ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ch Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)		
WWH Name:	_ Distance from Evaluated Stream	
CWH Name:	Distance from Evaluated Stream	0.40
EWH Name: Valley Run	Distance from Evaluated Stream _	0.40
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE	LOCATION
USGS Quadrangle Name: Glenford NRCS Soil Map P	age: NRCS Soil Map Strea	am Order
County: Licking Township / City: Newark		
MISCELLANEOUS		
Base Flow Conditions? (Y/N): Y Date of last precipitation: 06/05/20	Quantity: 0.73	
Photograph Information:		
Elevated Turbidity? (Y/N): Canopy (% open): 80%		
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	nd attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) If not, please explain:		
Additional comments/description of pollution impacts.		
Additional comments/description of pollution impacts:		
	DDERATE HIG	ЭН
	NOTE: all voucher samples must be mary Headwater Habitat Assessment	e labeled with the site Manual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Print Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrate Comments Regarding Biology:	NOTE: all voucher samples must be mary Headwater Habitat Assessment Noucher? (Y/N) Noucher?	e labeled with the site Manual) ? (Y/N)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Print Print Observed? (Y/N) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrate	NOTE: all voucher samples must be mary Headwater Habitat Assessment Voucher? (Y/N) N Voucher Observed? (Y/N) N Voucher	e labeled with the site Manual) ? (Y/N) N leted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Print Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	NOTE: all voucher samples must be mary Headwater Habitat Assessment Voucher? (Y/N) N Voucher Observed? (Y/N) N Voucher	e labeled with the site Manual) ? (Y/N) N leted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Prince Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM R Include important landmarks and other features of interest for site evaluation and the state of	NOTE: all voucher samples must be mary Headwater Habitat Assessment Voucher? (Y/N) N Voucher Observed? (Y/N) N Voucher	e labeled with the site Manual) ? (Y/N) N leted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Prince Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM R Include important landmarks and other features of interest for site evaluation and the state of	NOTE: all voucher samples must be mary Headwater Habitat Assessment Voucher? (Y/N) N Voucher Observed? (Y/N) N Voucher	e labeled with the site Manual) ? (Y/N) N leted):
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BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Prince Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM R Include important landmarks and other features of interest for site evaluation an eroded banks	NOTE: all voucher samples must be mary Headwater Habitat Assessment Voucher? (Y/N) N Voucher Observed? (Y/N) N Voucher	e labeled with the site Manual) ? (Y/N) N leted):
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BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Prix Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM R Include important landmarks and other features of interest for site evaluation and eroded banks FLOW	NOTE: all voucher samples must be mary Headwater Habitat Assessment Voucher? (Y/N) N Voucher Observed? (Y/N) N Voucher	e labeled with the site Manual) ? (Y/N) N leted):





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No. 60616110,

60618779, 60616126

Stream 074

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 074

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 074

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

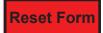




Chief P Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Tra	Insmission Line Rebuild Project	
s-aeh-20200610-09 SITE NUMBER RIVER BASIN M		.01
LENGTH OF STREAM REACH (ft) 25 LAT. 39.93597 LONG8	2.28280 RIVER CODE RIVER MILE 0	0.0
DATE 06/10/20 SCORER AEH COMMENTS Ephem	eral trib to Stream 074	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation	n Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVE	RECOVERING RECENT OR NO REC	OVERY
SUBSTRATE (Estimate percent of every type of substrate present. Cl (May of 20). Add total purples of significant substrate type found (May of	 :	HHEI
(Max of 32). Add total number of significant substrate types found (Max of TYPE PERCENT TYPE	PERCENT	Metric
BLDR SLABS [16 pts]	[3 pt] 50% PACK/WOODY DEBRIS [3 pts] 10%	Points
	DETRITUS [3 pts] 0%	Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY	or HARDPAN [0 pt]	Max = 40
	([0 pts]	15
оли (ч <u>е</u> пип) [о рю]		
Total of Percentages of O.00% (A) Substra Bldr Slabs, Boulder, Cobble, Bedrock	te Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12	OTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the evaluation. Avoid plunge pools from road culverts or storm water pipes)		Pool Dept
> 30 centimeters [20 pts] > 5 c	cm - 10 cm [15 pts]	- Wax - 50
	cm [5 pts] WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS		
	MAXIMUM POOL DEPTH (Inches): 1.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements)	(Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ ≤ 1.0	(Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	(Check ONLY one box):) m - 1.5 m (> 3' 3" - 4' 8") [15 pts] 0 m (<=3' 3") [5 pts]	Width Max=30
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3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must	(Check ONLY one box): 0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] 0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00	Width Max=30
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ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	_ Distance from Evaluated Stream
EWH Name: Valley Run	Distance from Evaluated Stream0.40
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEI	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Glenford NRCS Soil Map F	Page:NRCS Soil Map Stream Order
County: Licking Township / City: Newar	rk
MISCELLANEOUS	
Base Flow Conditions? (Y/N):	Quantity: 0.73
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 20%	
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id.	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts: BANK Stability LOW M	ODERATE HIGH
BANK Stability	ODERATE V NIGH
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Programme of Tadpoles Observed? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebra	Voucher? (Y/N)
Comments Regarding Biology:	
	REACH (This must be completed):
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	





PHOTOGRAPHIC RECORD STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 075

Date:

June 10, 2020

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 075

Date:

June 10, 2020

Description:

Ephemeral

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STREAMS

Client Name:

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Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 075

Date:

June 10, 2020

Description:

Ephemeral

Ephemeral Stream





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

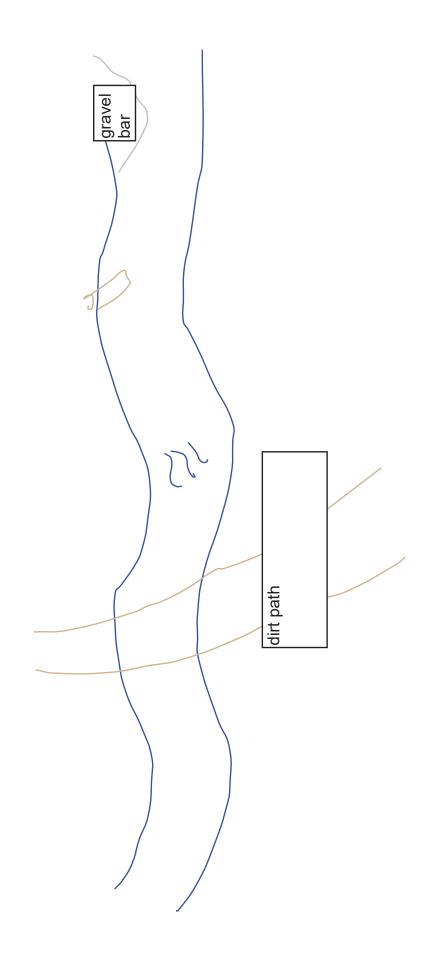
QHEI Score:

57.0

Stream & Location: AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project RM: 1.7 Date:6 10 20
S-aeh-20200610-07 / Wise Run Scorers Full Name & Affiliation: AECOM
River Code: STORET #: Lat./ Long.: 39.9398 /8 2.2863 Office verified location
1] SUBSTRATE Check ONLYTwo substrate TYPE BOXES; estimate % or note every type present BEST TYPES POOL RIFFLE OTHER TYPES POOL RIFFLE BLDR /SLABS [10]
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. O
3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average) SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY HIGH [4]
☐ 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] Comments Maximum 20
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average) River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY ROSION WIDE > 50m [4] FOREST, SWAMP [3] CONSERVATION TILLAGE [1]
□ NONE / LITTLE [3] □ MODERATE 10-50m [3] □ SHRUB OR OLD FIELD [2] □ URBAN OR INDUSTRIAL [0] □ MINING / CONSTRUCTION [0] □ MINING / CONSTRUCTION [0] □ HEAVY / SEVERE [1] □ VERY NARROW < 5m [1]
Comments OPEN PASTURE, ROWCROP [0] past 100m riparian. Riparian. Maximum 10 10 10 10 10 10 10 10 10 10 10 10 10
5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH Check ONE (ONLY!) Check ONE (Or 2 & average) Torrential [-1] Slow [1] One of the content of the
Comments Maximum 12
Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). Check ONE (Or 2 & average). RIFFLE DEPTH RUN DEPTH RIFFLE / RUN SUBSTRATE RIFFLE / RUN EMBEDDEDNESS MAXIMUM > 50cm [2] STABLE (e.g., Cobble, Boulder) [2] NONE [2] MAXIMUM > 50cm [1] MOD. STABLE (e.g., Large Gravel) [1] SLOW [1] BEST AREAS > 5cm [metric=0] Comments Riffle / Run Maximum Maximum Maximum 8
6] GRADIENT (65.00 ft/mi)

BOAT 14 carelo 1825 204 14 carelo 1825 204 15 carelo 1825 204

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





PHOTOGRAPHIC RECORD STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 076

Date:

June 10, 2020

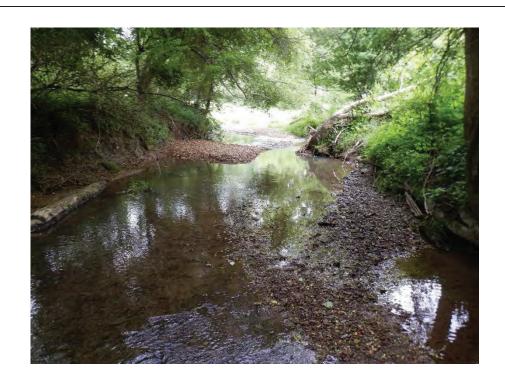
Description:

Perennial

Warmwater Habitat – Good

Wise Run

Facing Upstream



Stream 076

Date:

June 10, 2020

Description:

Perennial

Warmwater Habitat – Good

Wise Run





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 076

Date:

June 10, 2020

Description:

Perennial

Warmwater Habitat – Good

Wise Run





Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
s-aeh-20200610-06 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.0	06
LENGTH OF STREAM REACH (ft) 200 LAT. 39.94364 LONG82.28960 RIVER CODE RIVER MILE 0.	
DATE 06/10/20 SCORER AEH COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMPOSITIONS: COMPOSITIONS	VERY
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.	HHEI
TYPE PERCENT TYPE PERCENT □ □ BLDR SLABS [16 pts] 0% ✓ □ SILT [3 pt] 60%	Metric Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 5%	Cub atuata
BEDROCK [16 pt]	Substrate Max = 40
COBBLE (65-256 mm) [12 pts]	4 -
SAND (<2 mm) [6 pts] 0% ARTIFICIAL [3 pts] 0%	15
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B) Check	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
	Pool Depth
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]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	45
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH (Inches): 4.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (-3' 3") [5 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH LR (Per Bank) LR (Most Predominant per Bank) LR	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
✓ ✓ Narrow <5m Residential, Park, New Field Open Pasture, Row Crop)
None Fenced Pasture Mining or Construction	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) OCMMENTS OCMMENTS	
COMMENTS_	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
□ None □ 1.0 □ 2.0 □ 3.0	
None	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):			
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach	Completed QHEI F	Form)	
CWH Name:	Distance from Evalu Distance from Evalu Distance from Evalu	uated Stream	1.95
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AI		_	ATION
USGS Quadrangle Name: Glenford NRCS Soil Map Page		Soil Map Stream Or	
County: Licking Township / City: newark			
MISCELLANEOUS			
Base Flow Conditions? (Y/N): Y Date of last precipitation: 06/05/20	Quantity: 0.	73	
Photograph Information:			
Elevated Turbidity? (Y/N): Canopy (% open): 90%			
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and	l attach results) Lab	Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) If not, please explain:			
Additional comments/description of pollution impacts:			
BANK Stability LOW MOD	ERATE	HIGH	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. N ID number. Include appropriate field data sheets from the Prima Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Comments Regarding Biology:	ry Headwater Habita Voucher? (Y/N)	t Assessment Manua	al)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REA			
Include important landmarks and other features of interest for site evaluation and a		tion of the stream's	slocation
17	VV		
black pipe outlet	cow pastu	re	wetland



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 077

Date:

June 10, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 077

Date:

June 10, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 077

Date:

June 10, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-	-North Newark 138 kV Transmission Line Rebuild Project	
hh-aeh-20200609-11 SITE NUMBER	RIVER BASIN Muskingum DRAINAGE AREA (mi	0.01
LENGTH OF STREAM REACH (ft) 200	LAT. 39.95601 LONG82.29968 RIVER CODE RIVER MIL	0.23
DATE 06/09/20 SCORER AEH	COMMENTS Ephemeral	
NOTE: Complete All Items On This Forn	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for I	nstructions
STREAM CHANNEL NONE / NAT MODIFICATIONS: underground portion	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO FOR STREAM	RECOVERY
· · · · · · · · · · · · · · · · · · ·	ery type of substrate present. Check ONLY two predominant substrate TYPE boxe	s I HHEI
, ,	eant substrate types found (Max of 8). Final metric score is sum of boxes A & B. ERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	0% SILT [3 pt] 80%	Points
□ □ BOULDER (>256 mm) [16 pts] □ □ BEDROCK [16 pt]	0% LEAF PACK/WOODY DEBRIS [3 pts] 20% 0% FINE DETRITUS [3 pts] 0%	Substrate
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	0% MUCK [0 pts] 0% 0% ARTIFICIAL (3 pts) 0%	8
SAND (<2 mm) [6 pts]	/Alth long to pag	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	0.00% (A) Substrate Percentage 100% (B)	_ A+B
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 2	
	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of d culverts or storm water pipes) (Check ONLY one box):	Pool Dept
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	IVIAX - 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS		
	(<u> </u>
3. BANK FULL WIDTH (Measured as the	e average of 3-4 measurements) (Check ONLY one box):	Bankfull Width
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	(Bankfull
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	e average of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	e average of 3-4 measurements) (Check <i>ONLY</i> one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	e average of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 1.0	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP	PLAIN QUALITY Paverage of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 1.0 This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank)	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 1.0 This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Conservation Tillage)	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Check ONLY one box): Check ONLY one box): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 L R (Most Predominant per Bank) L R (Mos	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field (Check ONLY one box): 1.0 (Check ONLY one box): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 L R Conservation Tillage Urban or Industrial Open Pasture, Row	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Check ONLY one box): Check ONLY one box): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 L R (Most Predominant per Bank) L R (Mos	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m None COMMENTS	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 L R Conservation Tillag Urban or Industrial Open Pasture, Row	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval. Stream Flowing	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Residential, Park, New Field Residential, Park, New Field Residential, Park, New Field Moist Channel, isolated pools, no flow (Intermit intermit) Moist Channel, isolated pools, no flow (Intermit)	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide > 10m Wide > 10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Eval	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Residential, Park, New Field Residential, Park, New Field Residential, Park, New Field Moist Channel, isolated pools, no flow (Intermit intermit) Moist Channel, isolated pools, no flow (Intermit)	Bankfull Width Max=30 5
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3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval. Stream Flowing Subsurface flow with isolated pool COMMENTS SINUOSITY (Number of bends pool None) SINUOSITY (Number of bends pool COMMENTS)	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstreams FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermit Dry channel, no water (Ephemeral)) Der 61 m (200 ft) of channel) (Check ONLY one box): 1.0 2.0 3.0	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends poor None 0.5	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Whost Channel, isolated pools, no flow (Intermit Dry channel, no water (Ephemeral) Deer 61 m (200 ft) of channel) (Check ONLY one box):	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval. Stream Flowing Subsurface flow with isolated pool COMMENTS SINUOSITY (Number of bends pool None) SINUOSITY (Number of bends pool COMMENTS)	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstreams FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermit Dry channel, no water (Ephemeral)) Der 61 m (200 ft) of channel) (Check ONLY one box): 1.0 2.0 3.0	Bankfull Width Max=30 5 ce crop cion dent)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	d <u>):</u>	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes,	Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)		
WWH Name:	Distance from Evaluated Stream _	
CWH Name: _	Distance from Evaluated Stream _	
EWH Name: Valley Run	Distance from Evaluated Stream _	2.90
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERS	HED AREA. CLEARLY MARK THE SITE I	OCATION
USGS Quadrangle Name: Glenford NRCS Soil M	ap Page: NRCS Soil Map Strean	n Order
County: Licking Township / City: Ne	wark	
MISCELLANEOUS		
Base Flow Conditions? (Y/N): Date of last precipitation: 06/05/20	Quantity: 0.73	
Photograph Information:		
Elevated Turbidity? (Y/N): N Canopy (% open): 70%		
Were samples collected for water chemistry? (Y/N):	id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U		
Is the sampling reach representative of the stream (Y/N) If not, please explain	<u> </u>	
Additional comments/description of pollution impacts:		
· I I —————————————————————————————————		
BANK Stability LOW 🗸	MODERATE HIGH	1
	MODERATE HIGH	1
BANK Stability LOW		
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M	abeled with the site
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Voucher? (Y/N) N Salamanders Observed? (Y/N)	ional. NOTE: all voucher samples must be le Primary Headwater Habitat Assessment M	abeled with the site anual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Voucher? (Y/N) N Salamanders Observed? (Y/N)	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M	abeled with the site anual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertee	ional. NOTE: all voucher samples must be le Primary Headwater Habitat Assessment M	abeled with the site anual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertee	ional. NOTE: all voucher samples must be le Primary Headwater Habitat Assessment M	abeled with the site anual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertee	ional. NOTE: all voucher samples must be le Primary Headwater Habitat Assessment M	abeled with the site anual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertee	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M N Voucher? (Y/N) ebrates Observed? (Y/N) N Voucher?	abeled with the site anual) (Y/N) N
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinverte Comments Regarding Biology:	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M N Voucher? (Y/N) Pebrates Observed? (Y/N) N Voucher? M REACH (This must be completed.)	abeled with the site anual) (Y/N) N eted):
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BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinverted Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREA	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M N Voucher? (Y/N) Pebrates Observed? (Y/N) N Voucher? M REACH (This must be completed.)	abeled with the site anual) (Y/N) N eted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinverted Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREA	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M N Voucher? (Y/N) Pebrates Observed? (Y/N) N Voucher? M REACH (This must be completed.)	abeled with the site anual) (Y/N) N eted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluation	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M N Voucher? (Y/N) Pebrates Observed? (Y/N) N Voucher? M REACH (This must be completed.)	abeled with the site anual) (Y/N) N eted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinverted Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREA	ional. NOTE: all voucher samples must be I e Primary Headwater Habitat Assessment M N Voucher? (Y/N) Pebrates Observed? (Y/N) N Voucher? M REACH (This must be completed.)	abeled with the site anual) (Y/N) N eted):
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BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluation overland flot	ional. NOTE: all voucher samples must be I a Primary Headwater Habitat Assessment M N Voucher? (Y/N) N Voucher? MREACH (This must be completed and a narrative description of the stress	abeled with the site anual) (Y/N) N eted):
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BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections opt ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluation overland flot	ional. NOTE: all voucher samples must be I a Primary Headwater Habitat Assessment M N Voucher? (Y/N) N Voucher? MREACH (This must be completed and a narrative description of the stress	abeled with the site anual) (Y/N) N eted):



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 078

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 078

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 078

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream





Chief P Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

s-aeh-20200610-05 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0	
S-aeh-20200610-05 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	.01
LENGTH OF STREAM REACH (ft) 50 LAT. 39.96557 LONG82.30584 RIVER CODE RIVER MILE 0	.0
DATE 06/10/20 SCORER AEH COMMENTS Intermittent trib to Stream 080	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
(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	Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 20%	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 35% CLAY or HARDPAN [0 pt]	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	25
Total of Percentages of Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	Α.Β
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):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 5 cm - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS MAXIMUM POOL DEPTH (Inches): 0.00	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\times \notation \text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\$	3
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	3
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	3
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m PLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Urban or Industrial	
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Most Predominant per Bank) Conservation Tillage Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cro	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Open Pasture Row Creen	
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m None Residential, Park, New Field Residential Parker Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and River Lef	
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most P	op -
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	op -
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS NOTE: River Left (L) and Right (R) as looking downstream NOTE: River Left (L) and Right (R) as looking downstream NOTE: River Left (L) and Right (R) as looking downstream NOTE: River Left (L) and Right (R) as looking downstream NOTE: River Left (L) and Right (R) as looking downstream L R (Most Predominant per Bank) L R (Most Pre	op -
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN ZONE A Note: Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) 1.0 2.0 3.0	op -
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Residentiant per Bank) Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Crown Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 2.0 3.0 3.0 2.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	op -
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A NOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN ZONE A Note: Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) 1.0 2.0 3.0	op -

	so be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: SWH Name: Valley Run	Distance from Evaluated Stream Distance from Evaluated Stream 3.70
LWIT Name.	Distance from Evaluated Stream
	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Glenford	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Town	nship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	06/05/20 Quantity: 0.73
	Quantity.
Photograph Information: N Conony (% onen): 20	10/
Elevated Turbidity? (Y/N): Canopy (% open): 20	176
Were samples collected for water chemistry? (Y/N): Note la	ab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	t, please explain:
,	
Additional comments/description of pollution impacts: BANK Stability LOW	✓ MODERATE HIGH
BANK classificy	V MODERATE MICH
() ()	ner collections optional. NOTE: all voucher samples must be labeled with the site
Fish Observed? (Y/N) N Salamanders (observed? (Y/N) N Voucher? (Y/N) N Vouch
Fish Observed? (Y/N) N Salamanders Of Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aqua Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION	Observed? (Y/N) N Voucher? (Y/N) N
Fish Observed? (Y/N) N Salamanders Of Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aqua Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION	Observed? (Y/N) N Voucher? (Y/N) N Vouch
Fish Observed? (Y/N) N Salamanders Of Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aqua Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for Shrub Shrub	Observed? (Y/N) N Voucher? (Y/N) N Vouch

