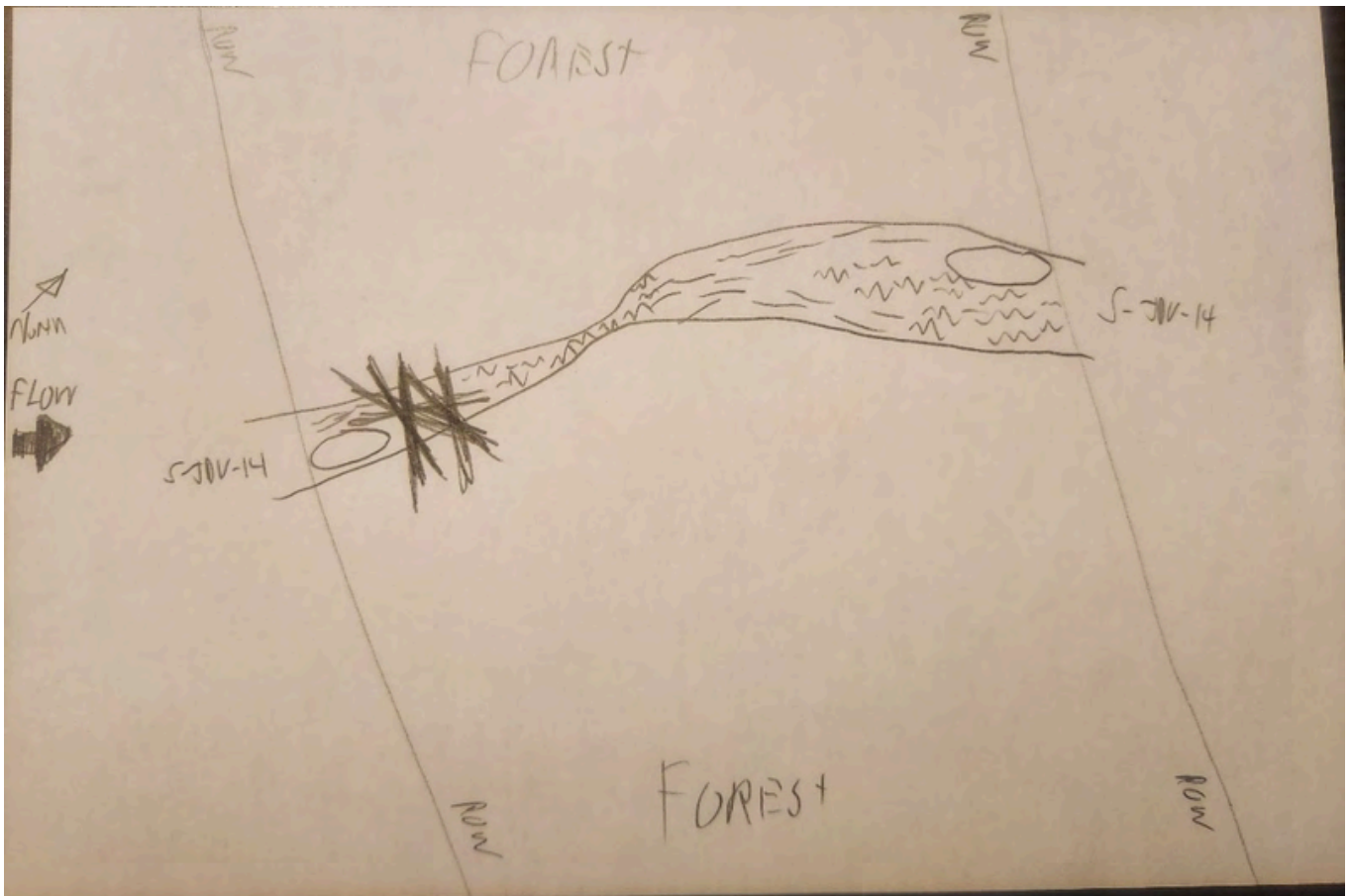
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **21****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-15. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.044LENGTH OF STREAM REACH (ft) 200 LAT. 40.5330632877 LONG. -80.722373 RIVER MILE N/ADATE 2024-11-11 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:**☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>30</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>10</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>25</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>35</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 25

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI Metric Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☒ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30**0**