Save as pdf

Reset Form



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 079

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 079

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 079

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville	-North Newark 138 kV Transmission Line Rebuild Project	
s-aeh-20200610-04 SITE NUMBER_	RIVER BASIN Muskingum DRAINAGE AREA (m	i²) 0.01
LENGTH OF STREAM REACH (ft) 200	LAT. 39.96583 LONG82.30584 RIVER CODE RIVER MI	
DATE 06/10/20 SCORER AEH	COMMENTS ephemeral trib to Stream 081	
NOTE: Complete All Items On This Form	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for	Instructions
STREAM CHANNEL NONE / NA MODIFICATIONS: Culverted	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO	RECOVERY
	ery type of substrate present. Check ONLY two predominant substrate TYPE box	es ı HHEI
, ,	cant substrate types found (Max of 8). Final metric score is sum of boxes A & B. PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	0% SILT [3 pt] 35%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]	0% LEAF PACK/WOODY DEBRIS [3 pts] 5% 0%	Substrate
COBBLE (65-256 mm) [12 pts]	35% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	25% MUCK [0 pts] 0%	19
SAND (<2 mm) [6 pts]	0% ARTIFICIAL [3 pts] 0%	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	35.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of ad culverts or storm water pipes) (Check ONLY one box):	Pool Dept
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	IVIAX - 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS	MAXIMUM POOL DEPTH (Inches): 1.0	10
	(monco).	
3. BANK FULL WIDTH (Measured as the	e average of 3-4 measurements) (Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	(5.155)	
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	e average of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	e average of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	e average of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] \(\leq 1.0 m \) (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): This information must also be completed	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	e average of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] 4 VERAGE BANKFULL WIDTH (Feet): 1.0 m (significant formation must also be completed	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank)	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 1.0 This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R Mature Forest, Wetland Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 1.0 L R Conservation Tilla	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Check ONLY one box): AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.0 L R Conservation Tilla Onen Pasture, Ro	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field (Check ONLY one box): AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.1 L R (Feet): L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) D D D D D D D D D D D D D D D D D D D	Bankfull Width Max=30 5
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3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture (Check ONLY one box): 2 1.0 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.1 L R (Feet): 1.1 This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Conservation Tilla) Urban or Industria Open Pasture, Ro Mining or Construction Mining o	Bankfull Width Max=30 5
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Every Stream Flowing)	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture (Check ONLY one box): AVERAGE BANKFULL WIDTH (Feet): 1.0 AVERAGE BANKFULL WIDTH (Feet): 1.1 AVERAGE BA	Bankfull Width Max=30 5 ck ge l w Crop
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3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide > 10m Wide > 10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Every Stream Flowing Subsurface flow with isolated poor COMMENTS	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Residential Average Bankfull Width (Feet): 1.0 AVERAGE Bankfull Width (Feet): 1.0	Bankfull Width Max=30 5 ck ge l w Crop
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide > 10m Wide > 10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Evaluation of Evaluat	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermols (Interstitial) Por 61 m (200 ft) of channel) (Check ONLY one box): 1.0 Check ONLY one box): (Check ONLY one box):	Bankfull Width Max=30 5 ck ge l w Crop
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide > 10m Wide > 10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Every Stream Flowing Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends processed in the stream Flowing Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends processed in the stream Flowing Subsurface flow with isolated poor COMMENTS	AVERAGE BANKFULL WIDTH This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Renced Pasture Moist Channel, isolated pools, no flow (Intermols (Interstitial)) Moist Channel, no water (Ephemeral) Per 61 m (200 ft) of channel) (Check ONLY one box): 1.0 1.5 2.0 2.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Bankfull Width Max=30 5 ck ge l w Crop

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PHOTOGRAPHIC RECORD STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 080

Date:

June 10, 2020

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 080

Date:

June 10, 2020

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 080

Date:

June 10, 2020

Description:

Ephemeral

Modified Ephemeral

Stream





Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

	TITILI Score (sum of metrics 1, 2, 3).	
SITE NAME/LOCATION AEP-Crooksville-North I	Newark 138 kV Transmission Line Rebuild Project	
s-aeh-20200610-03 SITE NUMBER	RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.	04
	9.96622 LONG82.30572 RIVER CODE RIVER MILE 0.	.00
DATE 06/10/20 SCORER AEH	COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refe	r to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL C MODIFICATIONS:	HANNEL RECOVERED RECOVERING RECENT OR NO RECO	OVERY
SUBSTRATE (Estimate percent of every type of	of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant subst	trate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCENT		Metric Point
BLDR SLABS [16 pts] 0% BOULDER (>256 mm) [16 pts] 0%	SILT [3 pt] 25% LEAF PACK/WOODY DEBRIS [3 pts] 10%	1 Ollit
		Substrat
	TINE DETRITOO [5 pts]	Max = 4
COBBLE (00 200 mm) [12 pto]	OEAT OF THE EDIT	
GIVAVEE (2-04 IIIII) [5 pts]	Moort [opts]	25
57 (17 (12 min) [5 pts]	ARTIFICIAL [3 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 35.00%	(A) Substrate Percentage Check 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE T	TYPES: 21 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	Pool Dep
• •	s or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	l _
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS	14 00 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000	
COMINENTS	MAXIMUM POOL DEPIH (Inches): 1.00	
COMMENTS	MAXIMUM POOL DEPTH (Inches): 1.00	
3. BANK FULL WIDTH (Measured as the average	e of 3-4 measurements) (Check ONLY one box):	
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts]	e of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	e of 3-4 measurements) (Check ONLY one box):	Bankful Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts]	e of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	e of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	e of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	e of 3-4 measurements) (Check <i>ONLY</i> one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 4.00 This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QU	e of 3-4 measurements) (Check <i>ONLY</i> one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 4.00 This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QU	## Of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 4.00 This information must also be completed JALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ♠DDPLAIN QUALITY	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTER RIPARIAN WIDTH	## Of 3-4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE RIPARIAN WIDTH L R (Per Bank) L R	This information must also be completed JALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ DPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old (Check ONLY one box): (Check ONLY one box): 4.00 AVERAGE BANKFULL WIDTH (Feet): 4.00 L R Conservation Tillage Urban or Industrial	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOODPLAIN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m	This information must also be completed JALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ ODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Conservation Tillage Urban or Industrial Open Pasture Row Cro	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE PLOOF L R (Per Bank) Wide > 10m	This information must also be completed JALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ DPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old (Check ONLY one box): (Check ONLY one box): 4.00 AVERAGE BANKFULL WIDTH (Feet): 4.00 L R Conservation Tillage Urban or Industrial	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOOD	This information must also be completed JALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ ODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Conservation Tillage Urban or Industrial Open Pasture Row Cro	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOOD	This information must also be completed JALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ ODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field (Check ONLY one box): 4.00 AVERAGE BANKFULL WIDTH (Feet): 4.00 L R Conservation Tillage Urban or Industrial Open Pasture, Row Cro	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE F	This information must also be completed JALITY ANOTE: River Left (L) and Right (R) as looking downstream (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Park, New Field Check ONLY one box): (Check ONLY one box): (Peet): 4.00 AVERAGE BANKFULL WIDTH (Feet): 4.00 L R Conservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE F	This information must also be completed JALITY ☆NOTE: River Left (L) and Right (R) as looking downstream (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field (Check ONLY one box): (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOODPLAIN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Intersit	This information must also be completed JALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ↑ Mature Forest, Wetland	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FL	This information must also be completed JALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ↑ Mature Forest, Wetland	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOODPLAIN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Intersic COMMENTS)	This information must also be completed JALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ↑ Mature Forest, Wetland	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTER (Per Bank) L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Intersic COMMENTS) SINUOSITY (Number of bends per 61 m ()	This information must also be completed JALITY ANOTE: River Left (L) and Right (R) as looking downstream ADPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Residential, Park, New Field Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOO	This information must also be completed JALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ↑ Mature Forest, Wetland	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOODPLAIN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Intersic COMMENTS) SINUOSITY (Number of bends per 61 m (None) 1.0	## Conservation Tillage Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUENTE FLOOD RIPARIAN WIDTH FLOOD RIPARIAN WIDTH FLOOD RIPARIAN WIDTH FLOOD Wide >10 m Wide >10 m Narrow <5 m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Intersicon) SINUOSITY (Number of bends per 61 m (None None 1.0 None 1.0 1.5 STREAM GRADIENT ESTIMATE	## Conservation Tillage Check ONLY one box):	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Valley Run Distance from Evaluated Stream 3.50
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Township / City: Newark
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 06/05/20 Quantity: 0.73
Photograph Information:
Elevated Turbidity? (Y/N): N Canopy (% open): 15%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BANK Stability LOW MODERATE HIGH
DAIN GLADINY
BIOTIC EVALUATION
BIOTIC EVALUATION
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher?
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher?
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N)
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STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 081

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 081

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 081

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

AFD Out love the Mile N	THILL Score (sum of metrics 1, 2, 3).	
	orth Newark 138 kV Transmission Line Rebuild Project RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.13	=
s-aeh-20200610-02 SITE NUMBER 200 L	RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.13 AT. 39.96840 LONG82.30733 RIVER CODE RIVER MILE 0.0	
LENGTH OF STREAM REACH (ft) 200 LA	COMMENTS Intermittent	
5/112		
NOTE: Complete All Items On This Form -	Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	OIIS
STREAM CHANNEL NONE / NATU MODIFICATIONS:	RAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVE	RY
	type of substrate present. Check ONLY two predominant substrate TYPE boxes	HEI
, , ,	CENT TYPE PERCENT M	letric
BLDR SLABS [16 pts]	% SILT [3 pt] 40% P(oints
	176 IIII FINEDELRIUS 13 DISI	ıbstrate
	5% CLAY or HARDPAN [0 pt] 0%	ax = 40
OTATVEE (2 OF MINI) [0 pto]	0% MUCK [0 pts] 0%	17
67 (17 mm) [0 pto]	0% ARTIFICIAL [3 pts] 0%	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	00% (A) Substrate Percentage 100% (B)	\ + B
SCORE OF TWO MOST PREDOMINATE SUBSTR		
• •	, , ,	ol Depth ax = 30
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS	MAXIMUM POOL DEPTH (Inches): 8.00	
3. BANK FULL WIDTH (Measured as the av		ankfull
> 4.0 meters (> 13') [30 pts]	(Nidth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	L ≤ 1.0 m (<=3' 3") [5 pts]	lax=30
	AVEDAGE DANKELLI MUDTIL (F. 1) 4 00	4.5
COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 4.00	15
	This information must also be completed	
RIPARIAN ZONE AND FLOODPLA	AIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
<u>RIPARIAN WIDTH</u> L R (Per Bank)	FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	
Wide >10m	Mature Forest, Wetland Conservation Tillage	
✓ ✓ Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop	
None	Fenced Pasture Mining or Construction	
COMMENTS		
FLOW REGIME (At Time of Evalua	/ ` ·	
Stream Flowing Subsurface flow with isolated pools	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS_		
	61 m (200 ft) of channel) (Check ONLY one box):	
None 0.5	1.0 2.0 3.0 1.5 2.5 >3	
	_	
STREAM GRADIENT ESTIMATE		
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)	<u>):</u>
QHEI PERFORMED? - Yes / No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name: Valley Run	Distance from Evaluated Stream 3.70
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	HED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map	p Page: NRCS Soil Map Stream Order
County: Licking Township / City: New	vark
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 06/05/20	Quantity: 0.73
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 80%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or ic	d. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
	MODERATE HIGH
BANK Stability LOW	MODERATE HIGH
BANK Stability LOW BIOTIC EVALUATION	
BIOTIC EVALUATION Performed? (Y/N):N	onal. NOTE: all voucher samples must be labeled with the site
BANK Stability BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections option ID number. Include appropriate field data sheets from the	onal. NOTE: all voucher samples must be labeled with the site Primary Headwater Habitat Assessment Manual)
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PHOTOGRAPHIC RECORD STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 082

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 082

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 082

Date:

June 10, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV	Transmission Line Rebuild Project	
	Muskingum DRAINAGE AREA (mi²) 0.0	1
	-82.30873 RIVER CODE RIVER MILE 0.1	1
DATE 06/10/20 SCORER AEH COMMENTS Eph	nemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evalu	ation Manual for Ohio's PHWH Streams" for Instruc	ctions
STREAM CHANNEL NONE / NATURAL CHANNEL REC	COVERED RECOVERING RECENT OR NO RECOVERED	/ERY
SUBSTRATE (Estimate percent of every type of substrate preser	 :	
(Max of 32). Add total number of significant substrate types found (M TYPE PERCENT TYPE	PERCENT	HHEI Metric
BLDR SLABS [16 pts] 0% S	SILT [3 pt] 45%	Points
	EAF PACK/WOODY DEBRIS [3 pts]	Substrate
	CLAY or HARDPAN [0 pt]	Max = 40
	MUCK [0 pts]	15
SAND (<2 mm) [6 pts] A	RRTIFICIAL [3 pts]	
	ubstrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12	TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within		Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipe > 30 centimeters [20 pts]	es) (Check <i>ONLY</i> one box): > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	_
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS	MAXIMUM POOL DEPTH (Inches): 1.00	
	(monos).	
3. BANK FULL WIDTH (Measured as the average of 3-4 measureme		Bankfull
> 4.0 meters (> 13') [30 pts]	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts]	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r RIPARIAN ZONE AND FLOODPLAIN QUALITY □ RIPARIAN WIDTH □ RIPARIAN QUALITY □ RIPARIAN QUALITY □ RIPARIAN QUALITY □ RIPARIAN WIDTH □ RIPARIAN QUALITY	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream ☆ nant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information ration	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream☆ nant per Bank) Wetland Conservation Tillage st Shrub or Old	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r RIPARIAN ZONE AND FLOODPLAIN QUALITY □ RIPARIAN WIDTH □ FLOODPLAIN QUALITY □ RIPARIAN WIDTH □ Wide > 10m □ Mature Forest,	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream mant per Bank) Wetland Wetland St, Shrub or Old Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOT RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Immature Fore Field Narrow <5m Narrow <5m Residential, Pa	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream ☆ nant per Bank) Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information representation of the second of the secon	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream ☆ nant per Bank) Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOT RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predomin Wide >10m Mature Forest, Immature Fore Field Narrow <5m Moderate 5-10m Fenced Pasture COMMENTS	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream nant per Bank) Wetland Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop Mining or Construction	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOT RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predomin Wide >10m Mature Forest, Immature Fore Field Narrow <5m Residential, Pa None Fenced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one) Stream Flowing	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream nant per Bank) Wetland Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop Mining or Construction	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information r RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOT RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predomin Wide >10m Mature Forest, Immature Fore Field Narrow <5m Residential, Pa None Residential, Pa None Fenced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one of Stream Flowing Subsurface flow with isolated pools (Interstitial)	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream ☆ nant per Bank) Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop Mining or Construction	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information range in the second in the	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream hant per Bank) Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop Mining or Construction box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max=30
This information ration of the second secon	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream ☆ nant per Bank) Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop Mining or Construction box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) (Check ONLY one box): 2.0 3.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information range in the second in the	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream nant per Bank) Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop Mining or Construction box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max=30
This information r	ents) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 must also be completed E: River Left (L) and Right (R) as looking downstream hant per Bank) Wetland St, Shrub or Old Urban or Industrial Open Pasture, Row Crop Mining or Construction box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) (Check ONLY one box): 2.0 3.0	Width Max=30

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: Distance from Evaluated Stream	
Walley Run Distance from Evaluated Stream 3.90	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order	
County: Licking Township / City: Newark	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 06/05/20 Quantity: 0.73	
Photograph Information:	-
Elevated Turbidity? (Y/N): Canopy (% open):	
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:	_
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)	_
Is the sampling reach representative of the stream (Y/N) If not, please explain:	<u>-</u>
	<u> </u>
Additional comments/description of pollution impacts:	_
BANK Stability LOW MODERATE HIGH	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the samples of the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher?	ite
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):	
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location	
	shrubs
wetland	Siliub
black pipe	
black pipe	
black pipe herb	



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 083

Date:

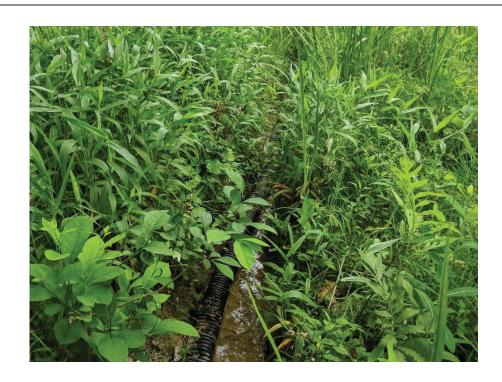
June 10, 2020

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 083

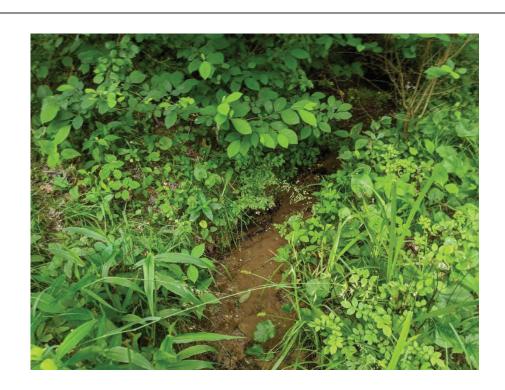
Date:

June 10, 2020

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 083

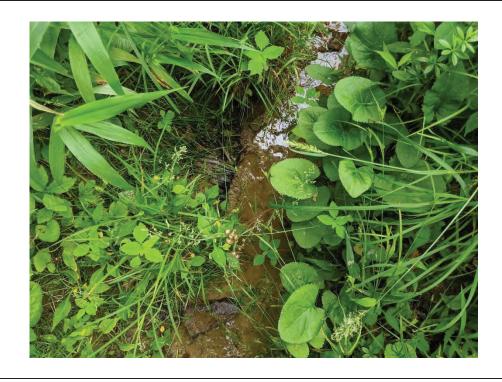
Date:

June 10, 2020

Description:

Ephemeral

Ephemeral Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

36		36
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SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project Inh-ach-20200609-01 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi*) 0.10 DRAINA
LANGE LANG
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: 1. SUBSTRATE (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 SILT [3 pt] PERCENT A9% PERCENT SILT [3 pt] SILT [3 p
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. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. (Max of 8). Final metric score
MODIFICATIONS: 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
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 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): ATOTAL NUMBER OF SUBSTRATE TYPES: MAXIMUM POOL DEPTH (Inches): 3.00 MAXIMUM POOL DEPTH (Inches): 3.00 BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13) [30 pts] > 4.0 meters (> 13) [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts]
TYPE
BLDR SLABS [16 pts] 0%
BEDROCK [16 pt]
COBBLE (65-256 mm) [12 pts]
GRAVEL (2-64 mm) [9 pts] 35% MUCK [0 pts] 0% ARTIFICIAL [3 pts] 0% MUCK [0 pts] 0% ARTIFICIAL [3 pts] 0% MUCK [0 pts] 0% ARTIFICIAL [3 pts] 0% A + B SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12
SAND (<2 mm) [6 pts]
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 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] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] COMMENTS MAXIMUM POOL DEPTH (Inches): 3.00 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] Bldr Slabs, Boulder, Cobble, Bedrock TOTAL NUMBER OF SUBSTRATE TYPES: 4 Pool Depti Max = 30 MAXIMUM POOL DEPTH (Inches): 3.00 Bankfull Width Width Max=30
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] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] COMMENTS MAXIMUM POOL DEPTH (Inches): 3.00 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] A TOTAL NUMBER OF SUBSTRATE TYPES: 4 Pool Deptimax = 30 MAXIMUM POOL DEPTH (Inches): 3.00 Bankfull Width > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts]
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] COMMENTS MAXIMUM POOL DEPTH (Inches): 3.00 BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] Width 30 m - 4.0 m (> 9' 7" - 13') [25 pts]
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] COMMENTS MAXIMUM POOL DEPTH (Inches): 3.00 BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] Author
22.5 - 30 cm [30 pts]
COMMENTS MAXIMUM POOL DEPTH (Inches): 3.00 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] Vidth Max=30
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] Width > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ (=3' 3") [5 pts] Width ✓ (=3' 3") [5 pts]
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts] Max=30
COMMENTSAVERAGE BANKFULL WIDTH (Feet): 2.00 5
This information must also be completed
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY
L R (Per Bank) L R (Most Predominant per Bank) L R
Wide >10m
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop
None Fenced Pasture Mining or Construction
COMMENTS
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
COMMENTS
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0

ADDITIONAL STREAM INFORMATION (This Information Must Als	so be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: EWH Name: Claylick Creek	Distance from Evaluated Stream Distance from Evaluated Stream 0.00
	Distance Iron Evaluated Stream
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Quadrangle Name: Glenford	NRCS Soil Map Page: NRCS Soil Map Stream Order
county: Licking Towr	nship / City:Newark
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	06/05/20 Quantity: 0.73
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 80	0%
Vere samples collected for water chemistry? (Y/N): Note la	ab sample no. or id. and attach results) Lab Number:
ield Measures: Temp (°C) Dissolved Oxygen (ma/l)	pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N)	t, please explain:
additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE / HIGH
ish Observed? (Y/N) N Voucher? (Y/N) N Salamanders	observed? (Y/N) N Voucher? (Y/N) N Vouch
DRAWING AND NAPRATIVE DESCRIPTION	N OF STREAM REACH (This <u>must</u> be completed):
	or site evaluation and a narrative description of the stream's location
>	
Low	rama wattan d
	pem wetland
7	shrubs
^	\sim
\wedge	
	grass path
	woods
PHWH ctober 24, 2002 Revision	Form Page - 2 Save as pdf Reset Form
	Save as pdf Reset Form



PHOTOGRAPHIC RECORD **STREAMS**

Site Location:

Project No.

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Stream 084

Client Name:

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 084

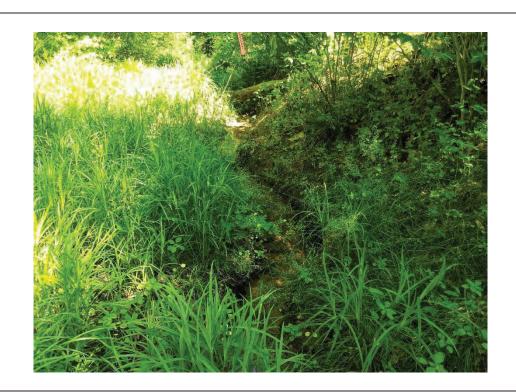
Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 084

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION AEP-Crooksville-N	lorth Newark 138 kV	Transmission Line Re		
hh-aeh-20200609-02 SITE NUMBER		Muskingum	DRAINAGE AREA (mi²)	0.10
		-82.31160 RIVER COD		
DATE 06/09/20 SCORER AEH		ermittent, Claylick Cree		
NOTE: Complete All Items On This Form				ructions
·				
STREAM CHANNEL NONE / NATU MODIFICATIONS:	JRAL CHANNEL MREC	COVERED RECOVERIN	G LI RECENT OR NO REC	OVERY
BLDR SLABS [16 pts]	nt substrate types found (MRCENT TYPE 0%		sum of boxes A & B. PERCENT 40%	HHEI Metric Points
		FINE DETRITUS [3 pts]	0%	Substrate Max = 40
OOBBEE (OO 200 MMM) [12 pto]		CLAY or HARDPAN [0 pt]	0%	IVIAX - 40
OF CHANGE (2 OF HIM) [0 pto]		MUCK [0 pts] ARTIFICIAL [3 pts]	0%	16
T. I. I. C. D		Substrate Percentage 100%	(B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTI		TOTAL NUMBER OF SU	RSTRATE TYPES: 4	^.5
2. Maximum Pool Depth (Measure the maxevaluation. Avoid plunge pools from road of > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]				Pool Dept Max = 30
> 10 - 22.5 cm [25 pts]		NO WATER OR MOIST CHA	NNEL [0 pts]	25
COMMENTS		MAXIMUM POOL DEF	PTH (Inches): 5.00	
3. BANK FULL WIDTH (Measured as the a > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	verage of 3-4 measurement	ents) (Check ONLY of the second of the secon	•	Bankfull Width Max=30
COMMENTS		AVERAGE BANKFUL	L WIDTH (Feet): 3.00	5
			` /	
RIPARIAN ZONE AND FLOODPL RIPARIAN WIDTH L R (Per Bank)	AIN QUALITY ☆NOT FLOODPLAIN QUALITY LR (Most Predomi	nant per Bank) L F	3	
Wide >10m Moderate 5-10m	Mature Forest,	Wetland LL est, Shrub or Old	Conservation Tillage Urban or Industrial	
	Field		Open Pasture, Row Cr	ор
☐☐ Narrow <5m ☐☐ None	Residential, Pa		_	
COMMENTS	Fenced Pastur		Mining or Construction	L
FLOW REGIME (At Time of Evalue) Stream Flowing Subsurface flow with isolated pools COMMENTS	, ,		ed pools, no flow (Intermittent er (Ephemeral)	i)
SINUOSITY (Number of bends pe None 0.5	r 61 m (200 ft) of channel) 1.0 1.5	(Check ONLY one box): 2.0 2.5	3.0	
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	o be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Distance from Fuglicated Chapma
WWH Name: CWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream
EWH Name: Claylick Creek	Distance from Evaluated Stream 0.00
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE E	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Town	ship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	06/05/20 Quantity: 0.73
Photograph Information:	
Elevated Turbidity? (Y/N): Canopy (% open): 80	%
Were samples collected for water chemistry? (Y/N):	b sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N)	, please explain:
Additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE HIGH
ID number. Include appropriate field dat Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders O	er collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual) Observed? (Y/N) N Voucher? (Y/N
	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest fo	r site evaluation and a narrative description of the stream's location
FLOW	wetland



PHOTOGRAPHIC RECORD **STREAMS**

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 085

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 085

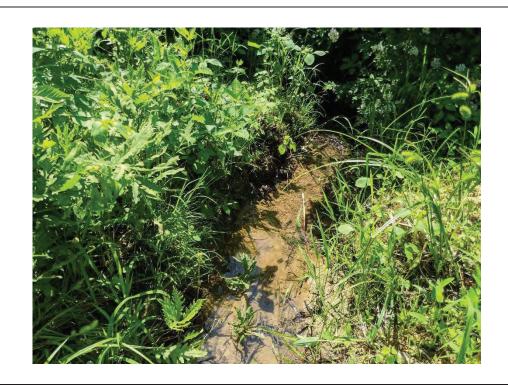
Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 085

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

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

	35	
--	----	--

SITE NAME/LOCATION AEP-Crooksville-North N	ewark 138 kV Transmission Line Rebu	ild Project	
hh-aeh-20200609-03 SITE NUMBER		DRAINAGE AREA (mi²) 0.01	
LENGTH OF STREAM REACH (ft) 200 LAT. 39.		RIVER MILE 0.01	
DATE 06/09/20 SCORER AEH CO	OMMENTS pIntermittent		
NOTE: Complete All Items On This Form - Refer	to "Field Evaluation Manual for Ohio's PH	WH Streams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHANNODIFICATIONS:	ANNEL RECOVERED RECOVERING	RECENT OR NO RECOVERY	
SUBSTRATE (Estimate percent of every type of	· · · · · · · · · · · · · · · · · ·		
(Max of 32). Add total number of significant substra TYPE PERCENT	ate types found (Max of 8). Final metric score is sur	PERCENT Metric	
BLDR SLABS [16 pts] 0% BOULDER (>256 mm) [16 pts] 0%	SILT [3 pt] LEAF PACK/WOODY DEBRIS [3	60% Points	
BOULDER (>256 mm) [16 pts] 0% BEDROCK [16 pt] 0%	FINE DETRITUS [3 pts]	0% Substrate	
COBBLE (65-256 mm) [12 pts] 0%	CLAY or HARDPAN [0 pt]	0% Max = 40	
GRAVEL (2-64 mm) [9 pts] 20% SAND (<2 mm) [6 pts] 0%	☐☐ MUCK [0 pts] ☐☐ ARTIFICIAL [3 pts]	0% 15	
Table (2 mm) to peop		(D)	
Bldr Slabs, Boulder, Cobble, Bedrock	(A) Substrate Percentage Check 100%		
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TY	PES: 12 TOTAL NUMBER OF SUBST	FRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum p			
evaluation. Avoid plunge pools from road culverts of > 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	Max = 30	
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	S cm [5 pts] NO WATER OR MOIST CHANN	EL [0 pts] 15	
COMMENTS	MAXIMUM POOL DEPTH	(Inches): 3.00	
3. BANK FULL WIDTH (Measured as the average of	of 3-4 measurements) (Check ONLY one	box): Bankfull	
3. BANK FULL WIDTH (Measured as the average of > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]		box): Bankfull	
3. BANK FULL WIDTH (Measured as the average of > 4.0 meters (> 13') [30 pts]	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15	box): Bankfull Width	
3. BANK FULL WIDTH (Measured as the average of > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15	box): Bankfull Width Max=30	
3. BANK FULL WIDTH (Measured as the average of > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	of 3-4 measurements) (Check <i>ONLY</i> one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL W	box): 5 pts] Bankfull Width Max=30	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	of 3-4 measurements) (Check <i>ONLY</i> one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15	box): Sipts] Width Max=30 MDTH (Feet): 2.00	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS T RIPARIAN ZONE AND FLOODPLAIN QUARIPARIAN WIDTH FLOOD	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL W This information must also be completed ALITY 公NOTE: River Left (L) and Right (R) as OPLAIN QUALITY	box): Sipts] Width Max=30 MDTH (Feet): 2.00	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUARMIPARIAN WIDTH L R (Per Bank) L R	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL W This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as PLAIN QUALITY (Most Predominant per Bank) L R	box): S pts] Width Max=30 Solution (Feet): 2.00 Solution (Feet): 2.00	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS T RIPARIAN ZONE AND FLOODPLAIN QUARIPARIAN WIDTH FLOOD	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [18] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL W This information must also be completed ALITY ♣NOTE: River Left (L) and Right (R) as PLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old	box): Sipts] Width Max=30 MDTH (Feet): 2.00	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15]	box): 5 pts] Width Max=30 SIDTH (Feet): 2.00 Solve the state of th	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) Wide >10 m Wide >10 m Narrow <5 m	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL W This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field	box): Sipts] Width Max=30 SiDTH (Feet): 2.00	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) Wide >10m V Moderate 5-10m	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15]	box): box): box): Width Max=30 Side the part of	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) Wide >10 m Wide >10 m Narrow <5 m None	of 3-4 measurements) (Check ONLY one > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15]	box): Sipts] Width Max=30 SiDTH (Feet): 2.00	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) (Control of Stream Flowing)	of 3-4 measurements) > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL W This information must also be completed ALITY ANOTE: River Left (L) and Right (R) as OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Check ONLY one box): Moist Channel, isolated p	box): 5 pts] Bankfull Width Max=30 Dooling downstream Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Dools, no flow (Intermittent)	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) (Comments)	of 3-4 measurements) > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL W This information must also be completed ALITY ANOTE: River Left (L) and Right (R) as OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Check ONLY one box): Moist Channel, isolated p	box): 5 pts] Bankfull Width Max=30 Dooling downstream Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Dools, no flow (Intermittent)	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstit	of 3-4 measurements) > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15	box): 5 pts] Bankfull Width Max=30 Dooling downstream Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Dools, no flow (Intermittent)	
3. BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH (Per Bank) Wide >10 m Wide >10 m Wide >10 m Wide >5 m None COMMENTS FLOW REGIME (At Time of Evaluation) (Continue of Stream Flowing Subsurface flow with isolated pools (Interstit COMMENTS) SINUOSITY (Number of bends per 61 m (2) None 1.0	of 3-4 measurements) > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15	box): 5 pts] Bankfull Width Max=30 Did to the position of t	
BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH (Per Bank) Wide >10m Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstit COMMENTS) SINUOSITY (Number of bends per 61 m (20 None 0.5 1.0 1.5)	of 3-4 measurements) > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15	box): Bankfull Width Max=30 IDTH (Feet): 2.00 Solve the second of th	
BANK FULL WIDTH (Measured as the average of 24.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH (Per Bank) Wide >10 m Wide >10 m Wide >10 m Warrow <5 m None COMMENTS FLOW REGIME (At Time of Evaluation) (Of Stream Flowing Subsurface flow with isolated pools (Interstit COMMENTS) SINUOSITY (Number of bends per 61 m (2) None 0.5 STREAM GRADIENT ESTIMATE	of 3-4 measurements) > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15	box): 5 pts] Bankfull Width Max=30 Did to the position of t	

ADDITIONAL STREAM INFORMATION (This Information Must Also	pe Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: Claylick Creek	Distance from Evaluated Stream Distance from Evaluated Stream 0.01
	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Townsh	ip / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	06/05/20 Quantity: 0.73
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 0%	
Were samples collected for water chemistry? (Y/N): N (Note lab	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (ma/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	lease explain:
Additional comments/decoription of pollution impacts.	
Additional comments/description of pollution impacts: BANK Stability LOW	MODERATE / HIGH
BIOTIC EVALUATION	
ID number. Include appropriate field data : Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Ob	collections optional. NOTE: all voucher samples must be labeled with the site sheets from the Primary Headwater Habitat Assessment Manual) served? (Y/N) N Voucher? (Y/N) N Vouc
Performed? (Y/N): N (If Yes, Record all observations. Voucher ID number. Include appropriate field data series of the Comments Regarding Biology: N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquation Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION (sheets from the Primary Headwater Habitat Assessment Manual) served? (Y/N) N Voucher? (Y/N)
Performed? (Y/N): N (If Yes, Record all observations. Voucher ID number. Include appropriate field data served? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquation Comments Regarding Biology:	sheets from the Primary Headwater Habitat Assessment Manual) served? (Y/N) N Voucher? (Y/N)
Performed? (Y/N): N (If Yes, Record all observations. Voucher ID number. Include appropriate field data series of the Comments Regarding Biology: N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquation Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION (Sheets from the Primary Headwater Habitat Assessment Manual) served? (Y/N) N Voucher? (Y/N
Performed? (Y/N): N (If Yes, Record all observations. Voucher ID number. Include appropriate field data series of the Comments Regarding Biology: N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquation Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION (sheets from the Primary Headwater Habitat Assessment Manual) served? (Y/N) N Voucher? (Y/N)
Performed? (Y/N): N (If Yes, Record all observations. Voucher ID number. Include appropriate field data series of the Comments Regarding Biology: N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquation Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION (Shrubs Sheets from the Primary Headwater Habitat Assessment Manual) Served? (Y/N) N Voucher? (Y/N) N Vouch
Performed? (Y/N): N (If Yes, Record all observations. Voucher ID number. Include appropriate field data series of the Comments Regarding Biology: N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquation Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION (Sheets from the Primary Headwater Habitat Assessment Manual) served? (Y/N) N Voucher? (Y/N
Performed? (Y/N): N	Shrubs Sheets from the Primary Headwater Habitat Assessment Manual) Served? (Y/N) N Voucher? (Y/N) N Vouch
Performed? (Y/N): N	Shrubs Sheets from the Primary Headwater Habitat Assessment Manual) Served? (Y/N) N Voucher? (Y/N) N Vouch
Performed? (Y/N): N	Shrubs Sheets from the Primary Headwater Habitat Assessment Manual) Served? (Y/N) N Voucher? (Y/N) N Vouch
Performed? (Y/N): N	Shrubs Sheets from the Primary Headwater Habitat Assessment Manual) Served? (Y/N) N Voucher? (Y/N) N Vouch
Performed? (Y/N): N	Sheets from the Primary Headwater Habitat Assessment Manual) Served? (Y/N) N Voucher? (Y/N)



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 086

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 086

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 086

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

49

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

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
hh-aeh-20200609-04 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	80.0
LENGTH OF STREAM REACH (ft) 200 LAT. 39.97731 LONG82.31283 RIVER CODE RIVER MILE	
DATE 06/09/20 SCORER AEH COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Insti	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING CUIVErted	OVERY
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] 0% ✓ □ SILT [3 pt] 40%	Metric Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] DW LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 35% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ GRAVEL (2-64 mm) [9 pts] 20% ☐ MUCK [0 pts] 0% ☐ SAND (<2 mm) [6 pts]	19
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 35.00% (A) Substrate Percentage Check 100%	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 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):	Pool Dept
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	25
COMMENTS MAXIMUM POOL DEPTH (Inches): 4.00	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
COMMENTSAVERAGE BANKFULL WIDTH (Feet): 3.00	5
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY L. D. (New Paris) L. D. (Mark Paris) Reput Transport Transpor	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cr	ор
□□ None □□ Fenced Pasture □□ Mining or Construction	
COMMENTS	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral))
	L
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	T
	L

ADDITIONAL STREAM INFORMATION (This Infor	mation Must Also be Completed):		
QHEI PERFORMED? - Yes ✓ No	QHEI Score (If Yes, Att	ach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)		7	
CWH Name:		Distance from Evaluated Stream Distance from Evaluated Stream	
EWH Name: Claylick Creek		Distance from Evaluated Stream _	0.07
MAPPING: ATTACH COPIES OF MAPS, II	NCLUDING THE <u>ENTIRE</u> WATERSHE	D AREA. CLEARLY MARK THE SITE L	OCATION
JSGS Quadrangle Name:	NRCS Soil Map	Page: NRCS Soil Map Stream	n Order
County: Licking	Township / City:	rk	
MISCELLANEOUS			
Y	precipitation: 06/05/20	Quantity: 0.73	
Photograph Information:	proorphation		
Elevated Turbidity? (Y/N):	% open): 85%		
Vere samples collected for water chemistry? (Y/N):	N	and attach results) Lab Number:	
		Conductivity (µmhos/cm)	
	Y		
s the sampling reach representative of the stream (Y/N) If not, please explain:		
Additional comments/description of pollution impac BANK Stability		IODERATE / HIGH	4
•		V	
· /	ppropriate field data sheets from the P Salamanders Observed? (Y/N)	al. NOTE: all voucher samples must be l rimary Headwater Habitat Assessment M Voucher? (Y/N) N ates Observed? (Y/N) Voucher?	anual)
DRAWING AND NARRATIVE D			-
		wetland	
HOW -			
LOW			
		herb	
	Grass path	lieib	
	DUMU Form Posso C		
ctober 24, 2002 Revision	PHWH Form Page - 2		

Save as pdf

Reset Form



PHOTOGRAPHIC RECORD STREAMS

Site Location:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 087

Client Name:

Date:

June 9, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 087

Date:

June 9, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 087

Date:

June 9, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

27

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
hh-aeh-20200609-05 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) LAT. 39.98030 LONG82.31396 RIVER CODE RIVER MILE	
DATE 06/09/20 SCORER AEH COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute 1.00 (1997) (19	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVE	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	. UUEI
(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	HHEI Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 60%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 40% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	17
SAND (<2 mm) [6 pts]	
Total of Percentages of 40.00% (A) Substrate Percentage 100% (B) Check	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 2	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
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]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH (Inches): 1.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	
	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY LR (Per Bank) AVERAGE BANKFULL WIDTH (Feet): 1.00 AVERAGE BANKFULL WIDTH (Feet): 1.00 AVERAGE BANKFULL WIDTH (Feet): 1.00 LR (Most Predominant per Bank) LR	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m (Yer Server) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m None Pasture Row Creen Pa	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 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 Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cr	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m (Yer Server) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m None Pasture Row Creen Pa	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Narrow <5m None Residential, Park, New Field None COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 AVERAGE BANKFULL WIDTH (Feet): 1.00 L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage Urban or Industrial Open Pasture, Row Cr None COMMENTS	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Narrow <5m Narrow <5m None Residential, Park, New Field Flood Pediuation) (Check ONLY one box):	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY → NOTE: River Left (L) and Right (R) as looking downstream → RIPARIAN WIDTH	Width Max=30
Salom - 4.0 m (> 9' 7" - 13') [25 pts] Salom (<=3' 3") [5 pts] Salom (> 9' 7" - 4' 8") [20 pts] Salom (> 9' 7" -	Width Max=30
S 3.0 m -4.0 m (> 9' 7" - 13') [25 pts] S 1.5 m -3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
Salom - 4.0 m (> 9' 7" - 13') [25 pts] Salom (<=3' 3") [5 pts] Salom (> 9' 7" - 4' 8") [20 pts] Salom (> 9' 7" -	Width Max=30 5

01151 8555555	MATION (This Information Must Also		LOUELE
	- Yes No QHEI Score	(If Yes, Attach Completed	I QHEI Form)
WWH Name:	GNATED USE(S)	Distance fr	om Evaluated Stream
CWH Name:			om Evaluated Stream _
EWH Name: Claylick Cree	k	Distance from	om Evaluated Stream 0.12
MAPPING: ATTACH C	OPIES OF MAPS, INCLUDING THE EN	ITIRE WATERSHED AREA. CLEA	ARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	ford	NRCS Soil Map Page:	NRCS Soil Map Stream Order
County: licking	Towns	hip / City: Newark	
MISCELLANEOUS			
Base Flow Conditions? (Y/N):	Date of last precipitation:	06/05/20 Quantity	0.73
Photograph Information:			
Elevated Turbidity? (Y/N):	Canopy (% open): 75 %	6	
Were samples collected for water	er chemistry? (Y/N): N (Note lab	o sample no. or id. and attach res	ults) Lab Number:
Field Measures: Temp (°C)	Dissolved Oxygen (ma/l)	pH (S.U.) Cond	uctivity (µmhos/cm)
Is the sampling reach representa	ative of the stream (Y/N)	please explain:	
Additional comments/description	of pollution impacts:		
radicional commoncordecompact	r or policitori irripacto.		
BIOTIC EVALUATION	LOW	MODERATE	НІСН
BIOTIC EVALUATION Performed? (Y/N): N (N If Yes, Record all observations. Vouche D number. Include appropriate field data /oucher? (Y/N) Salamanders O	r collections optional. NOTE: all vo	oucher samples must be labeled with the result of the r
BIOTIC EVALUATION Performed? (Y/N): N (Fish Observed? (Y/N) N (Frogs or Tadpoles Observed? (Y/N)	N If Yes, Record all observations. Vouche D number. Include appropriate field data /oucher? (Y/N) Salamanders O	r collections optional. NOTE: all vo a sheets from the Primary Headwat bserved? (Y/N) Voucher?	oucher samples must be labeled with the result of the r
BIOTIC EVALUATION Performed? (Y/N): N (Fish Observed? (Y/N) N (Frogs or Tadpoles Observed? (Y Comments Regarding Biology:	N If Yes, Record all observations. Vouche D number. Include appropriate field data Voucher? (Y/N) Salamanders O	r collections optional. NOTE: all von a sheets from the Primary Headwath bserved? (Y/N) N Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled witer Habitat Assessment Manual) (Y/N) N Voucher? (Y/N) N
BIOTIC EVALUATION Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND	Noucher? (Y/N) Nouche	r collections optional. NOTE: all von a sheets from the Primary Headward bserved? (Y/N) Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled with the real transfer of the real transf
BIOTIC EVALUATION Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y Comments Regarding Biology: DRAWING AND Include important landma	Noucher? (Y/N) Nouche	r collections optional. NOTE: all von a sheets from the Primary Headward bserved? (Y/N) Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled with the real transfer of the real transf
BIOTIC EVALUATION Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y Comments Regarding Biology: DRAWING AND Include important landma	Noucher? (Y/N) Nouche	r collections optional. NOTE: all von a sheets from the Primary Headward bserved? (Y/N) Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled with the real transfer of the real transf
BIOTIC EVALUATION Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology:	Noucher? (Y/N) Nouche	r collections optional. NOTE: all von a sheets from the Primary Headward bserved? (Y/N) Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled with the real transfer of the real transf
BIOTIC EVALUATION Performed? (Y/N): N Fish Observed? (Y/N) Comments Regarding Biology: DRAWING AND Include important landma	Noucher? (Y/N) Nouche	r collections optional. NOTE: all von a sheets from the Primary Headward bserved? (Y/N) Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled with the real transfer of the real transf
BIOTIC EVALUATION Performed? (Y/N): N (Fish Observed? (Y/N) N Frogs or Tadpoles Observed? (Y Comments Regarding Biology:	Noucher? (Y/N) Nouche	r collections optional. NOTE: all von a sheets from the Primary Headward bserved? (Y/N) Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled with the real transfer of the real transf
BIOTIC EVALUATION Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology:	Noucher? (Y/N) Nouche	r collections optional. NOTE: all von a sheets from the Primary Headward bserved? (Y/N) Voucher? tic Macroinvertebrates Observed?	oucher samples must be labeled with the real transfer of the real transf