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

0

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30**5**

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.8**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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
☐	☐	Mature Forest, Wetland
☒	☒	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture

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

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

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☒ Dry channel, no water (Ephemeral)

COMMENTS Likely flows after precipitation events**SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):**

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 0.74 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-10 Quantity: 0.3

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 20Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): _Field Measures: Temp (°C) 0 Dissolved Oxygen (mg/l) _ pH (S.U.) 0 Conductivity (µmhos/cm) _Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

No water in stream bed at the time of observation**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _Salamanders Observed? (Y/N) N Species observed (if known): _Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _

Comments Regarding Biology:

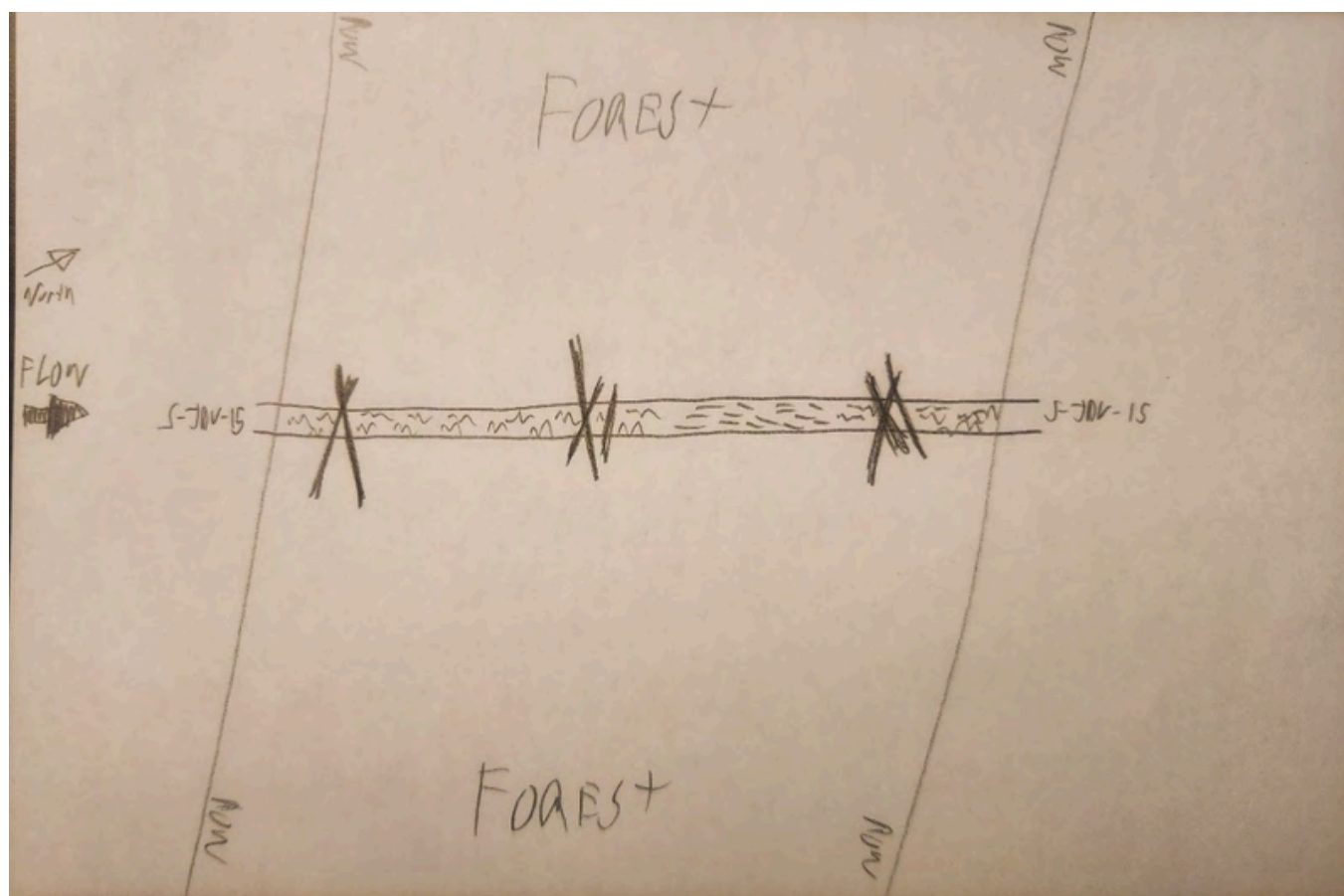
None observed

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

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **21****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-16. FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.059LENGTH OF STREAM REACH (ft) 200 LAT. 40.5349673877 LONG. -80.7256861 RIVER MILE N/ADATE 2024-11-11 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:** ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>65</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>10</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>5</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>20</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 5