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 088

Date:

June 9, 2020

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 088

Date:

June 9, 2020

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 088

Date:

June 9, 2020

Description:

Ephemeral

Ephemeral Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
hh-aeh-20200609-06 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) 200 LAT. 39.98049 LONG82.31404 RIVER CODE RIVER MILE	0.11
DATE 06/09/20 SCORER AEH COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS: disturbed from transmission line	COVERY
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	HHEI Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] O% MUCK [0 pts] O% ARTIFICIAL [3 pts] O%	8
Total of Percentages of Cook (A) Substrate Percentage (B)	A+B
Bldr Slabs, Boulder, Cobble, Bedrock 6 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 2	ATB
 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): 	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	15
COMMENTS MAXIMUM POOL DEPTH (Inches): 2.00	
` '	
3 RANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
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]	Bankfull Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH EL R (Per Bank) U	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Mature Forest, Shrub or Old Urban or Industrial Field Conservation Provided Conservation P	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Width Max=30 5
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Mature Forest, Shrub or Old Urban or Industrial Field Conservation Provided Conservation P	Width Max=30 5
> 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30 5
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10 m Narrow <5 m Narrow <5 m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moderate 5-10 m (S' 3' 3" - 4' 8") [15 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] 1.00 m 2 m (<=3' 3") [5 pts] 3 m (<=3' 3") [5 pts] 4 m (<=3' 3") [5 pts] 5 m (0 m (<=3' 3") [5 pts] 6 m (0 m (<=3' 3") [5 pts] 7 m (<=3' 3") [5 pts] 8 m (0 m (<=3' 3") [5 pts] 9 m (<=3' 3") [5 pts] 1.00 m (<=3'	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10 m Narrow <5 m None Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) No water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0 m (<=1, 10.0 m (<=1, 10.0 m	Width Max=30
> 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0 m (<=1, 10.0 m (<=1, 10.0 m	Width Max=30 5

ADDITIONAL STREAM INFORMATION (This Information Must Also be	Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: WEWH Name: Claylick Creek	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIR	
Lieking	RCS Soil Map Page: NRCS Soil Map Stream Order
County Township	/ City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation:	6/05/20 Quantity: 0.73
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 90%	
Were samples collected for water chemistry? (Y/N): N (Note lab sa	mple no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (ma/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, ple	ase explain:
Additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE
Print Gubinity	MODERATE HIGH
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data sh Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Obse	llections optional. NOTE: all voucher samples must be labeled with the site eets from the Primary Headwater Habitat Assessment Manual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data shifts of the Control of the C	llections optional. NOTE: all voucher samples must be labeled with the site eets from the Primary Headwater Habitat Assessment Manual) rved? (Y/N) N Voucher? (Y/N)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data shi Fish Observed? (Y/N) Voucher? (Y/N) N Salamanders Observed? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF	Elections optional. NOTE: all voucher samples must be labeled with the site eets from the Primary Headwater Habitat Assessment Manual) rved? (Y/N) N Voucher?
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data shiftsh Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observeds or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic N Comments Regarding Biology:	Elections optional. NOTE: all voucher samples must be labeled with the site eets from the Primary Headwater Habitat Assessment Manual) rved? (Y/N) N Voucher?
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data shi Fish Observed? (Y/N) Voucher? (Y/N) N Salamanders Observed? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF	Elections optional. NOTE: all voucher samples must be labeled with the site eets from the Primary Headwater Habitat Assessment Manual) rved? (Y/N) N Voucher?
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data shi Fish Observed? (Y/N) Voucher? (Y/N) N Salamanders Observed? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF	Elections optional. NOTE: all voucher samples must be labeled with the site eets from the Primary Headwater Habitat Assessment Manual) rved? (Y/N) N Voucher?
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data sh Fish Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Aquatic N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of interest for sit	Estream Reach (This must be completed): e evaluation and a narrative description of the stream's location stream
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher co ID number. Include appropriate field data sh Fish Observed? (Y/N) Voucher? (Y/N) N Salamanders Observed? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of interest for sit	Estream Reach (This must be completed): e evaluation and a narrative description of the stream's location stream



PHOTOGRAPHIC RECORD STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 089

Date:

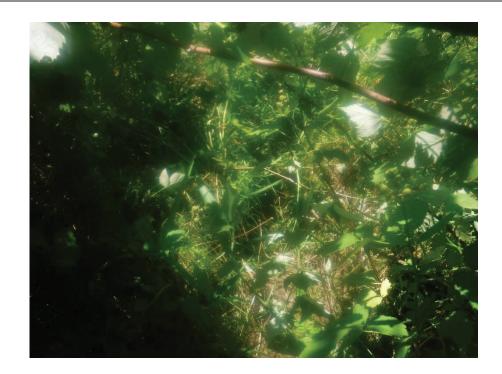
June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 089

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 089

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

55.0

Stream & Location: AEP-Cro	ooksville-North Newark 138 k	V Transmission Lir	ne Rebuild Project	RM: 8.6 Da	te: 6 9 20
s-aeh-20200609-07 / Claylid	k Creek Sc		e & Affiliation:	AECOM, AEH	
River Code:	STORET #:	Lat./ Lor	ng.: 39.9853	/8 2.3156	Office verified location
BEST TYPES	note every type present	POOL RIFFLE 15	Check Of ORIGIN LIMESTONE [1] TILLS [1] WETLANDS [0]	SILT HEAV	ERATE [-1] Substrate
□□ BEDROCK [5]	(Score natural s	substrates; ignore	RIP/RAP [0]	MODE NORM	RATE [-1] Maximum
NUMBER OF BEST TYPES Comments		H	COAL FINES [-2]		IAL [0] 20 [1]
2] INSTREAM COVER Indica quality quality; 3-Highest quality in moder diameter log that is stable, well de 1 UNDERCUT BANKS [1] 1 OVERHANGING VEGETATI 0 SHALLOWS (IN SLOW WAY 0 ROOTMATS [1] Comments	y; 2-Moderate amounts, but no ate or greater amounts (e.g., veloped rootwad in deep / fast 0 POOLS > 70c ON [1] ROOTWADS	of of highest quality of ery large boulders in water, or deep, well- cm [2] OXB [1] AQU	or in small amounts c n deep or fast water.	of highest large Check ONE	MOUNT E (Or 2 & average) EVE >75% [11] EXTE 25-75% [7] 5-<25% [3] ABSENT <5% [1] Cover Maximum 20
3] CHANNEL MORPHOLOG	Y Check ONE in each catego	ory (Or 2 & average)			
SINUOSITY DEVELOP ☐ HIGH [4] ☐ EXCELLE ☐ MODERATE [3] ☐ GOOD [5 ☐ LOW [2] ☐ FAIR [3] ☐ NONE [1] ☐ POOR [1] Comments	MENT CHANNELIZ ENT [7] □ NONE [6] J □ RECOVERED [4]	ZATION [4]	STABILITY ☐ HIGH [3] ☑ MODERATE [2] ☐ LOW [1]		Channel Maximum 20
4] BANK EROSION AND R					
□ □ NONE / LITTLE [3] □ □ □ MODERATE [2] □ □ □ HEAVY / SEVERE [1] □	VERY NARROW < 5m [1] □	I ☐ FOREST, SWAI I ⊠ SHRUB OR OL I ☐ RESIDENTIAL,	.D FIELD [2] PARK, NEW FIELD ['URE [1]	CONSERVA	Pinarian
Comments					Maximum 6.00
☐ > 1m [6]	FLE / RUN QUALITY CHANNEL WIDTH heck ONE (Or 2 & average) DL WIDTH > RIFFLE WIDTH [2] DL WIDTH = RIFFLE WIDTH [1] DL WIDTH < RIFFLE WIDTH [0]	Check TORRENTIAL Control Contr	ENT VELOCITY ALL that apply [-1-1] SLOW [1] I] INTERSTITI INTERMITT [1] EDDIES [1] reach - pools and riffle	Prima Second (circle one ar	ion Potential ary Contact dary Contact decomment on back Pool / Current Maximum 12
☑ BEST AREAS > 10cm [2] ☐ M	S: Check (RUN DEPTH RIFF AXIMUM > 50cm [2] ☐ STAE AXIMUM < 50cm [1] ☒ MOD	ONE (Or 2 & averag FLE / RUN SUB BLE (e.g., Cobble, E	e). STRATE RIFF Boulder) [2] 'ge Gravel) [1]	I population LE / RUN EMBED NONE [2] LOW [1] MODERATE EXTENSIVE [ro1 Riffle /
	_				8
6] GRADIENT (136.00 ft/mi) DRAINAGE AREA (1.12 mi²)	 VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6 		=	%GLIDE:(%RIFFLE:(Gradient Maximum 10

AJ SAMPLED REACH Comment RE: Check ALL that apply	Reach consistency/ Is r	each typical of steam?, Recreation/	Observed - Inferred, Other	Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc	ss directions, etc.
	Claylick Creek existing ALU = EV	ЕWН			
IJ□ ₩					
0.5 Km	S HYTES	DJ MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED MODIFIED / DIPPED OUT / NA LEVEED / ONE SIDED RELOCATED / CUTOFFS MOVING-BEDLOAD-STABLE ARMOURED / SLUMPS ISLANDS / SCOURED IMPOUNDED / DESICCATED	Circle some & COMMENT	WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL BMPS-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H ₂ 0 / TILE / H ₂ 0 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY	FJ MEASUREMENTS \overline{x} width \overline{x} depth max. depth \overline{x} bankfull width bankfull \overline{x} depth W/D ratio bankfull max. depth floodprone x² width entrench. ratio Legacy Tree:
Stream 7 Stream 7 Stream 7 Stream 7 Stream 7	Z E Z	Gravel bar			
				herb	



PHOTOGRAPHIC RECORD STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 090

Date:

June 9, 2020

Description:

Perennial

Warmwater Habitat -Good

Facing Upstream



Stream 090

Date:

June 9, 2020

Description:

Perennial

Warmwater Habitat -Good





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 090

Date:

June 9, 2020

Description:

Perennial

Warmwater Habitat -Good Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form

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

hh-aeh-20200609-08 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.	
hh-aeh-20200609-08 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.	72
LENGTH OF STREAM REACH (ft) 200 LAT. 39.98505 LONG82.31550 RIVER CODE RIVER MILE 0.	.0
DATE 06/09/20 SCORER AEH COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS:	OVERY
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.	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] 5%	1 Office
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 25% CLAY or HARDPAN [0 pt] 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	
GRAVEL (2-64 mm) [9 pts] 30% MUCK [0 pts] 0% ARTIFICIAL [3 pts] 0%	16
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 25.00% (A) Substrate Percentage Check 100% (B)	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	Pool Dept
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]	Max = 30
> 22.5 - 30 cm [30 pts]	30
COMMENTS MAXIMUM POOL DEPTH (Inches): 10.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 6.00 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 6.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 6.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 6.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 6.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Conservation Tillage Immature Forest, Shrub or Old Field Conservation Flow Crossess (Conservation Flow Crosses) Conservation Flow Crossess (Conservation Flow Crosses) Conservation Flow Crossess (Conservation Flow Crosses) RIPARIAN WIDTH L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 6.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10 m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Conservation Tillage Immature Forest, Shrub or Old Conservation Tillage Narrow <5m Narrow <5m Residential, Park, New Field Conservation None Fenced Pasture Mining or Construction COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN WIDTH FLOODPLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row Crown Fenced Pasture FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY Note: Ripart and Conservation Tillage Wide >10 m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Mature Forest, Shrub or Old Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row Crown None Fenced Pasture Mining or Construction COMMENTS Moist Channel, isolated pools, no flow (Intermittent) COMMENTS Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) COMMENTS Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (<=3' 3") [5 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Wide >10 m Mature Forest, Shrub or Old Field Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row Crow Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS None (Ephemeral) COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30

	ION (This Information Must Al	Iso be Completed):			
QHEI PERFORMED? -	Yes ✓ No QHEI Score	(If Yes, Att	ach Completed Q	HEI Form)	
DOWNSTREAM DESIGN WWH Name: CWH Name: CHaylick Creek	ATED USE(S)		Distance from	Evaluated Stream Evaluated Stream Evaluated Stream	0.00
MAPPING: ATTACH COP	ES OF MAPS, INCLUDING THE	ENTIRE WATERSHE	D AREA. CLEARI	LY MARK THE SITE LOCA	ATION
USGS Quadrangle Name:	I	NRCS Soil Map I	Page:N	RCS Soil Map Stream Or	der
County: Licking	Tow	wnship / City:Newa	rk		
MISCELLANEOUS	1 –				
Base Flow Conditions? (Y/N): Y	Date of last precipitation:	06/05/20	Quantity:	0.73	
Photograph Information:					
Elevated Turbidity? (Y/N):	Canopy (% open): 90	0%			
Were samples collected for water ch	nemistry? (Y/N): N (Note I	lab sample no. or id.	and attach results	s) Lab Number:	
Field Measures: Temp (°C)	Dissolved Oxygen (ma/l)	pH (S.U.)	Conduct	ivity (µmhos/cm)	
Is the sampling reach representative	of the stream (Y/N)	ot, please explain:			
Additional comments/description of	pollution impacts:				
BANK Stability	LOW	M	ODERATE 🗸	HIGH	
BIOTIC EVALUATION Performed? (Y/N): N (If Ye					
	es, Record all observations. Vouclember. Include appropriate field dather? (Y/N) Salamanders N Voucher? (Y/N) Aqu		rimary Headwater H	Habitat Assessment Manua (/N)	al)
Fish Observed? (Y/N) Vouc Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology:	cher? (Y/N) N Salamanders N Voucher? (Y/N) N Aqu	data sheets from the Prosecution of the Prosecution	Voucher? (Yates Observed? (Y	Habitat Assessment Manua (/N) N Voucher? (Y/N) N	al) N
Fish Observed? (Y/N) N Vouce Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND N.	cher? (Y/N) N Salamanders N Voucher? (Y/N) N Aqu	data sheets from the Pi s Observed? (Y/N) uatic Macroinvertebra	Voucher? (Yates Observed? (Yates ACH (This	Habitat Assessment Manual (/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher?	al) N d):
Fish Observed? (Y/N) N Vouce Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND N.	cher? (Y/N) N Salamanders N Voucher? (Y/N) N Aqu	data sheets from the Pi s Observed? (Y/N) uatic Macroinvertebra	Voucher? (Yates Observed? (Yates ACH (This	Habitat Assessment Manual (/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher?	d):
Fish Observed? (Y/N) N Vouce Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND N.	cher? (Y/N) N Salamanders N Voucher? (Y/N) N Aqu	data sheets from the Pi s Observed? (Y/N) uatic Macroinvertebra	Voucher? (Yates Observed? (Yates ACH (This	Habitat Assessment Manual (/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher?	al) N d):
Fish Observed? (Y/N) N Vouce Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND N.	cher? (Y/N) N Salamanders N Voucher? (Y/N) N Aqu	data sheets from the Pi s Observed? (Y/N) uatic Macroinvertebra	Voucher? (Yates Observed? (Yates ACH (This	Habitat Assessment Manual (/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher?	d):
Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND N. Include important landmarks	cher? (Y/N) N Salamanders N Voucher? (Y/N) N Aqu	data sheets from the Pi s Observed? (Y/N) uatic Macroinvertebra	Voucher? (Yates Observed? (Yates Observed? (Yates Observed? (Yates Observed))	Habitat Assessment Manual (/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher?	d):
Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND N. Include important landmarks	cher? (Y/N) N Salamanders N Voucher? (Y/N) N Aqu	on OF STREAM I	Voucher? (Yates Observed? (Yates Observed? (Yates Observed? (Yates Observed))	Habitat Assessment Manual (/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher?	d):



PHOTOGRAPHIC RECORD STREAMS

Site Location:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.60616110,
60618779, 60616126

Stream 091

Client Name:

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 091

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 091

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
hh-aeh-20200609-09 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	.40
LENGTH OF STREAM REACH (ft) 200 LAT. 39.98626 LONG82.31619 RIVER CODE RIVER MILE	0.01
DATE 06/09/20 SCORER AEH COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Culverted	OVERY
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	HHEI Metric
□ BLDR SLABS [16 pts] □ SILT [3 pt] 15%	Points
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts] 0%	Substrate
BEDROCK [16 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts] 40% MUCK [0 pts] 0%	24
SAND (<2 mm) [6 pts]	
Total of Percentages of 45.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts]	0
COMMENTS MAXIMUM POOL DEPTH (Inches): 0.00	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	1
o. Driver old modeled to the average of a 4 medical mental (one of the box).	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 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]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
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> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Another Endowed And Predominant per Bank) L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10 m Narrow <5m Narrow <5m Residential, Park, New Field Fenced Pasture FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10m Narrow <5 m Residential, Park, New Field Narrow <5 m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BANKFULL WIDTH (Feet): AVERAGE BANKFULL WIDTH (Feet): AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BAN	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Narrow <5m Narrow <5m None Residential, Park, New Field None COMMENTS 1.0 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] 3.00 3.00 4' 8") [15 pts] 5 pts] 5 pts] 6 pts 6 pts 7 pts 7 pts 8 pts 9 pts	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Mide > 10m Mature Forest, Wetland Wide > 10m Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY PLOODPLAIN QUALITY PLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Mature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5m Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row Cr None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS 10 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (==3' 3") [5 pts] Subsurface flow with isolated pools (Interstitial) Open Pasture, Row Cr Mining or Construction Dry channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide > 10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Moderate 5-10 m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 1.0 2.0 3.0 AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BANKFULL WIDTH (F	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY PLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream Nature Forest, Wetland Wide >10 m	Width Max=30

ADDITIONAL STREAM IN	IFORMATION (This Information	Must Also	be Completed):			
QHEI PERFORM	MED? - Yes ✓ No QHEIS	Score	(If Yes, Atta	ach Completed QI	HEI Form)	
DOWNSTREAM	1 DESIGNATED USE(S)					
WWH Name:				-	Evaluated Stream	
CWH Name: Claylick	Creek				Evaluated Stream Evaluated Stream	0.01
				_		
MAPPING: ATT	ACH COPIES OF MAPS, INCLUD	ING THE <u>EN</u>	TIRE WATERSHE	D AREA. CLEARL	Y MARK THE SITE L	OCATION
USGS Quadrangle Name:	Glefflord		NRCS Soil Map I		RCS Soil Map Stream	Order
County: Licking		Towns	hip / City:Newai	rk		
MISCELLANEO	ous					
Base Flow Conditions? (Y/	/N): Date of last precipi	tation:	06/05/20	Quantity:	0.73	
Photograph Information:						
Elevated Turbidity? (Y/N):	N Canopy (% open): 60%	o o			
	or water chemistry? (Y/N):	(Note lab	sample no. or id.	and attach results	s) Lab Number:	
Field Measures: Temp	(°C) Dissolved Oxygen	(ma/l)	pH (S.U.)	Conduct	ivity (µmhos/cm)	
Is the sampling reach repr	resentative of the stream (Y/N)	If not.	please explain:			
Additional comments/desc	cription of pollution impacts:	LOW		IODERATE 🚺	HIGH	,
2::::::				V		
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed. Comments Regarding Biol	(If Yes, Record all observation ID number. Include appropriation Voucher? (Y/N) N Salated? (Y/N) N Voucher? (Y/N)	ate field data manders O		rimary Headwater F	labitat Assessment Ma	anual)
DRAWING	AND NARRATIVE DESC	RIPTION	OF STREAM I	REACH (This	must be comple	ted):
Include important la	andmarks and other features of	interest for	site evaluation a	nd a narrative des	scription of the strea	ım's location
					_	
					_	
				5	stre	am
•				/ \ \		<u> </u>
FLOW -						
	shrubs					
	omaso				\	
				gravel	path	`
				la ra ra	' '	
				gravor	<u>'</u>	
ag field	d			gravor		



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No. 60616110,

60618779, 60616126

Stream 092

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 092

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 092

Date:

June 9, 2020

Description:

Ephemeral

Modified Ephemeral Stream





Primary Headwater Habitat Evaluation Form

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

39	

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
hh-aeh-20200609-10 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	.07
LENGTH OF STREAM REACH (ft) 200 LAT. 39.98998 LONG82.31740 RIVER CODE RIVER MILE	.06
DATE 06/09/20 SCORER AEH COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECO	OVERY
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 BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 DVA SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3	HHEI Metric Points Substrate Max = 40 9
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
Aximum 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] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] COMMENTS MAXIMUM POOL DEPTH (Inches): 7.00	Pool Depth Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Another Left (L) and Right (R) as looking downstream	op -
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	ı L
None 1.0 2.0 3.0 >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/1	00 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:	Distance from Evaluated Stream
CWH Name: Claylick Creek	Distance from Evaluated Stream
EWH Name: Oldyner Oleer	Distance from Evaluated Stream0.06
	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Towns	hip / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	06/05/20 Quantity: 0.73
Photograph Information:	
N G00	
Canopy (% open):	<u>. </u>
Were samples collected for water chemistry? (Y/N): (Note lab	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE / HIGH
ID number. Include appropriate field data Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Of	collections optional. NOTE: all voucher samples must be labeled with the site sheets from the Primary Headwater Habitat Assessment Manual) poserved? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
	site evaluation and a narrative description of the stream's location
l	/
herb	
shrubs	
	road
FLOW (
junk	
shrubs	
	/
ag field	
	orm Page - 2

Save as pdf

Reset Form



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 093

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 093

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 093

Date:

June 9, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 72.5

Stream & Location: s-jbl-20200604-10 (Claylick Creek)	RM:	8.1	Date:6	/ 4	/ 20
AEP Crooksville-North Newark Scorers Full Name & Affiliation:	AEH, J	IBL AEC	OM		
River Code: STORET #: Lat./Long.: 39.9928		2.3184		Office	verified location
11 SUBSTRATE Check ONLY Two substrate TYPE BOXES:	SIL	.T	ge) QUALITHEAVY [-2, MODERATH NORMAL [-2, TENSIVE MODERATH NORMAL [-2, TENSIVE MODERATH NORMAL [-3, TENSIVE MODERATH	ΓΥ Ε [-1] 0]	Substrate 17 Maximum 20
2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common quality; 2-Moderate amounts, but not of highest quality or in small amounts quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional 1 UNDERCUT BANKS [1] 1 POOLS > 70cm [2] 1 OXBOWS, BACKWATE 2 OVERHANGING VEGETATION [1] 1 ROOTWADS [1] 0 AQUATIC MACROPHYTO BOULDERS [1] 1 LOGS OR WOODY DEED COMMENTS [1] 1 COMMENTS [1] 1 DOWN WATER [1] 1 DOWN WOODY DEED COMMENTS [1] 1	of highe large pools. RS [1] FES [1]	Check EXT MOI	AMOU ONE (Or ENSIVE > DERATE 2 ARSE 5-<2 ARLY ABS	2 & ave 75% [1 [,] 5-75% 5% [3]	1] [7] % [1]
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]				Channe aximum 20	13
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (One River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY RIPARIAN WIDTH FLOOD PLAIN RIPARIAN WIDTH FLOOD PLAIN RIPARIAN WIDTH FLOOD PLAIN	[1] India	CONSE URBAN MINING	ERVATION N OR INDU G / CONST	JSTRIA RUCTIO d use(s) Riparian aximum	L [0] DN [0]
5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH Check ONE (ONLY!) > 1m [6] DOOL WIDTH > RIFFLE WIDTH [2] O.7-<1m [4] O.4-<0.7m [2] O.2-<0.4m [1] O.2-<0.4m [1] O.2-<0.4m [1] Comments Indicate for functional riffles; Best areas must be large enough to support a of riffle-obligate species: Check ONE (Or 2 & average) Check ALL that apply Check ALL that apply TORRENTIAL [-1] SLOW [1] VERY FAST [1] INTERNITI MODERATE [1] Indicate for reach - pools and rift Check ONE (Or 2 & average).	rent [-2] fles. a popu	Pi Sec (circle	M □NO RI	Contaction between the	tial ct act ack 8
RIFFLE DEPTH BEST AREAS > 10cm [2] BEST AREAS 5-10cm [1] BEST AREAS 5-5cm [metric=0] Comments RUN DEPTH RIFFLE / RUN SUBSTRATE RIFF MAXIMUM > 50cm [2] STABLE (e.g., Cobble, Boulder) [2] MAXIMUM < 50cm [1] UNSTABLE (e.g., Fine Gravel, Sand) [0]		NONE [2] LOW [1] MODER	Ī	Riffle	(5)
6] GRADIENT (25.80 ft/mi)	%GLI %RIFF	\succ		Gradien aximum	



Site Location:

Client Name:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.60616110,
60618779, 60616126

Stream 094

Date:

June 4, 2020

Description:

Perennial

Warmwater Habitat – Excellent

Claylick Creek

Facing Upstream



Stream 094

Date:

June 4, 2020

Description:

Perennial

Warmwater Habitat – Excellent

Claylick Creek





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 094

Date:

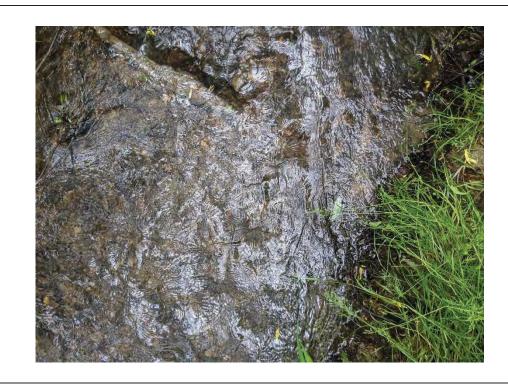
June 4, 2020

Description:

Perennial

Warmwater Habitat – Excellent

Claylick Creek





Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
s-jbl-20200605-02 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.40
LENGTH OF STREAM REACH (ft) 200 LAT. 39.99445 LONG82.31913 RIVER CODE RIVER MILE	0.07
DATE 06/05/20 SCORER AEH, JBL COMMENTS intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING COW pasture	COVERY
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 BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] O% ARTIFICIAL [3 pts] O% O% ARTIFICIAL [3 pts] O% O% O% O% O% O% O% O% O% O	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 Substrate Percentage 100% TOTAL NUMBER OF SUBSTRATE TYPES: 4	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] > 22.5 - 30 cm [30 pts] > 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	Pool Depth Max = 30
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS MAXIMUM POOL DEPTH (Inches): 7.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 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]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30 20
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (<=3' 3") [5 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field Narrow <5m None Fenced Pasture FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts]	Width Max=30 20
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 6.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream and RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Dimmature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Drban or Industrial Field Open Pasture, Row Completed Narrow <5m Residential, Park, New Field Open Pasture, Row Completed Residential, Park, New Field Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	Width Max=30 20

•	tion Must Also be Completed):
QHEI PERFORMED? - Yes No QHE	El Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: Claylick Creek	Distance from Evaluated Stream Distance from Evaluated Stream 0.07
	UDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
ISGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking	Township / City: Franklin
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last pre-	• • • • • • • • • • • • • • • • • • • •
hotograph Information: 94118 upstream, 94119 dow	vnstream, 94120 substrates
Elevated Turbidity? (Y/N): Canopy (%_or	400/
Vere samples collected for water chemistry? (Y/N):	(Note lab sample no. or id. and attach results) Lab Number:
	gen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
	Υ
s the sampling reach representative of the stream (Y/N)	I) If not, please explain:
dditional comments/description of pollution impacts:_	
BANK Stability	LOW MODERATE HIGH
N N N N N N N N N N N N N N N N N N N	
ish Observed? (Y/N): (If Yes, Record all observation of the control of the	rations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit opriate field data sheets from the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
(If Yes, Record all observations of the Comments Regarding Biology: (If Yes, Record all observations (If Yes, Record all observatio	opriate field data sheets from the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
ish Observed? (Y/N): (If Yes, Record all observation of the comments Regarding Biology: (If Yes, Record all observations of the comments Regarding Biology: (If Yes, Record all observations of the comment of the	opriate field data sheets from the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
ish Observed? (Y/N): (If Yes, Record all observed ID number. Include approximately approximat	opriate field data sheets from the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
ish Observed? (Y/N): N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Observed	Salamanders Observed? (Y/N) N Voucher? (
ish Observed? (Y/N) N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Observed DRAWING AND NARRATIVE DES Include important landmarks and other features ge/access	Scription of Stream Reach (This must be completed):
ish Observed? (Y/N): N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N)	Scription of the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
ish Observed? (Y/N): N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N)	Salamanders Observed? (Y/N) N Voucher? (
ish Observed? (Y/N) N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Observed DRAWING AND NARRATIVE DES Include important landmarks and other features ge/access	Salamanders Observed? (Y/N) N Voucher? (
ish Observed? (Y/N) N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N)	Scription of the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
ish Observed? (Y/N) N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N)	Scription of the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
Fish Observed? (Y/N) N Voucher? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND NARRATIVE DES	Scription of the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
ish Observed? (Y/N) N Voucher? (Y/N) N Strogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N)	Scription of the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N)
ish Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DES Include important landmarks and other features ge/access	Scription of Stream Reach (This must be completed): s of interest for site evaluation and a narrative description of the stream's location cow pasture



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 095

Date:

June 5, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 095

Date:

June 5, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 095

Date:

June 5, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form

SITE NAME / OCATION AFP-Crooksvill	le-North Newark 138 kV Transmission Line Rebuild Project	
s-jbl-20200605-01 SITE NUMBER		0.09
LENGTH OF STREAM REACH (ft) 200	LAT. 39.99998 LONG82.32139 RIVER CODE RIVER MILE C	
DATE 06/05/20 SCORER AEH, J		
	orm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
·		
STREAM CHANNEL NONE / N MODIFICATIONS:	NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	OVERY
	every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
, ,	ificant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE Metri
TYPE BLDR SLABS [16 pts]	PERCENT TYPE PERCENT 0% 7 SILT [3 pt] 70%	Point
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 25%	
BEDROCK [16 pt]	FINE DETRITUS [3 pts]	Substra Max =
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 0%	
GRAVEL (2-64 mm) [9 pts]	5% MUCK [0 pts] 0% 0% ARTIFICIAL [3 pts] 0%	9
SAND (<2 mm) [6 pts]	7 TOTAL [O PLO]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	Substrate Percentage Check 100% (B)	A+B
SCORE OF TWO MOST PREDOMINATE SUB	BSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
	e maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool De
> 30 centimeters [20 pts]	coad culverts or storm water pipes) (Check ONLY one box): > 5 cm - 10 cm [15 pts]	Max =
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	l
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS	MAXIMUM POOL DEPTH (Inches): 3.00	
BANK FULL WIDTH (Measured as t	the average of 3-4 measurements) (Check ONLY one box):	Bankfu
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		Max=3
	AVEDAGE BANKELII I MIDTII (F. 1) 2.00	_
COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 2.00	5
	This information must also be completed	
RIPARIAN ZONE AND FLOOI		
RIPARIAN WIDTH	FLOODPLAIN QUALITY	
L R (Per Bank) Wide >10m	L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial	
iwoderate 5-10111	—— Field	on
Narrow <5m	Residential, Park, New Field Open Pasture, Row Cr	υþ
None	Fenced Pasture Mining or Construction	
COMMENTS		L
,	Evaluation) (Check ONLY one box):	
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated p COMMENTS	pools (Interstitial)]
	04 (000 f)	-
SINUOSITY (Number of bends None	ls per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): ✓ 1.0	
0.5	1.5	
STDEAM CDADIENT ESTIMATE		
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/1	00 ft)

ADDITIONAL STREAM IN	FORMATION (This Information	n Must Also b	e Completed):			
QHEI PERFORM	MED? - Yes 🗸 No QHEIS	Score	(If Yes, Attac	ch Completed Q	HEI Form)	
DOWNSTREAM	DESIGNATED USE(S)					
WWH Name:				_	Evaluated Stream	
CWH Name: _ Claylick	Creek				Evaluated Stream	0.40
EWH Name. Outlier	Orock			Distance from	Evaluated Stream	0.40
MAPPING: ATT	ACH COPIES OF MAPS, INCLUD	ING THE ENT	IRE WATERSHED	AREA. CLEARI	Y MARK THE SITE L	OCATION
JSGS Quadrangle Name:	Glenford	١	NRCS Soil Map Pa	age:N	RCS Soil Map Stream	Order
County: Licking		Townshi	p / City:Franklir	1		
MISCELLANEO	us					
Base Flow Conditions? (Y/	(N): Y Date of last precipi	itation:	06/04/20	Quantity:	0.00	
Photograph Information:	991 - 994					
Elevated Turbidity? (Y/N):	N	90%				
	N		emplone orid =	nd attach results	a) Lab Numbari	
·	or water chemistry? (Y/N):		ample no. or id. a			
Field Measures: Temp	(°C) Dissolved Oxygen		pH (S.U.)	Conduct	ivity (µmhos/cm)	
s the sampling reach repre	esentative of the stream (Y/N)		ease explain:			
Additional comments/desc	cription of pollution impacts:					
BANK Stability		LOW	МО	DERATE 🗸	HIGH	ı
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biol	(If Yes, Record all observation ID number. Include appropriation Voucher? (Y/N) N Salated? (Y/N) N Voucher? (Y/N)	ate field data s amanders Obs		nary Headwater F	Habitat Assessment Ma	anual)
none observed	ogy					
DRAWING	AND NARRATIVE DESC	RIPTION O	F STREAM RI	EACH (This	must be comple	ted):
	andmarks and other features of					
	1					_
	\					
			-			
FLOW -		_				
_				_		
ods		-	wetland			
				=		



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 096

Date:

June 5, 2020

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 096

Date:

June 5, 2020

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 096

Date:

June 5, 2020

Description:

Ephemeral

Ephemeral Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
s-jbl-20200604-07 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.05
LENGTH OF STREAM REACH (ft) 200 LAT. 40.00276 LONG82.32298 RIVER CODE RIVER MILE	
DATE 06/04/20 SCORER AEH, JBL COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to This	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RIMODIFICATIONS: Culverted	ECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(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	Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 55%	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts]	Max = 40
GRAVEL (2-64 mm) [9 pts] 9% MUCK [0 pts] 0% ARTIFICIAL [3 pts]	15
Critic (*2 min) [o plo]	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
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]	Max = 30
> 22.5 - 30 cm [30 pts]	
COMMENTS MAXIMUM POOL DEPTH (Inches): 0.00	
	J
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
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] \[\begin{array}{c} \text{1.0 m (<=3' 3") [5 pts]} \end{array}	Bankfull Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 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]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream Average Bankfull width (Feet): 2.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≥ 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≥ 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≥ 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittee	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Narrow <5m None Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittee	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Residential, Park, New Field None COMMENTS Fenced Pasture Mining or Construction flow (Intermitted Dry channel, isolated pools, no flow (Intermitted Dry channel, no water (Ephemeral))	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Viden Stream Flowing None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Mature Forest, Shrub or Old Moderate 5-10m None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	Width Max=30 5 Crop on ant)

ADDITIONAL STREAM INFORMATION (This Information Must Als	so be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: Claylick Creek	Distance from Evaluated Stream Distance from Evaluated Stream 0.54
	
Hanover	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Town	nship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	06/03/20 Quantity: 0.75
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 40	%
N	ab sample no. or id. and attach results) Lab Number:
Υ /	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) If no	t, please explain:
Additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE HIGH
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders of Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aqua Comments Regarding Biology:	ner collections optional. NOTE: all voucher samples must be labeled with the site ta sheets from the Primary Headwater Habitat Assessment Manual) Observed? (Y/N) N Voucher? (Y
none observed	
DRAWING AND NARRATIVE DESCRIPTION	N OF STREAM REACH (This must be completed):
	N OF STREAM REACH (This <u>must</u> be completed): or site evaluation and a narrative description of the stream's location
	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad herb veg	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad herb veg	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad herb veg gravel drive	or site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest for gravel pad herb veg	or site evaluation and a narrative description of the stream's location



JIKL

Site Location:

Client Name:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.60616110,
60618779, 60616126

Stream 097

Date:

June 4, 2020

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 097

Date:

June 4, 2020

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 097

Date:

June 4, 2020

Description:

Ephemeral

Ephemeral Stream





Chief P Primary Headwater Habitat Evaluation Form

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

Muskingum	
S-jbl-20200604-09 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	.38
LENGTH OF STREAM REACH (ft) LAT. 40.00856 LONG82.32986 RIVER CODE RIVER MILE 0	.16
DATE 06/04/20 SCORER AEH, JBL COMMENTS intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
(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	Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 25%	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 30% CLAY or HARDPAN [0 pt]	Max = 40
✓ GRAVEL (2-64 mm) [9 pts] 40% MUCK [0 pts] 0% SAND (<2 mm) [6 pts]	25
Total of Percentages of 30 00% (A) Substrate Percentage 400% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 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	Pool Depth
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]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	05
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS MAXIMUM POOL DEPTH (Inches): 7.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 4.00	
	15
	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m ✓ Mature Forest, Wetland Conservation Tillage	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and River Left (L	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m ✓ Mature Forest, Wetland Conservation Tillage	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m ✓ Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row Cro None Fenced Pasture Mining or Construction	
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ELOODPLAIN QUALITY LR (Per Bank) Wide >10m Wide >10m Woderate 5-10m Woderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) This information must also be completed RIPARIAN WIDTH NOTE: River Left (L) and Right (R) as looking downstream River L	op -
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ELOODPLAIN QUALITY LR (Per Bank) Wide >10m Wide >10m Woderate 5-10m Woderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) This information must also be completed RIPARIAN WIDTH NOTE: River Left (L) and Right (R) as looking downstream River L	op -
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m ✓ Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cro None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing 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):	op -
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\times \text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2} \text{RIPARIAN WIDTH} FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	op -

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Atta	ach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)		,
WWH Name:	Distance from Evaluated Stream	-
CWH Name: Claylick Creek	Distance from Evaluated Stream Distance from Evaluated Stream 0.86	
	_ Distance from Evaluated engann _	ı
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEI Hanover		
USGS Quadrangle Name: NRCS Soil Map F		
County: Licking Township / City: Frankl	iin	_
MISCELLANEOUS		
Base Flow Conditions? (Y/N): Date of last precipitation:06/03/20	Quantity:0.75	
Photograph Information:		
Elevated Turbidity? (Y/N): N Canopy (% open): 60%		
N N	and attach results) Lab Number:	
		<u> </u>
Field Measures: Temp (°C) Dissolved Oxygen (ma/l) PH (S.U.)		
Is the sampling reach representative of the stream (Y/N) If not, please explain:		=
Additional comments/description of pollution impacts:		
BANK Stability LOW M	IODERATE HIGH	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Principle of the P	rimary Headwater Habitat Assessment Manual) Voucher? (Y/N)	site
		_
		_
		_
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	REACH (This <u>must</u> be completed):	- -
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	· —	-
	· —	_
Include important landmarks and other features of interest for site evaluation as	· —	wc
Include important landmarks and other features of interest for site evaluation as	· —	_
Include important landmarks and other features of interest for site evaluation at wetland	· —	wc
Include important landmarks and other features of interest for site evaluation as	· —	wc
Include important landmarks and other features of interest for site evaluation and wetland FLOW	· —	wc
Include important landmarks and other features of interest for site evaluation at wetland	· —	wc
Include important landmarks and other features of interest for site evaluation and wetland FLOW	· —	wc
Include important landmarks and other features of interest for site evaluation and wetland FLOW	· —	wc
Include important landmarks and other features of interest for site evaluation and wetland FLOW	· —	wc



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No. 60616110,

60618779, 60616126

Stream 098

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 098

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 098

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





Chief P Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project					
S-jbl-20200604-08 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	.17				
LENGTH OF STREAM REACH (ft) 200 LAT. 40.01083 LONG82.33227 RIVER CODE RIVER MILE	.16				
DATE 06/04/20 SCORER AEH,JBL COMMENTS intermittent, NHD mapped					
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions				
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY				
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI				
(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	Metric				
BLDR SLABS [16 pts]	Points				
BEDROCK [16 pt]	Substrate Max = 40				
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0% GRAVEL (2-64 mm) [9 pts] 35% MUCK [0 pts] 0%	Max = 40				
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0%	17				
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B)	A + B				
Bldr Slabs, Boulder, Cobble, Bedrock					
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth				
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]	Max = 30				
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]					
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25				
COMMENTS MAXIMUM POOL DEPTH (Inches): 5.00					
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull				
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]					
$> 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7" - 13') [25 \text{ pts}]$ $\leq 1.0 \text{ m} (<=3' 3") [5 \text{ pts}]$	Width Max=30				
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]					
2 1.0 m (4-5 5) [5 pts]					
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00	Max=30				
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed	Max=30				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (Feet): 2.00 This information pust also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY FLOODPLAIN QUALITY	Max=30				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (Feet): 2.00 This information function with the completed with the complete with the comp	Max=30				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m AVERAGE BANKFULL WIDTH (Feet): 2.00 L R (Most Predominant per Bank) L R (Most Predominant per Bank) Urban or Industrial	Max=30				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland L R (Conservation Tillage	Max=30				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m AVERAGE BANKFULL WIDTH (Feet): 2.00 L R (Most Predominant per Bank) L R (Most Predominant per Bank) Immature Forest, Wetland Woderate 5-10m Conservation Tillage Immature Forest, Shrub or Old Field Conservation Flow Creative Row C	Max=30				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m AVERAGE BANKFULL WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Mature Forest, Wetland Conservation Tillage Urban or Industrial Open Pasture, Row Cr	Max=30				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00 AVERAGE BANKFULL 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 **LOODPLAIN QUALITY **LOODPLAIN QUALITY	Max=30 5				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing AVERAGE BANKFULL WIDTH (Feet): 2.00 AVERAGE BANKFULL W	Max=30 5				
AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Wide >10 m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature Forest, Shrub or Old Immature Forest, Shrub or Old Immature Forest, None Residential, Park, New Field Open Pasture, Row Cramber Flow Regime (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Max=30 5				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row Cr None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00 ANOTE: River Left (L) and Right (R) as looking downstream A reliable to the part of the p	Max=30 5				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Moderate 5-10m Narrow <5m None Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) Sinuosity (Number of bends per 61 m (200 ft) of channel) Sinuosity (Number of bends per 61 m (200 ft) of channel) AVERAGE BANKFULL WIDTH (Feet): 2.00 AVERAGE BANKFULL WIDTH (Feet): AVERAGE BANKFULL WIDTH (Feet): AVERAGE BANKFULL WIDTH (Feet): AVERAGE BANKFULL WIDTH (Feet): AVERAG	Max=30 5				