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI
Metric
Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

0Pool Depth
Max = 30**0**

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.9Bankfull
Width
Max=30**5****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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☒ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☒ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 0.13 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-10 Quantity: 0.3

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 20Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): _Field Measures: Temp (°C) 0 Dissolved Oxygen (mg/l) _ pH (S.U.) 0 Conductivity (µmhos/cm) _Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

No water observed in the stream bed at the time of observation**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _Salamanders Observed? (Y/N) N Species observed (if known): _Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _

Comments Regarding Biology:

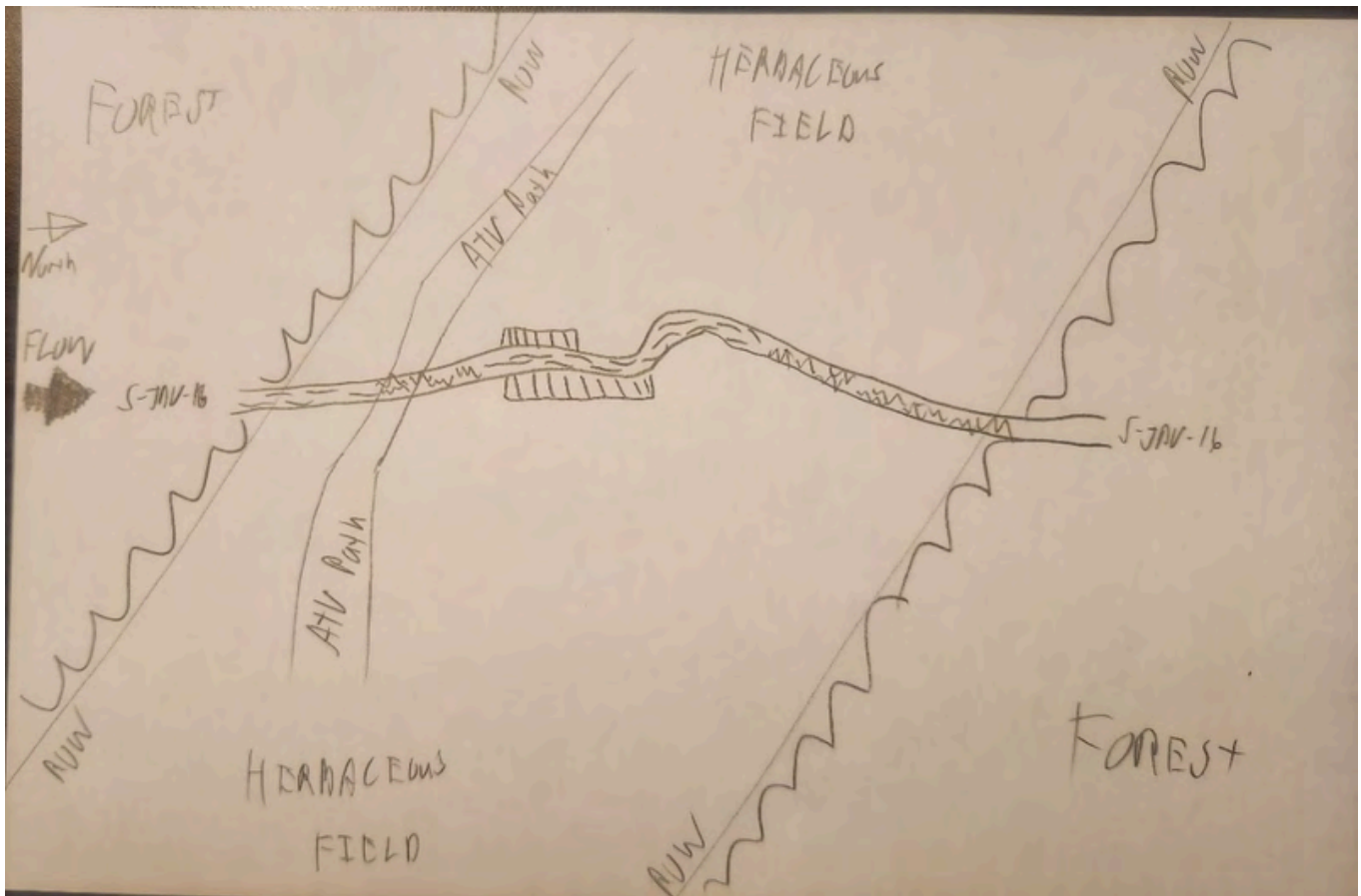
None observed

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

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **26****HHEI Score (sum of metrics 1, 2, 3) :**SITE NAME/LOCATION S-JDV-17, FirstEnergy - Sammis-Star 345kV Rebuild.SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.08LENGTH OF STREAM REACH (ft) 200 LAT. 40.5362001877 LONG. -80.7275916 RIVER MILE N/ADATE 2024-11-11 SCORER JDV COMMENTS _____**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:**☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	___	☒ SILT [3 pts]	<u>50</u>