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	<u>):</u>
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name:	Distance from Evaluated Stream
CWH Name: Claylick Creek	Distance from Evaluated Stream Distance from Evaluated Stream 0.86
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSI	
USGS Quadrangle Name: Hanover NRCS Soil Ma	
	nklin
, , , , , , , , , , , , , , , , , , , ,	
MISCELLANEOUS Base Flow Conditions? (Y/N): n Date of last precipitation: 06/03/20	Quantity: 0.75
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 90%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or	id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) PH (S.U.	Conductivity (µmhos/cm)
Additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE HIGH
ID number. Include appropriate field data sheets from the Voucher? (Y/N) N Salamanders Observed? (Y/N)	
none observed	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	M REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation	
pasture	
fence	
FLOW	
[b]	
herb veg	bridge/access to farm



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 099

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 099

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 099

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Pro	oject
s-jbl-20200604-06 SITE NUMBER RIVER BASIN Muskingum DRAINAG	GE AREA (mi²) 0.07
LENGTH OF STREAM REACH (ft) 200 LAT. 40.01589 LONG82.33836 RIVER CODE	RIVER MILE 0.72
DATE 06/04/20 SCORER AEH, JBL COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Stre	eams" for Instructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECOVER	ENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxed.	es A & B. HHEI
BLDR SLABS [16 pts] 0% SILT [3 pt]	50% Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]	10% 0% Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt]	0% Max = 40
GRAVEL (2-64 mm) [9 pts]	0% 16
SAND (<2 mm) [6 pts]	0 /8
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check 100%	(B) A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE T	TYPES: 4
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	t the time of Pool Dept Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	s] 15
COMMENTS MAXIMUM POOL DEPTH (nches); 3.00
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]	Bankfull Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] 10 m (<=3' 3") [5 pts]	Bankfull Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking.	Bankfull Width Max=30 (Feet): 2.00
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking. RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R	Bankfull Width Max=30 (Feet): 2.00 5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking. RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) RIPARIAN WIDTH RIPARIAN	Bankfull Width Max=30 (Feet): 2.00 5 downstream & ervation Tillage
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking. RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank)	Bankfull Width Max=30 (Feet): 2.00 5 downstream & ervation Tillage on or Industrial
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10 m Narrow <5 m Residential, Park, New Field Open	Bankfull Width Max=30 (Feet): 2.00 5 downstream☆ ervation Tillage n or Industrial n Pasture, Row Crop
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10 m Narrow <5 m Residential, Park, New Field Open	Bankfull Width Max=30 (Feet): 2.00 5 downstream & ervation Tillage on or Industrial
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank)	Bankfull Width Max=30 (Feet): 2.00 5 downstream☆ ervation Tillage n or Industrial n Pasture, Row Crop
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking RIPARIAN WIDTH L R (Per Bank) Wide >10m	Bankfull Width Max=30 (Feet): 2.00 5 downstream A ervation Tillage n or Industrial n Pasture, Row Crop g or Construction of low (Intermittent)
BANK FULL WIDTH (Measured as the average of 3-4 measurements) > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking. RIPARIAN WIDTH FLOODPLAIN QUALITY ↓ R (Per Bank) ↓ R (Per Bank) ↓ Wide >10 m Mature Forest, Wetland ↓ Wide >10 m Moderate 5-10 m None ↓ Residential, Park, New Field ↓ None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Bankfull Width Max=30 (Feet): 2.00 5 downstream A ervation Tillage n or Industrial n Pasture, Row Crop g or Construction of low (Intermittent)
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Const	Bankfull Width Max=30 (Feet): 2.00 5 downstream 3 ervation Tillage n or Industrial n Pasture, Row Crop ng or Construction of flow (Intermittent) real)
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts]	Bankfull Width Max=30 (Feet): 2.00 5 downstream A ervation Tillage on or Industrial or Pasture, Row Croping or Construction of flow (Intermittent) and the state of the stat
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Riparia Residential, Park, New Field Department of the per Bank Residential, Park, New Field Department of the per Bank Residential, Park, New Field Department Residential, Park, New Field Depart	Bankfull Width Max=30 (Feet): 2.00 5 downstream A ervation Tillage on or Industrial or Pasture, Row Croping or Construction of flow (Intermittent) and the state of the stat
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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: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Claylick Creek Distance from Evaluated Stream 1.10
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Township / City: Franklin
MISCELLANEOUS
Base Flow Conditions? (Y/N): n Date of last precipitation: 06/03/20 Quantity: 0.75
Photograph Information:
Elevated Turbidity? (Y/N): N Canopy (% open): 0%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (ma/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BANK Stability LOW MODERATE 🗸 HIGH
BIOTIC EVALUATION
BIOTIC EVALUATION
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N
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Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 100

Date:

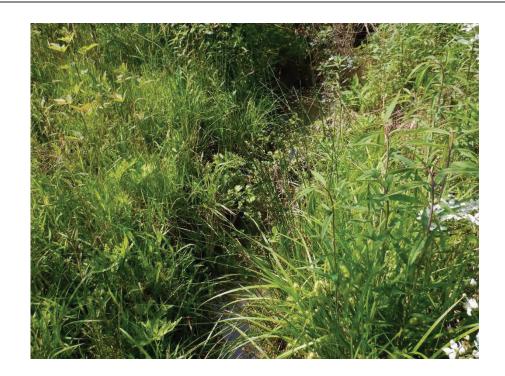
June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 100

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 100

Date:

June 4, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 67.0

Stream & Location: s-jbl-20200604-05 (Claylick Creek)	RM:	4.8	Date: 6 4	/ 20
AEP Crooksville-North Newark Scorers Full Name & Affiliation:	AEH, JI	BL AECO	M	
River Code: STORET #: Lat./ Long.: 40.0210		2.3442	Office	verified location
1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present BEST TYPES POOL RIFFLE OTHER TYPES POOL RIFFLE ORIGIN BLDR /SLABS [10]	SILT	□ HE □ MC □ NO □ FR	QUALITY AVY [-2] DDERATE [-1] DRMAL [0]	Substrate 14 Maximum 20
2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more commo quality; 2-Moderate amounts, but not of highest quality or in small amounts quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional 1 UNDERCUT BANKS [1] 1 POOLS > 70cm [2] 0 OXBOWS, BACKWATE 2 OVERHANGING VEGETATION [1] 1 ROOTWADS [1] 0 AQUATIC MACROPHY 1 LOGS OR WOODY DEED 1 ROOTMATS [1] 1 LOGS OR WOODY DEED 1 COmments	of highes , large pools. RS [1] TES [1]	Check C EXTE MODE	AMOUNT ONE (Or 2 & average) NSIVE >75% [11] ERATE 25-75% [3] SE 5-<25% [3] LY ABSENT <5' Cover Maximum 20	[7]
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] Comments			Channe l Maximum 20	13
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (OR River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY RIPARIAN PLAIN	TY R	CONSER URBAN (MINING /	VATION TILLAGOR INDUSTRIAL CONSTRUCTION (inant land use(s)	L [0] ON [0]
5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH Check ONE (ONLY!) Check ONE (ONLY!) Check ONE (Or 2 & average) Check ALL that apply POOL WIDTH > RIFFLE WIDTH [2] Check ALL that apply TORRENTIAL [-1] SLOW [1] Conductor of the control of t	ΓΙΑL [-1] ΓΕΝΤ [-2]	Prin Seco (circle on	eation Potent mary Contac endary Contac e and comment on b Pool / Current Maximum	et act ack)
Indicate for functional riffles; Best areas must be large enough to support a of riffle-obligate species: RIFFLE DEPTH RUN DEPTH RIFFLE / RUN SUBSTRATE RIFF BEST AREAS > 10cm [2] BEST AREAS 5-10cm [1] BEST AREAS < 5cm [metric=0] Comments	··· FLE / R □ □	UN EMB NONE [2] LOW [1] MODERAT	□NO RIFFLE [r	metric=0]
6] GRADIENT (25.80 ft/mi)	%GLII %RIFFI	\succ	Gradient	Q

ss directions, etc.				FJ MEASUREMENTS \(\bar{x}\) width 25 \(\bar{x}\) depth 12 \(\bar{x}\) bankfull width \(\bar{x}\) bankfull \(\bar{x}\) depth \(\bar{w}\) ratio \(\bar{x}\) bankfull \(\bar{x}\) depth \(\bar{x}\) floodprone \(x^2\) width \(\bar{x}\) entrench. ratio \(\bar{x}\) ces:) {	wooded
Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc				EJ ISSUES WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H20 / TILE / H20 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY			
n/Observed - Inferred, <i>Other.</i>				Circle some & COMMENT	ATV path		
s reach typical of steam?, Recreatior.	EWH, PCR			DJ MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED MODIFIED / DIPPED OUT / NA LEVEED / ONE SIDED RELOCATED / CUTOFFS MOVING-BEDLOAD-STABLE ARMOURED / SLUMPS ISLANDS / SCOURED IMPOUNDED / DESICCATED FLOOD CONTROL / DRAINAGE			ROW - Shrubby
Comment RE: Reach consistency/ ls	Claylick Creek existing ALU = E			BJAESTHETICS □ NUISANCE ALGAE □ INVASIVE MACROPHYTES □ EXCESS TURBIDITY □ DISCOLORATION □ FOAM / SCUM □ OIL SHEEN □ OIL SHEEN □ TRASH / LITTER □ NUISANCE ODOR □ SLUDGE DEPOSITS □ CSOS/SSOS/OUTFALLS CATION AREA DEPTH POOL: □ >100ft² □ >3ft			721/
AJ SAMPLED REACH Check ALL that apply	GE pass-2nd	X WADE	DISTANCE DRY	0.5 Km	Stream Drawing:		papoom



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 101

Date:

June 4, 2020

Description:

Perennial

Exceptional Warmwater Habitat

Claylick Creek

Facing Upstream



Stream 101

Date:

June 4, 2020

Description:

Perennial

Exceptional Warmwater Habitat

Claylick Creek





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 101

Date:

June 4, 2020

Description:

Perennial

Exceptional Warmwater Habitat

Claylick Creek





Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3)

SITE NAME/LOCATION AEP-Crooksville-	-North Newark 138 kV Transmission Line Rebuild Project	
		0.10
000		
LENGTH OF STREAM REACH (ft) 200	LAT. 40.02400 LONG82.34753 RIVER CODE RIVER MILE	7.11
DATE 06/04/20 SCORER AEH, JB	BL COMMENTS Intermittent	
NOTE: Complete All Items On This Form	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NAT MODIFICATIONS: ATV Trail	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	COVERY
	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	cant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI Metric
TYPE P! BLDR SLABS [16 pts]	PERCENT TYPE PERCENT 0% SILT [3 pt] 15%	Points
BOULDER (>256 mm) [16 pts]	5% LEAF PACK/WOODY DEBRIS [3 pts] 0%	
BEDROCK [16 pt]	10% FINE DETRITUS [3 pts] 0%	Substrat
COBBLE (65-256 mm) [12 pts]	30% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	30% MUCK [0 pts] 0%	27
SAND (<2 mm) [6 pts]	10% ARTIFICIAL [3 pts] 0%	27
Total of Percentages of	45.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock		
SCORE OF TWO MOST PREDOMINATE SUBS		
• `	maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road> 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY one box): > 5 cm - 10 cm [15 pts]	Max = 3
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS	MAXIMUM POOL PERTU	
COMMENTS	MAXIMUM POOL DEPTH (Inches): 0.00	
		l .
3 BANK FULL WIDTH (Measured as the	e average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]		
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed	Width Max=30
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> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank)	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland I D Mature Forest, Shrub or Old S 1.0 m (-3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Conservation Tillage Onen Pasture Row Cr	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland I D Mature Forest, Shrub or Old S 1.0 m (-3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Conservation Tillage Onen Pasture Row Cr	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m	This information must also be completed PLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts]	This information must also be completed PLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts]	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation of Subsurface flow with isolated poor	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts]	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends poor comments)	AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Wetland Dimmature Forest, Shrub or Old Field Residential, Park, New Field Deer 61 m (200 ft) of channel) (Check ONLY one box): Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	Width Max=30
A 1.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Evaluation Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends poor None)	This information must also be completed PLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣ FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage	Width Max=30
RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends poor comments)	AVERAGE BANKFULL WIDTH (Feet): 2.00 This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Wetland Dimmature Forest, Shrub or Old Field Residential, Park, New Field Deer 61 m (200 ft) of channel) (Check ONLY one box): Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	Width Max=30
A 1.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Evaluation Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends poor None)	This information must also be completed PLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣ FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Claylick Creek Distance from Evaluated Stream O.11 CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order County: Licking Township / City: Franklin
MISCELLANEOUS Base Flow Conditions? (Y/N): n Date of last precipitation: 06/03/20 Quantity: 0.75
Photograph Information: Elevated Turbidity? (Y/N): N Canopy (% open): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) PH (S.U.) Conductivity (µmhos/cm) If not, please explain:
Additional comments/description of pollution impacts: BANK Stability LOW MODERATE HIGH
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
shrubs woods



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 102

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 102

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 102

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
s-jbl-20200604-03 SITE NUMBER RIVER BASIN Muskinigum DRAINAGE AREA (mi²)	.78
LENGTH OF STREAM REACH (ft) 100 LAT. 40.03160 LONG82.35330 RIVER CODE RIVER MILE 0	
DATE 06/04/20 SCORER AEH JBL COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
·	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS: road, cow pasture	OVERY
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.	HHEI
TYPE PERCENT TYPE PERCENT □ □ □ BLDR SLABS [16 pts] 0% □ □ SILT [3 pt] 55%	Metric Points
BOULDER (>256 mm) [16 pts]	
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts]	Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0% GRAVEL (2-64 mm) [9 pts] 10% MUCK [0 pts] 0%	
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	10
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6	, , ,
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):	Pool Dept Max = 30
> 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]	25
COMMENTS MAXIMUM POOL DEPTH (Inches): 4.00	
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]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTSAVERAGE BANKFULL WIDTH (Feet): 2.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
LR (Per Bank) LR (Most Predominant per Bank) LR	
Wide >10m	
Moderate 5-10m Field Worderate 5-10m Infinitiative 1 of est, Shirtip of Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	p
None Fenced Pasture Mining or Construction	
COMMENTS	-
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS_	
	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	-
	-
□ None	_

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Equality Run	Distance from Evaluated Stream 0.03
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	-
USGS Quadrangle Name: Hanover NRCS Soil Map F	
County: Licking Township / City: Madis	
MISCELLANEOUS	
N 06/04/20	0.75
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information: N Q00/4	
Elevated Turbidity? (Y/N): Canopy (% open):	
Were samples collected for water chemistry? (Y/N): Y (Note lab sample no. or id.	
Field Measures: Temp (°C) 22.90 Dissolved Oxygen (mg/l) pH (S.U.)	8.10 Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
BANK Stability LOW M	IODERATE HIGH
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional	·
ID number. Include appropriate field data sheets from the Pr	rimary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N	Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebra	
Comments Regarding Biology:	N
none observed	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM I	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation a	nd a narrative description of the stream's location
FLOW	
wetland	boulder
cow pasture	
PHWH Form Page - 2	

Reset Form

Save as pdf

October 24, 2002 Revision



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 103

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 103

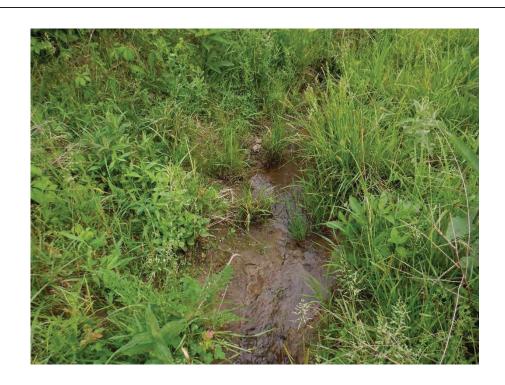
Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 103

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
s-jbl-20200604-02 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.78
LENGTH OF STREAM REACH (ft) 200 LAT. 40.03278 LONG. 82.35329 RIVER CODE RIVER MILE	3.7
DATE 06/04/20 SCORER AEH JBL COMMENTS Equality Run, Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(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	Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 15% CLAY or HARDPAN [0 pt] 0%	Max = 40
✓ ☐ GRAVEL (2-64 mm) [9 pts] 50% ☐ MUCK [0 pts] 0% ☐ SAND (<2 mm) [6 pts]	16
- SALE (2 mm) [e per]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	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	Pool Dept
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]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	0.5
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS MAXIMUM POOL DEPTH (Inches): 5.00	
COMMENTS MAXIMUM POOL DEPTH (Inches): 5.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
(116.155).	Bankfull Width Max=30
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]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \$\leq 1.0 m (<=3' 3") [5 pts]\$	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 4.00 This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 4.00	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): ### AVERAGE BANKFULL WIDTH (Feet):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): ### AVERAGE BANKFULL WIDTH (Feet):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 4.00 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) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Onen Pasture Row Onen Pas	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0 m (<=3' 3") [5 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): AVERAGE BANKFULL WIDTH (Feet): ### AVERAGE BANKFULL WIDTH (F	Width Max=30 15
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 4.00 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) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Onen Pasture Row Onen Pas	Width Max=30 15
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): ###	Width Max=30 15
BANK FULL WIDTH (Measured as the average of 3-4 measurements) > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream Notes (L) and Right (R) as looking downstream Notes (R) and Right (R) and Right (R) as looking downstream Notes (R) and Right (R) and Right (R) and Right (R	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) A.0 meters (> 13') [30 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY □ Wide >10 m Mature Forest, Wetland □ Conservation Tillage □ Moderate 5-10m □ Immature Forest, Shrub or Old □ Urban or Industrial □ Narrow <5m □ Residential, Park, New Field □ Open Pasture, Row Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) □ Dry channel, no water (Ephemeral)	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30 15 Trop nt)

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: Licking River Distance from Evaluated Stream 3.70
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: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Township / City: Madison
MISCELLANEOUS
Base Flow Conditions? (Y/N): N Date of last precipitation: 06/04/20 Quantity: 0.75
Photograph Information:
Elevated Turbidity? (Y/N): N Canopy (% open): 90%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) 18.90 Dissolved Oxygen (mg/l) pH (S.U.) 7.90 Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BANK Stability LOW MODERATE HIGH
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
none observed
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Sock was the
FLOW
trampled path
cow pasture trampled path
<u> </u>





Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 104

Date:

June 4, 2020

Description:

Intermittent

Warmwater Habitat

Equality Run Facing

Upstream



Stream 104

Date:

June 4, 2020

Description:

Intermittent

Warmwater Habitat

Equality Run





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 104

Date:

June 4, 2020

Description:

Intermittent

Warmwater Habitat

Equality Run





Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project RIVER BASIN Muskingum s-ibl-20200604-01 SITE NUMBER DRAINAGE AREA (mi²) 0.57 200 LAT. 40.03437 LONG. -82.35361 RIVER CODE LENGTH OF STREAM REACH (ft) RIVER MILE DATE 06/04/20 COMMENTS Intermittent SCORER AEH JBL NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** road, cow pasture SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 30% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% **Substrate** 0% 0% BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 400% 15% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 50% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 16 0% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (A) (B) 15.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock 12 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **TOTAL NUMBER OF SUBSTRATE TYPES:** Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 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] 25 7.00 COMMENTS MAXIMUM POOL DEPTH (Inches): BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS **AVERAGE BANKFULL WIDTH** 5.00 20 (Feet): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** (Dor Donk) /Mast Draden

	Wide >10m Moderate 5-10m		Mature Forest, Wet Immature Forest, S	land		Conservation Tillage Urban or Industrial
/ /	Narrow <5m		Residential, Park, N	lew Field		Open Pasture, Row Crop
	None COMMENTS	7 7	Fenced Pasture			Mining or Construction
7	FLOW REGIME (At Time of Eval. Stream Flowing Subsurface flow with isolated pool COMMENTS_	, ,				ols, no flow (Intermittent) hemeral)
\blacksquare	SINUOSITY (Number of bends por None 0.5	er 61 m (20 1.0 1.5	0 ft) of channel) (Ch	neck ONLY one box 2.0 2.5	x):	3.0 >3
STRE Flat (0.5 ft/	EAM GRADIENT ESTIMATE (100 ft) Flat to Moderate	Mode	erate (2 ft/100 ft)	Moderate to S	Severe	Severe (10 ft/100 ft/

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	<u>d):</u>
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Equality Run CWH Name: EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	HED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Ma	ap Page: NRCS Soil Map Stream Order
County: Township / City: Mac	adison
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N Date of last precipitation: 06/03/20	Quantity: 0.75
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 90%	
Were samples collected for water chemistry? (Y/N): Y (Note lab sample no. or i	id. and attach results) Lab Number:
Field Measures: Temp (°C) 15.90 Dissolved Oxygen (mg/l) pH (S.U.)	.) 8.40 Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE HIGH
ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM Include important landmarks and other features of interest for site evaluation	·
	and a named accomption of the stream's location
lwetland	
wetland	
wetland	
Re	
gravel path - no culve	vert
FLOW	vert
FLOW	vert



Site Location:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 105

Client Name:

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 105

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 105

Date:

June 4, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form

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

s-jbl-20200603-07 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)).18
LENGTH OF STREAM REACH (ft) 200 LAT. 40.04780 LONG82.35434 RIVER CODE RIVER MILE).76
DATE 06/03/20 SCORER aeh, jbl COMMENTS intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED	OVERY
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.	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] 0% SILT [3 pt] 50% LEAF PACK/WOODY DEBRIS [3 pts] 0%	1 Omits
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts]	Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 30% CLAY or HARDPAN [0 pt] 0% MUCK [0 pts] 0%	
SAND (<2 mm) [6 pts] SAND (<2 mm) [6 pts] SAND (<2 mm) [6 pts]	20
Total of Percentages of 30.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 Check TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	25
✓ > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS MAXIMUM POOL DEPTH (Inches): 6.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 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]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	l
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00	5
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ River Left (L) and Right (R) as looking downstream \$\frac{1}{2} River	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Onen Pasture Row Cr	ор
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (J Park, New Field) Conservation Tillage Urban or Industrial Open Pasture, Row Cr	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Residential, Park, New Field Nore Left (L) and Right (R) as looking downstream Nore Left (L) and Right (R) as looking downstream Conservation Tillage I mature Forest, Wetland Open Pasture, Row Cr	
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Pr	
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m None None COMMENTS FLOW REGIME (At Time of Evaluation) RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (M	L
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None None COMMENTS FLOW REGIME (At Time of Evaluation) RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank	L
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) COMMENTS FLOW REGIME (At Time of bends per 61 m (200 ft) of channel) Check ONLY one box): Check ONLY one box): Check ONLY one box): Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): Check ONLY one box): Check ONLY one box):	L
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And Ri	L
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 Conservation Tillage Conservation Tillage Moderate (L) and Right (R) as looking downstream (R) a	L
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And Ri	L :)]

	ERFORMED? - Ye	s No QHEI Score	(If Yes, At	tach Completed QHEI	Form)	
DOWN!	TREAM DESIGNATE	D USE(S)				
✓ WWH Name:]				Distance from Eva	aluated Stream	0.76
CWH Name: _				Distance from Eva	luated Stream _	
EWH Name: _				Distance from Eva	luated Stream _	
MAPPI	IG: ATTACH COPIES C	F MAPS, INCLUDING T	THE <u>ENTIRE</u> WATERSHE	DAREA. CLEARLY N	IARK THE SITE LOCA	TION
JSGS Quadrangle	e Name:		NRCS Soil Map	Page: NRCS	Soil Map Stream Ord	der
County: Licking			Township / City:	son		
MISCEI	LANEOUS					
Base Flow Condit	Y	Date of last precipitation	05/27/20	Quantity:	0.17	
Photograph Inforn	nation:					
Elevated Turbidity	N	Canopy (% open):	60%			
Were samples co	lected for water chemis	stry? (Y/N): <u>Y</u> (N	lote lab sample no. or id	and attach results) La	ab Number:	
Field Measures:	Temp (°C) 26.60	Dissolved Oxygen (ma/l	pH (S.U.)	7.90 Conductivity	(µmhos/cm)	
ls the sampling re	ach representative of th	ne stream (Y/N)	If not, please explain:			
pg						
Additional comme	nts/description of pollu	ution impacts:				
BANK Stability		LO	w	MODERATE 🖌	HIGH	
					_	
ВІОТІС	EVALUATION					
Performed? (Y/N)			oucher collections option		•	
	ID numbe	r. Include appropriate fie	eld data sheets from the P	rimary Headwater Habi	tat Assessment Manua	I)
Fish Observed? (//N) N Voucher?	(Y/N) N Salaman	ders Observed? (Y/N)	Voucher? (Y/N)	N	
	Observed? (Y/N)	Voucher? (Y/N)	Aquatic Macroinvertebr	ates Observed? (Y/N)	Voucher? (Y/N	N
Comments Regar	' '					
none observed	ang Biology.			•		
		ATIVE DECCRIP			st he completed).
DRA	WING AND NARE	TAIIVE DESCRIP	TION OF STREAM	RFACH (This mu		<i>,</i> ·
	WING AND NARE					
			TION OF STREAM est for site evaluation a			location
						location
						location
	ortant landmarks and	other features of inter				location
Include imp	ortant landmarks and	other features of inter	rest for site evaluation a	nnd a narrative descri		location
Include imp	ortant landmarks and			nnd a narrative descri		location
Include imp	ortant landmarks and	other features of inter	rest for site evaluation a	and a narrative descri		location
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Include imp	ortant landmarks and	other features of inter	rest for site evaluation a	and a narrative descri		location
	ortant landmarks and	other features of inter	rest for site evaluation a	and a narrative descri		location
Include imp	oortant landmarks and	other features of inter	rest for site evaluation a	and a narrative descri		location



Client Name:

Site Location:

Line 6

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Project No.

Stream 106

Date:

June 3, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 106

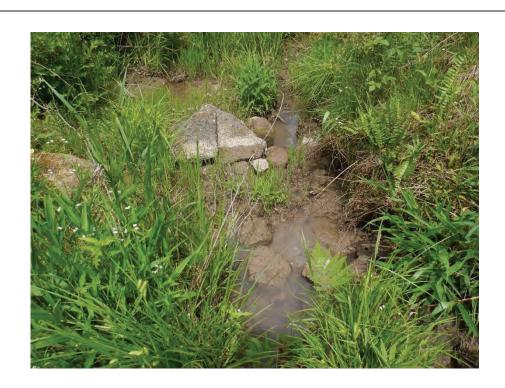
Date:

June 3, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 106

Date:

June 3, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
s-jbl-20200603-08 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) 100 LAT. 40.04995 LONG82.35408 RIVER CODE RIVER MILE	0.23
DATE 06/03/20 SCORER jbl, aeh COMMENTS ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
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	HHEI Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 70%	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] 0% ☐ SAND (<2 mm) [6 pts]	19
Total of Percentages of 10 00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 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	Pool Depth
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]	Max = 30
> 22.5 - 30 cm [30 pts]	0
COMMENTS MAXIMUM POOL DEPTH (Inches): 0.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
1 \ \ 1 \ 0 motoro \(\sigma \	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 0' 7" 4' 8") [20 pts] > 1.5 m - 3.0 m (> 0' 7" 4' 8") [20 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
→ 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed	Width Max=30
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage Immature Forest, Wetland	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m None Pasture Row Completed Conservation Tillage Immature Forest, Shrub or Old Field Conservation Flow Completed Conservation Tillage Conservation Tillage Conservation Tillage	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) V Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BANKFULL WIDTH (Feet): 3.00 L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) V Department of the property of the pro	Width Max=30 5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m None Pasture Row Completed Conservation Tillage Immature Forest, Shrub or Old Field Conservation Flow Completed Conservation Tillage Conservation Tillage Conservation Tillage	Width Max=30 5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Vide >10m Moderate 5-10m Moderate 5-10m None Residential, Park, New Field Vide >1.0 m (<=3' 3") [5 pts] Z 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BAN	Width Max=30 5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Vide >1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream to Riparian to R	Width Max=30
Narrow <5m Moderate 5-10m Residential, Park, New Field Narrow <5m None	Width Max=30
AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream (Per Bank) RIPARIAN WIDTH RIPAR	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH	Width Max=30
SINUOSITY (Number of bends per 61 m (200 ft) of channel) AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY %NOTE: River Left (L) and Right (R) as looking downstream % RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Conservation Tillage Immature Forest, Wetland	Width Max=30 5

ADDITIONAL STREAM INFORMATION (This Information	on Must Also be C	Completed):		
QHEI PERFORMED? - Yes 🗸 No QHE	I Score	(If Yes, Attac	ch Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S) WWH Name: Lickling River CWH Name:			_ Distance from Evaluated Stream Distance from Evaluated Stream	
EWH Name: _			Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLU	DING THE ENTIRE	WATERSHED	AREA. CLEARLY MARK THE SITI	LOCATION
USGS Quadrangle Name: Hanover	NRC	CS Soil Map Pa	age: NRCS Soil Map Stre	am Order
County: Licking	Township / 0	City: Madiso	n	
MISCELLANEOUS				
Base Flow Conditions? (Y/N): Y Date of last preci	ipitation:	27/20	Quantity: 0.17	
Photograph Information:				
Elevated Turbidity? (Y/N): N Canopy (% ope	en): 10%			
Were samples collected for water chemistry? (Y/N):	(Note lab sam	ple no. or id. aı	nd attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxyge	n (ma/l)	pH (S.U.)	Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N)_	Υ ΄	,		
Additional comments/description of pollution impacts:	LOW	МО	DERATE / HI	GH
BANK Stability	LOW	МО	DERATE HI	GH
BIOTIC EVALUATION			<u> </u>	
BIOTIC EVALUATION Performed? (Y/N):N (If Yes, Record all observations)	tions. Voucher colle	ections optional.	NOTE: all voucher samples must b	e labeled with the site
BANK Stability BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation in the ID number. Include appropriate in the ID number.	tions. Voucher colle triate field data shee alamanders Observ	ections optional. ets from the Primered? (Y/N)	<u> </u>	e labeled with the site Manual)
BANK Stability BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation in the Include appropriate in the Include	tions. Voucher colle triate field data shee alamanders Observ	ections optional. ets from the Primered? (Y/N)	NOTE: all voucher samples must b nary Headwater Habitat Assessment Voucher? (Y/N)	e labeled with the site Manual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation in the property of the	tions. Voucher colle triate field data shee alamanders Observ	ections optional. ets from the Primered? (Y/N)	NOTE: all voucher samples must b nary Headwater Habitat Assessment Voucher? (Y/N)	e labeled with the site Manual)
BANK Stability BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation in the Include appropriate in the Include	tions. Voucher colle triate field data shee alamanders Observ	ections optional. ets from the Primered? (Y/N)	NOTE: all voucher samples must b nary Headwater Habitat Assessment Voucher? (Y/N)	e labeled with the site Manual)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation in Include appropriate in Include appropria	tions. Voucher colle riate field data shee alamanders Observ I) N Aquatic Ma	ections optional. ets from the Prin yed? (Y/N) N acroinvertebrate	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) Voucher Voucher	e labeled with the site Manual) r? (Y/N) N
BANK Stability BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation in Include appropriate in I	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (Y/N) Need? (Y/N) Acroinvertebrate	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):
BANK Stability BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation number. Include appropriate in the property of the prop	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (Y/N) Need? (Y/N) Acroinvertebrate	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation number. Include approprise Fish Observed? (Y/N) N Voucher? (Y/N) N Sa Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Comments Regarding Biology: none observed DRAWING AND NARRATIVE DESCRIPTION.	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (P/N) red? (Y/N) Acroinvertebrate STREAM Ri evaluation and	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation number. Include appropriate include inc	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (P/N) red? (Y/N) Acroinvertebrate STREAM Ri evaluation and	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation number. Include appropriate to the property of the prop	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (P/N) red? (Y/N) Acroinvertebrate STREAM Ri evaluation and	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):
BANK Stability BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation number. Include appropriate in the property of the prop	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (P/N) red? (Y/N) Acroinvertebrate STREAM Ri evaluation and	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation number. Include appropriate to the property of the prop	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (P/N) red? (Y/N) Acroinvertebrate STREAM Ri evaluation and	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observation number. Include appropriate include appropriate include appropriate include important landmarks and other features of the state of the state include important landmarks and other features of the state include important landmarks and ot	tions. Voucher colle triate field data shee alamanders Observ N Aquatic Ma	ections optional. ets from the Print (P/N) red? (Y/N) Acroinvertebrate STREAM Ri evaluation and	NOTE: all voucher samples must be nary Headwater Habitat Assessment Voucher? (Y/N) S Observed? (Y/N) Voucher EACH (This must be comp	e labeled with the site Manual) 7? (Y/N) Dieted):





Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 107

Date:

June 3, 2020

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 107

Date:

June 3, 2020

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 107

Date:

June 3, 2020

Description:

Ephemeral

Ephemeral Stream



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

Warmwater Habitat

QHEI Score: 0.0

Stream & Location: S-JBL	-20200603-06, Licking	River	RM: _2	28.1_ _ Date: 6 3 20
AEP Crooksville-N. Newarl	<	Scorers Full Name & A	A <i>ffiliation:</i> Jake Lu	bbers, AECOM
River Code:	STORET #:	Lat./ Long.: 4	0.0532 /8 2	.3544 Office verified location
1] SUBSTRATE Check ONLY estimate % of BEST TYPES	Two substrate TYPE BOXE or note every type present OTHER TYP	NES 01	Check ONE (Or 2	
BEST TYPES POOL	HARDPAN DETRITUS SILT [2] ARTIFICIAI (Score natu	[4]	STONE [1] [1] [1] [ANDS [0] [1] [2] [3] [4] [5] [5] [6] [6] [6] [7]	☐ HEAVY [-2] ☐ MODERATE [-1] Substi
stream not assessed in field				
2] INSTREAM COVER India quality; 3-Highest quality in mode diameter log that is stable, well double UNDERCUT BANKS [1] O OVERHANGING VEGETATO SHALLOWS (IN SLOW WARD ROOTMATS [1]) Comments stream not assessed in field	ity; 2-Moderate amounts, burate or greater amounts (e.eveloped rootwad in deep / 0 POOLS > 100 ROOTWA	ut not of highest quality or in sr g., very large boulders in deep fast water, or deep, well-define 70cm [2]OXBOWS, ADS [1]AQUATIC I	nall amounts of highest or fast water, large	AMOUNT
3] CHANNEL MORPHOLO	GY Check ONE in each ca	tegory (<i>Or 2 & average</i>)		
SINUOSITY DEVELOR	PMENT CHANNE	ELIZATION STA	BILITY	
☐ HIGH [4] ☐ EXCELL ☐ MODERATE [3] ☐ GOOD [☐ LOW [2] ☐ FAIR [3] ☐ NONE [1] ☐ POOR [Comments stream not assessed in field	5] RECOVERE	_	DERATE [2]	Channel Maximum 20
4] BANK EROSION AND F	RIPARIAN ZONE Check	k ONE in each category for <i>EA</i>	CH BANK (Or 2 per bar	nk & average)
River right looking downstream REROSION NONE / LITTLE [3] MODERATE [2] HEAVY / SEVERE [1]	RIPARIAN WIDTH] WIDE > 50m [4]] MODERATE 10-50m [3]] NARROW 5-10m [2]] VERY NARROW < 5m [1]] NONE [0]	FLOOD PLA R FOREST, SWAMP [3] SHRUB OR OLD FIEL RESIDENTIAL, PARK	IN QUALITY	CONSERVATION TILLAGE [1] URBAN OR INDUSTRIAL [0] MINING / CONSTRUCTION [0]
Comments				100m riparian. Riparian Maximum
stream not assessed in field 5] POOL / GLIDE AND RIF	FI E / RIIN OUALITY			10
MAXIMUM DEPTH Check ONE (ONLY!) □ > 1m [6] □ PO □ 0.7-<1m [4]	CHANNEL WIDTH Check ONE (Or 2 & average) OL WIDTH > RIFFLE WIDTH OL WIDTH = RIFFLE WIDTH OL WIDTH < RIFFLE WIDTH	CURRENT V e) Check ALL ti H [2] TORRENTIAL [-1] [2] H [1] VERY FAST [1] [4] H [0] FAST [1]	hat apply SLOW [1] INTERSTITIAL [-1] INTERMITTENT [-2] EDDIES [1]	Pool / Current
Comments stream not assessed in field				Maximum 12
of riffle-obligate speci RIFFLE DEPTH BEST AREAS > 10cm [2] BEST AREAS 5-10cm [1] BEST AREAS < 5cm [metric=0]	es: Che RUN DEPTH F MAXIMUM > 50cm [2] S MAXIMUM < 50cm [1] N	nust be large enough to eck ONE (Or 2 & average). RIFFLE / RUN SUBSTRA TABLE (e.g., Cobble, Boulde MOD. STABLE (e.g., Large Gr. INSTABLE (e.g., Fine Gravel,	ATE RIFFLE / RU er) [2] avel) [1] Sand) [0]	ation NO RIFFLE [metric=] JN EMBEDDEDNESS NONE [2] LOW [1] MODERATE [0] EXTENSIVE [-1] Maximum
stream not assessed in field				8
DRAINAGE AREA	☐ VERY LOW - LOW [2 ☐ MODERATE [6-10] ☐ HIGH - VERY HIGH [2/701001	\sim	

Stream 108 Check ALL that appy Stream 108 Stream 108 Stream 108 Stream 108 Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not assessed in field, using existing designated use Check ALL that appy Stream not asse



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 108

Date:

June 3, 2020

Description:

Perennial

Warmwater Habitat

Licking River Facing

Upstream



Stream 108

Date:

June 3, 2020

Description:

Perennial

Warmwater Habitat

Licking River





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 108

Date:

June 3, 2020

Description:

Perennial

Licking River





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 37.5

Stream & Location: s-jbl-202000	303-05 (Shawnee Run)		RM: 2.9	Date:6 3 20
AEP Crooksville-North Newark	Scorers	Full Name & Affiliation:	AEH, JBL AECC	OM MC
River Code:	_STORET #:	Lat./ Long.: 40.0609	/8 2.3542	Office verified location
1] SUBSTRATE Check ONLYTwo sestimate % or note bestimate % or note bestimate % or note sestimate % or note bestimate % or note	ubstrate TYPE BOXES; every type present OTHER TYPES	Check CORIGIN RIFFLE LIMESTONE [1] X TILLS [1] WETLANDS [0] HARDPAN [0] SANDSTONE [0] PS; ignore SOURCES) LACUSTURINE [0] SHALE [-1] COAL FINES [-2]	ONE (Or 2 & average () HE SILT	DOCATION LINE INCOME.
quality; 3-Highest quality in moderate or diameter log that is stable, well develope 0 UNDERCUT BANKS [1] 1 OVERHANGING VEGETATION [10 SHALLOWS (IN SLOW WATER) 0 ROOTMATS [1] Comments	greater amounts (e.g., very larged rootwad in deep / fast water, O POOLS > 70cm [2] 1] O ROOTWADS [1] [1] BOULDERS [1]	ge boulders in deep or fast water or deep, well-defined, functional OXBOWS, BACKWATE AQUATIC MACROPHY LOGS OR WOODY DEE	r, large Check C pools. EXTE ERS [1] MODI TES [1] SPAR	ONE (Or 2 & average) ENSIVE >75% [11] ERATE 25-75% [7] RSE 5-<25% [3] RLY ABSENT <5% [1] Cover Maximum 20 5
3] CHANNEL MORPHOLOGY CHANNEL MO	IT CHANNELIZATIO	N STABILITY ☐ HIGH [3] ☑ MODERATE [2] ☐ LOW [1]		Channel Maximum 20
EROSION WIDE NONE / LITTLE [3] MODE MODERATE [2] NAR	ARIAN WIDTH E > 50m [4]	FLOOD PLAIN QUALI REST, SWAMP [3] RUB OR OLD FIELD [2] SIDENTIAL, PARK, NEW FIELD	TY R CONSER	RVATION TILLAGE [1] OR INDUSTRIAL [0] / CONSTRUCTION [0] ninant land use(s)
Check ONE (ONLY!) Check □ > 1m [6] □ POOL WII □ 0.7-<1m [4]	ANNEL WIDTH ONE (Or 2 & average) DTH > RIFFLE WIDTH [2]	CURRENT VELOCITY Check ALL that apply ORRENTIAL [-1] SLOW [1] ERY FAST [1] INTERSTIT AST [1] INTERMIT ODERATE [1] EDDIES [1] Indicate for reach - pools and rif	TIAL [-1] TENT [-2]	reation Potential mary Contact ondary Contact one and comment on back) Pool / Current Maximum 12
☐ BEST AREAS > 10cm [2] ☐ MAXIM ☐ BEST AREAS 5-10cm [1] ☐ MAXIM ☐ BEST AREAS < 5cm [metric=0] Comments	Check ONE (C I DEPTH RIFFLE / I UM > 50cm [2] ☐ STABLE (e.g UM < 50cm [1] ☑ MOD. STAB	Or 2 & average). RUN SUBSTRATE RIFF g., Cobble, Boulder) [2]	FLE / RUN EMB	
DRAINAGE AREA 🔲	/ERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]	%POOL: 40.00 %RUN: 20.00	%GLIDE: 40.00	Gradient Maximum 10



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 109

Date:

June 3, 2020

Description:

Perennial

Warmwater Habitat

Shawnee Run

Facing Upstream



Stream 109

Date:

June 3, 2020

Description:

Perennial

Warmwater Habitat

Shawnee Run





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 109

Date:

June 3, 2020

Description:

Perennial

Warmwater Habitat

Shawnee Run





Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

s-jbl-20200603-01 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (m	i ²) 0.01
LENGTH OF STREAM REACH (ft) 200 LAT. 40.07900 LONG82.36100 RIVER CODE RIVER MI	LE 0.38
DATE 06/03/20 SCORER AEH, JBL COMMENTS Intermittent, NHD-mapped, R5UBH	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for	Instructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO MODIFICATIONS: horse pasture	RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE box (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 5.00% (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 Substrate Percentage 100% (B) TOTAL NUMBER OF SUBSTRATE TYPES: 4	A + B
Aximum 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] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH (Inches): 6.0	00
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 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] \(\leq 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30 15 □ 15 □ w Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS No m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] 4.1 5 pts] 5 pts] 6 pts] 6 pts] 6 pts] 7 pts] 7 pts] 8 pts] 8 pts] 9 pts] 9 pts] 9 pts] 9 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 2.1 m (<=3' 3") [5 pts] 4.1 m (<=3' 3") [5 pts] 5 pts] 5 pts] 5 pts] 5 pts] 6 pts] 6 pts] 6 pts] 6 pts] 6 pts] 7 pts] 8 pts] 9 pts] 9 pts] 9 pts] 9 pts] 1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] 4 pts] 5 pts] 5 pts] 5 pts] 6 pts] 6 pts] 6 pts] 6 pts] 7 pts] 9	width Max=30 15 15 □ w Crop ction
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS 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 >10 m Mature Forest, Wetland Vide >10 m Mature Forest, Wetland Narrow <5 m Narrow <5 m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) No water (Ephemeral)	width Max=30 15 15 □ w Crop ction

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	d) <u>:</u>
QHEI PERFORMED? - Yes V No QHEI Score (If Yes,	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Shawnee Run CWH Name: EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERS	SHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Hanover NRCS Soil Ma	ap Page:NRCS Soil Map Stream Order
County: Township / City:	adison
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/27/20	Quantity: 0.17
Photograph Information:	
Elevated Turbidity? (Y/N): Canopy (% open): 0%	
Were samples collected for water chemistry? (Y/N): Note lab sample no. or	rid. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain	:
Additional comments/description of pollution impacts:	
BANK Stability LOW	MODERATE HIGH
ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM Include important landmarks and other features of interest for site evaluation cow pasture	
wetland wetland horse pasture	and
PHWH Form Page - 2 October 24, 2002 Revision	