☐ BOULDER (>256 mm) [16 pts]	___	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>15</u>
☐ BEDROCK [16 pts]	___	☐ FINE DETRITUS [3 pts]	___
☐ COBBLE (65-256 mm) [12 pts]	<u>10</u>	☐ CLAY or HARDPAN [0 pts]	___
☒ GRAVEL (2-64 mm) [9 pts]	<u>25</u>	☐ MUCK [0 pts]	___
☐ SAND (<2 mm) [6 pts]	___	☐ ARTIFICIAL [3 pts]	___

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 10

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

12

TOTAL NUMBER OF SUBSTRATE TYPES:

4**HHEI Metric Points**Substrate
Max = 40**16**

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30**5**

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters):

4

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☒ ≤ 1.0 m (≤ 3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30**5**

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters):

0.5**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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 0.19 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Saline**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-10 Quantity: 0.3

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 70Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): Field Measures: Temp (°C) 14.4 Dissolved Oxygen (mg/l) pH (S.U.) 7.79 Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): Salamanders Observed? (Y/N) N Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddisflies

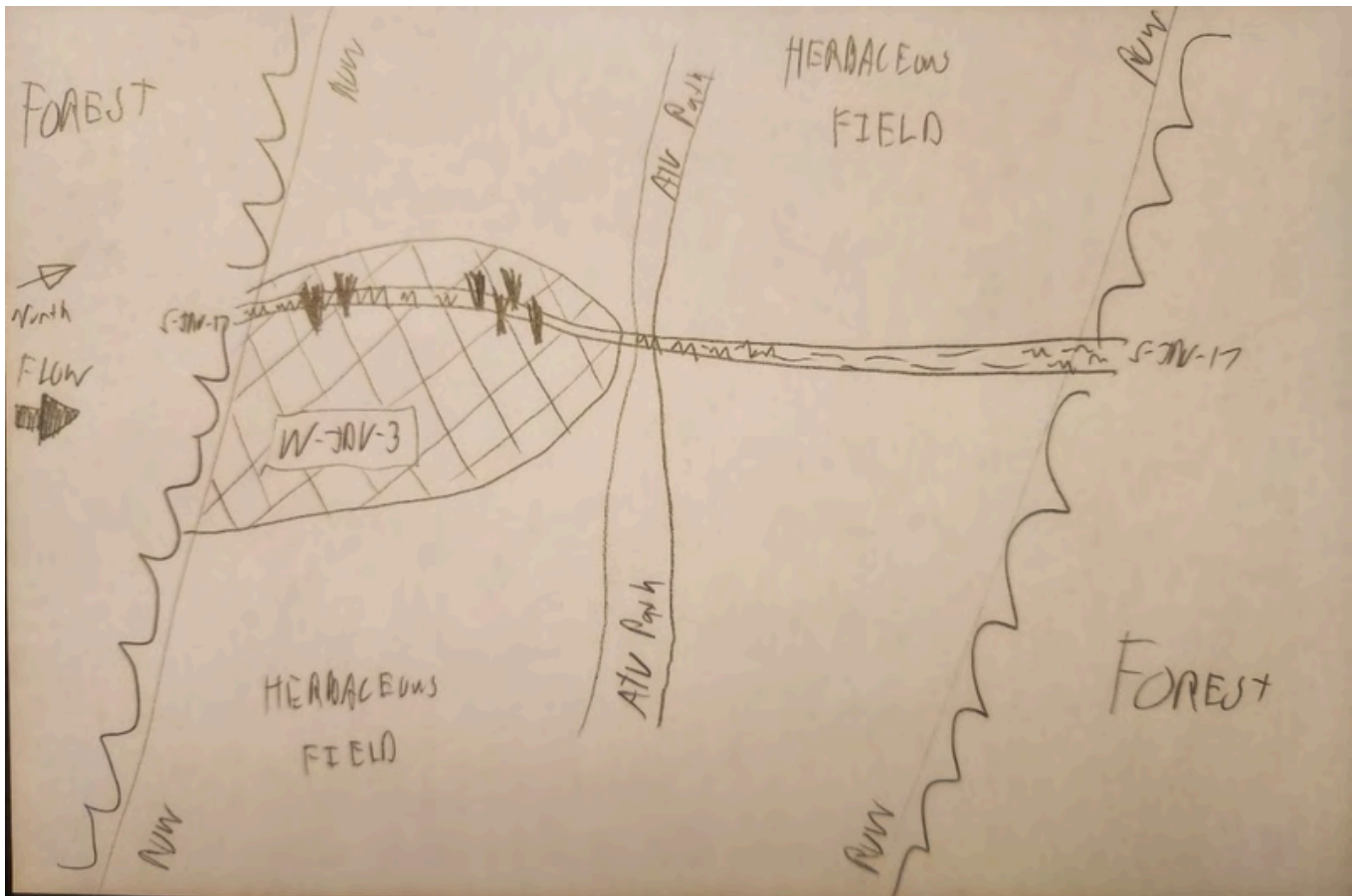
Comments Regarding Biology:

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

FLOW →

SEE PAGE 3





Primary Headwater Habitat Evaluation Form

Exhibit 18 **66**

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

SITE NAME/LOCATION S-JDV-18. FirstEnergy - Sammis-Star 345kV Rebuild.

SITE NUMBER N/A RIVER CODE 050301010804 RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.15

LENGTH OF STREAM REACH (ft) 200 LAT. 40.5567338877 LONG. -80.7770357 RIVER MILE N/A

DATE 2024-11-11 SCORER JDV COMMENTS _____

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

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

1. **SUBSTRATE: Estimate percent of every type of substrate present.** Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☒ BLDR SLABS [16 pts]	<u>25</u>	☐ SILT [3 pts]	<u>10</u>
☐ BOULDER (>256 mm) [16 pts]	<u>15</u>	☐ LEAF PACK/WOODY DEBRIS [3 pts]	<u>5</u>
☐ BEDROCK [16 pts]	_____	☐ FINE DETRITUS [3 pts]	_____
☐ COBBLE (65-256 mm) [12 pts]	<u>20</u>	☐ CLAY or HARDPAN [0 pts]	_____
☒ GRAVEL (2-64 mm) [9 pts]	<u>25</u>	☐ MUCK [0 pts]	_____
☐ SAND (<2 mm) [6 pts]	_____	☐ ARTIFICIAL [3 pts]	_____

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 60

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25

TOTAL NUMBER OF SUBSTRATE TYPES: 6

**HHEI
Metric
Points**

Substrate
Max = 40

31

A + B

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

☐ > 30 centimeters [20 pts]	☒ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30

15

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters): 6

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

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]
☒ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30

20

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters): 2.2

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	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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

☒ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

COMMENTS _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score ____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**☒ WWH Name: Yellow CreekDistance from Evaluated Stream 4.5 miles☐ 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: See ReportNRCS Soil Map Page: See Report NRCS Soil Map Stream Order See ReportCounty: JeffersonTownship / City: Brush Creek**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 2024-11-10 Quantity: 0.3

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 25Were samples collected for water chemistry? (Y/N): Y Lab Sample # or ID (attach results): _Field Measures: Temp (°C) 17.1 Dissolved Oxygen (mg/l) _ pH (S.U.) 8.08 Conductivity (µmhos/cm) _Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _Salamanders Observed? (Y/N) N Species observed (if known): _Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Unidentified larvae

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

FLOW →

SEE PAGE 3