Reset Form

Save as pdf



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 110

Date:

June 3, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 110

Date:

June 3, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 110

Date:

June 3, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

19

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
s-jbl-20200603-02 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) 150 LAT. 40.07893 LONG82.36050 RIVER CODE RIVER MILE	0.0
DATE 06/03/20 SCORER AEH, JBL COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(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	Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 75%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts] 0%	Substrate
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	9
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
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]	Max = 30
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH (Inches): 1.00	
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]	Bankfull Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts]	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY PLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream PLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Flow REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY □ RIPARIAN WIDTH □ RIP	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY PLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream PLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Flow REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY And TE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH RIPARIAN W	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V Narrow <5m Residential, Park, New Field V Open Pasture, Row C None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 No	Width Max=30 5

•	Yes No QHEI Score	(If Yes, Attacl	h Completed QHEI	Form)	
DOWNSTREAM DESIG	MATED USE(S)				
WWH Name: Shawnee Run	(-,		Distance from Eva	luated Stream	0.38
CWH Name: _			Distance from Eva	luated Stream _	
EWH Name:			Distance from Eval	luated Stream _	
MAPPING: ATTACH CO	PIES OF MAPS, INCLUDING THE	ENTIRE WATERSHED	AREA. CLEARLY M	ARK THE SITE LO	CATION
USGS Quadrangle Name:	er	NRCS Soil Map Pag	ne: NPCS	Soil Map Stream C	Order
Licking		wnship / City: Madisor		Oon Map Otream C	order
County:	10	wnsnip / City:			
MISCELLANEOUS					
Base Flow Conditions? (Y/N):	Date of last precipitation:	05/27/20	Quantity:0	.17	
Photograph Information:					
Elevated Turbidity? (Y/N):	Canopy (% open):	0%			
Were samples collected for water	chemistry? (Y/N):	lab sample no. or id. an	nd attach results) La	ah Number	
·					
Field Measures: Temp (°C)	Dissolved Oxygen (ma/l)		-		
Is the sampling reach representat	ve of the stream (Y/N) If r	ot, please explain:			
Additional comments/description BANK Stability					
		l l Moi	DEDATE /	nich	
BIOTIC EVALUATION	Voc Boord all about ations. Vou		NOTE: all variables	HIGH	alad with the
BIOTIC EVALUATION Performed? (Y/N): N (If	Yes, Record all observations. Vou number. Include appropriate field oucher? (Y/N)	cher collections optional.	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N)	amples must be labe at Assessment Man	ual)
BIOTIC EVALUATION Performed? (Y/N): N (If ID	Yes, Record all observations. Vou number. Include appropriate field o nucher? (Y/N) N Salamander	cher collections optional. data sheets from the Prim s Observed? (Y/N)	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N)	amples must be labe at Assessment Man	ual)
BIOTIC EVALUATION Performed? (Y/N): N (If ID	Yes, Record all observations. Vou number. Include appropriate field o nucher? (Y/N) N Salamander	cher collections optional. data sheets from the Prim s Observed? (Y/N)	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N)	amples must be labe at Assessment Man	ual)
BIOTIC EVALUATION Performed? (Y/N): N (If ID Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed	Yes, Record all observations. Vounumber. Include appropriate field observed for the sucher? (Y/N) N Salamander N) N Voucher? (Y/N) N According to the such as the	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be labe at Assessment Man N Voucher? (Y/	(N) N
BIOTIC EVALUATION Performed? (Y/N): N (If ID N) Fish Observed? (Y/N) N Vo Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. N) N Voucher? (Y/N) N Ac	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ual) (N) N ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID N) Fish Observed? (Y/N) N Vo Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND	Yes, Record all observations. Vounumber. Include appropriate field observed for the sucher? (Y/N) N Salamander N) N Voucher? (Y/N) N According to the such as the	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ual) (N) N ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID N) Fish Observed? (Y/N) N Vo Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. N) N Voucher? (Y/N) N Ac	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ual) (N) N ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID N) Fish Observed? (Y/N) N Vo Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. Voucher? (Y/N) N Accordance of the control of	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID N VC) Fish Observed? (Y/N) N VC Comments Regarding Biology: none observed DRAWING AND	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. N) N Voucher? (Y/N) N Ac	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID N) Fish Observed? (Y/N) N Vo Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. Voucher? (Y/N) N Accordance of the control of	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID N VC) Fish Observed? (Y/N) N VC Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology:	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. Voucher? (Y/N) N Accordance of the control of	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND Include important landmar	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. Voucher? (Y/N) N Accordance of the control of	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND Include important landmar	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. Voucher? (Y/N) N Accordance of the control of	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND Include important landmar	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. Voucher? (Y/N) N Accordance of the control of	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):
BIOTIC EVALUATION Performed? (Y/N): N (If ID N VC) Fish Observed? (Y/N) N VC Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: none observed DRAWING AND	Yes, Record all observations. Vounumber. Include appropriate field obucher? (Y/N) N Salamander. Voucher? (Y/N) N Accordance of the same of	cher collections optional. data sheets from the Prim s Observed? (Y/N) uatic Macroinvertebrates	NOTE: all voucher s ary Headwater Habit Voucher? (Y/N) s Observed? (Y/N)	amples must be laberat Assessment Mann N Voucher? (Y/	ed):



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 111

Date:

June 3, 2020

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 111

Date:

June 3, 2020

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 111

Date:

June 3, 2020

Description:

Ephemeral

Modified Ephemeral

Stream





Primary Headwater Habitat Evaluation Form

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

32	

SITE NAME/LOCATION AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project	
S-jbl-20200603-03 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) 200 LAT. 40.08207 LONG82.36242 RIVER CODE RIVER MILE	0.12
DATE 06/03/20 SCORER AEH, JBL COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	tructions
STREAM CHANNEL □ NONE / NATURAL CHANNEL □ RECOVERED □ RECOVERING □ RECENT OR NO REMODIFICATIONS: Cow pasture	COVERY
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.	ı HHEI
TYPE PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	l linex
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	12
Bldr Slabs, Boulder, Cobble, Bedrock Check	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
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]	Max = 3
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	45
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH (Inches): 2.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10 m Mature Forest, Wetland Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Normation must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Urban or Industrial	Width Max=30
> 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]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS 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 >10 m Mature Forest, Wetland Moderate 5-10 m Mature Forest, Shrub or Old Moderate 5-10 m Residential, Park, New Field V Narrow <5 m Residential, Park, New Field FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing None Conservation (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermitten)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Viant Prenced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) None water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] AVERAGE BANKFULL WIDTH (Feet): 3.00 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ↑ Note	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30 5

QHEI PER	FORMED? - Yes 🗸 N	No QHEI Score(I	f Yes, Attach Completed	QHEI Form)	
	REAM DESIGNATED USE(S)			
✓ WWH Name: Sh	awnee Run			m Evaluated Stream	0.86
CWH Name: _				m Evaluated Stream _	
EWH Name:			Distance froi	n Evaluated Stream _	
MAPPING	: ATTACH COPIES OF MAP	S, INCLUDING THE ENTIRE WA	TERSHED AREA. CLEA	RLY MARK THE SITE LO	CATION
JSGS Quadrangle N	ame: Hanover	NRCS S	Soil Map Page:	NRCS Soil Map Stream	Order
County: Licking		Township / City	Madison :		
MISCELLA	ANEOUS				
	Y	last precipitation: 05/27	/20	0.17	
Base Flow Condition	, <u> </u>	iasi precipitation.	Quantity:		
Photograph Informat	N	000/			
Elevated Turbidity? (Y/N): Canop	oy (% open): 60%			
Were samples collec	ted for water chemistry? (Y	/N): Note lab sample	no. or id. and attach resu	lts) Lab Number:	
Field Measures:	Temp (°C) Dissolve	ed Oxygen (ma/l)	H (S.U.) Condu	ctivity (µmhos/cm)	
	, , ,	Υ	, ,	-, ([· · · · · · · · · · · · · · · · · · ·
s the sampling reach	n representative of the strea	ım (Y/N) If not, please e	xpiain:		
Additional comments	s/description of pollution im	pacts:			
Additional comments	s/description of pollution im	pacts:	MODERATE	HIGH	
BANK Stability			MODERATE	нідн	
BANK Stability	s/description of pollution im		MODERATE	нідн	
BANK Stability BIOTIC E	VALUATION N (If Yes, Record all	LOW V	ns optional. NOTE: all vou	cher samples must be la	peled with the s
BANK Stability BIOTIC E Performed? (Y/N):	VALUATION N (If Yes, Record all	LOW J I observations. Voucher collection de appropriate field data sheets f	ns optional. NOTE: all vol	cher samples must be la	peled with the s
BANK Stability BIOTIC E Performed? (Y/N):	VALUATION N (If Yes, Record all ID number. Including N Voucher? (Y/N)	LOW J I observations. Voucher collection de appropriate field data sheets f N Salamanders Observed?	ns optional. NOTE: all vol rom the Primary Headwate P (Y/N) N Voucher?	cher samples must be lair r Habitat Assessment Ma	peled with the s
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N Frogs or Tadpoles O	VALUATION N (If Yes, Record all ID number. Included ID Number (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N)	LOW J I observations. Voucher collection de appropriate field data sheets f	ns optional. NOTE: all vol rom the Primary Headwate P (Y/N) N Voucher?	cher samples must be lair r Habitat Assessment Ma	peled with the s
BANK Stability BIOTIC E Performed? (Y/N):	VALUATION N (If Yes, Record all ID number. Included ID Number (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N)	LOW J I observations. Voucher collection de appropriate field data sheets f N Salamanders Observed?	ns optional. NOTE: all vol rom the Primary Headwate P (Y/N) N Voucher?	cher samples must be lair r Habitat Assessment Ma	peled with the s
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin	VALUATION N (If Yes, Record all ID number. Included ID Number (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N)	LOW J I observations. Voucher collection de appropriate field data sheets f N Salamanders Observed?	ns optional. NOTE: all vol rom the Primary Headwate P (Y/N) N Voucher?	cher samples must be lair r Habitat Assessment Ma	peled with the s
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin	VALUATION N (If Yes, Record all ID number. Included ID Number (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N)	LOW J I observations. Voucher collection de appropriate field data sheets f N Salamanders Observed?	ns optional. NOTE: all vol rom the Primary Headwate P (Y/N) N Voucher?	cher samples must be lair r Habitat Assessment Ma	peled with the s
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed	VALUATION N (If Yes, Record all ID number. Including ID) N Voucher? (Y/N) bserved? (Y/N) g Biology:	LOW	ns optional. NOTE: all volume the Primary Headwate P (Y/N) N Voucher? invertebrates Observed?	cher samples must be lair Habitat Assessment Ma (Y/N) N Voucher? (\	peled with the s nual)
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed DRAW	VALUATION N (If Yes, Record all ID number. Including ID) N Voucher? (Y/N) bserved? (Y/N) g Biology:	LOW	ns optional. NOTE: all volume on the Primary Headwate of (Y/N) N Voucher? invertebrates Observed?	cher samples must be lair Habitat Assessment Ma (Y/N) N Voucher? (\(\) s <u>must</u> be complete	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed DRAW	VALUATION N (If Yes, Record all ID number. Including Nounder? (Y/N)) bserved? (Y/N) N Voucher Selection Voucher Selection Voucher Selection Nounders Including Nounders Nound	LOW	ns optional. NOTE: all volume on the Primary Headwate Pri	cher samples must be lain Habitat Assessment Mary (Y/N) N Voucher? (Noucher?) N Voucher?	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed	VALUATION N (If Yes, Record all ID number. Including Noucher? (Y/N) Noucher? (Y/	LOW	ns optional. NOTE: all volume on the Primary Headwate of (Y/N) N Voucher? invertebrates Observed?	cher samples must be lain Habitat Assessment Mary (Y/N) N Voucher? (Noucher?) N Voucher?	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed	VALUATION N (If Yes, Record all ID number. Including Nounder? (Y/N)) bserved? (Y/N) N Voucher Selection Voucher Selection Voucher Selection Nounders Including Nounders Nound	LOW	ns optional. NOTE: all volume on the Primary Headwate Pri	cher samples must be lain Habitat Assessment Mary (Y/N) N Voucher? (Noucher?) N Voucher?	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed DRAW Include impor	VALUATION N (If Yes, Record all ID number. Including Noucher? (Y/N) Noucher? (Y/	LOW	ns optional. NOTE: all volume on the Primary Headwate Pri	cher samples must be lain Habitat Assessment Mary (Y/N) N Voucher? (Noucher?) N Voucher?	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed DRAW Include impor	VALUATION N (If Yes, Record all ID number. Including Noucher? (Y/N) Noucher? (Y/	LOW	ns optional. NOTE: all voluments of the Primary Headwate	cher samples must be lain Habitat Assessment Mary (Y/N) N Voucher? (Noucher?) N Voucher?	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed DRAW Include impor	VALUATION N (If Yes, Record all ID number. Including Noucher? (Y/N) Noucher? (Y/	LOW	ns optional. NOTE: all voluments of the Primary Headwate	cher samples must be lain Habitat Assessment Mary (Y/N) N Voucher? (Noucher?) N Voucher?	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed DRAW Include impor	VALUATION N (If Yes, Record all ID number. Including Noucher? (Y/N) Noucher? (Y/	LOW	ns optional. NOTE: all voluments of the Primary Headwate	cher samples must be lain Habitat Assessment Mary (Y/N) N Voucher? (Noucher?) N Voucher?	beled with the s nual) N N Eed):
BANK Stability BIOTIC E Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles O Comments Regardin none observed DRAW Include impor	VALUATION N (If Yes, Record all ID number. Including Noucher? (Y/N) Noucher? (Y/	LOW	ns optional. NOTE: all voluments of the Primary Headwate	cher samples must be lair Habitat Assessment Mary/N) N Voucher? (\footnote{N})	beled with the s nual) N N Eed):



STRE

Site Location:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.60616110,
60618779, 60616126

Stream 112

Client Name:

Date:

June 3, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 112

Date:

June 3, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 112

Date:

June 3, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

33

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | AEP-Crooksville-North Newark 138 kV Transmission Line Rebuild Project RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.01 s-ibl-20200603-04 SITE NUMBER 80 LAT. 40.09084 LONG. -82.37339 RIVER CODE RIVER MILE 0.38 LENGTH OF STREAM REACH (ft) DATE 06/03/20 SCORER AEH, JBL COMMENTS intermittent NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS: Cow Pasture** 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. HHEI Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 65% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 10% 0% Substrate 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 10% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 13 15% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 4 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 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] 15 2.00 COMMENTS MAXIMUM POOL DEPTH (Inches): BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 COMMENTS 2.00 AVERAGE BANKFULL WIDTH (Feet): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture Mining or Construction None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing 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 15 >3 STREAM GRADIENT ESTIMATE

Severe (10 ft/100 ft)

Moderate (2 ft/100 ft)

Flat (0.5 ft/100 ft)

✓ Flat to Moderate

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: Shawnee Run Distance from Evaluated Stream 0.38
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 Hanover
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Township / City: Madison
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/27/20 Quantity: 0.17
Photograph Information:
Elevated Turbidity? (Y/N): Canopy (% open): 50%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BANK Stability LOW MODERATE HIGH
BIOTIC EVALUATION
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
none observed
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
eroded
FLOW -
seep wooded
open grass



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 113

Date:

June 3, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 113

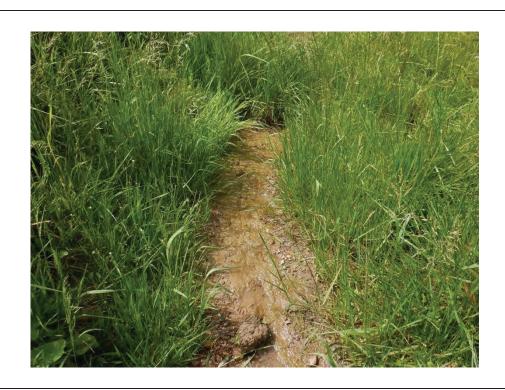
Date:

June 3, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 113

Date:

June 3, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

|--|

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | AEP Crooksville-North Newark 138 kV Transmission Line Rebuild RIVER BASIN Muskingum hh-jbl-20200602-02 DRAINAGE AREA (mi²) 0.50 SITE NUMBER 200 LAT. 40.09287 LONG. -82.41512 RIVER CODE RIVER MILE 1.14 LENGTH OF STREAM REACH (ft) DATE 06/02/20 COMMENTS intermittent SCORER |jbl,aeh NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** culverts 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. HHEI Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 40% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% **Substrate** 0% 0% BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 400% 5% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 10% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 15 25% 10% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] (B) Total of Percentages of (A) 5.00% 95% A + BBldr Slabs, Boulder, Cobble, Bedrock TOTAL NUMBER OF SUBSTRATE TYPES: | 6 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 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] 15 COMMENTS 4.00 **MAXIMUM POOL DEPTH** (Inches): BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 3.00 5 COMMENTS **AVERAGE BANKFULL WIDTH** (Feet): This information must also be completed

	RIPAR	IAN ZONE AND FL	OODPLAIN QUAI	L ITY ☆NOTE: Ri	ver Left (L) and Ri	ight (R) as Ic	oking downstream ☆
	RIPAI	RIAN WIDTH	FLOOD	PLAIN QUALITY			
L	·	r Bank) e >10m	L R	(Most Predominant Mature Forest, Wetl	and	L R	Conservation Tillage
	Mod	lerate 5-10m		Immature Forest, SI Field	hrub or Old		Urban or Industrial
	Narı	row <5m	/ /	Residential, Park, N	ew Field		Open Pasture, Row Crop
✓	✓ Non COMM	-		Fenced Pasture			Mining or Construction
7	Stream	Flowing ace flow with isolate	, ,	heck ONLY one box):			ols, no flow (Intermittent) nemeral)
Е	SINUO None 0.5	SITY (Number of be	ends per 61 m (20 1.0 1.5	0 ft) of channel) (Ch	eck <i>ONLY</i> one bo 2.0 2.5	x):	3.0 >3
ST Flat (0.		ADIENT ESTIMATE Flat to Modera	ate Mode	erate (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: North Fork Licking River Distance from Evaluated Stream 1.14
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: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Township / City: Newark
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/20/20 Quantity: 0.01
Photograph Information: 3 photos, upstream, downsteam and substrate
Elevated Turbidity? (Y/N): N Canopy (% open): 80%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) PH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Overall Stability of BOTH Stream Banks (check one): Stable Moderately Stable Unstable
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the single properties of the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N)
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 culvert hh-jbl-20200602-01
PHWH Form Page - 2



Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 114

Date:

June 2, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 114

Date:

June 2, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 114

Date:

June 2, 2020

Description:

Intermittent

Modified Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

5/

CITE NAME # OCATION AFP Crooksville-	North Newark 138 kV Transmission Line Rebuild	
hh-jbl-20200602-03 SITE NUMBER	RIVER BASIN Muskingum DRAINAGE AREA (mi²)	20
LENGTH OF STREAM REACH (ft) 100	LAT. 40.09700 LONG82.40400 RIVER CODE RIVER MILE 0.0	
DATE 06/02/20 SCORER jbl,aeh	COMMENTS intermittent	
	n - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ctions
·		
STREAM CHANNEL NONE / NAT MODIFICATIONS:	TURAL CHANNEL	VERY
	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
,	eant substrate types found (Max of 8). Final metric score is sum of boxes A & B. ERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	0% SILT [3 pt] 30%	Point
BOULDER (>256 mm) [16 pts]	10% LEAF PACK/WOODY DEBRIS [3 pts] 5% 0%	Substra
BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts]	25% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	30% MUCK [0 pts] 0%	47
SAND (<2 mm) [6 pts]	0% ARTIFICIAL [3 pts] 0%	17
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
		Pool Dep
evaluation. Avoid plunge pools from road > 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY one box): > 5 cm - 10 cm [15 pts]	Max = 3
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	0.
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS	MAXIMUM POOL DEPTH (Inches): 6.00	
3. BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	L ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
COMMENTS	AVERACE RANKELLI MIRTIL (5. 0) 4 00	15
COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 4.00	15
	This information would be the constituted	
RIPARIAN ZONE AND FLOODP	This information <u>must</u> also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH	FLOODPLAIN QUALITY	
L R (Per Bank) Wide >10m	L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial	
	Field Open Pasture Row Cror	2
Narrow <5m	Residential, Park, New Field	-
None COMMENTS	Fenced Pasture Mining or Construction	
COMMENTO		
FLOW REGIME (At Time of Eval	(Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated poo		
COMMENTS_		
	per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box):	
None 0.5	1.0 2.0 3.0 1.5 2.5 >3	
	2.0	
STREAM GRADIENT ESTIMATE		
Flat (0.5 ft/100 ft)	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 V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: North Fork Licking River CWH Name: EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EI	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Newark	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Towns	ship / City:Newark
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	04/20/20 Quantity: 0.01
Photograph Information: 3 photos, upstream, downsteam and sub	strate
Elevated Turbidity? (Y/N): N Canopy (% open): 80°	%
Were samples collected for water chemistry? (Y/N): Note la	b sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not	, please explain:
Additional comments/description of pollution impacts:	
Overall Stability of BOTH Stream Banks (check one): Stable	Moderately Stable Unstable
ID number. Include appropriate field date Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders O	er collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual) Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N)
	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest fo	r site evaluation and a narrative description of the stream's location
wetland	forest
FLOW	



Site Location:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Project No.

Stream 115

Client Name:

Date:

June 2, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 115

Date:

June 2, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 115

Date:

June 2, 2020

Description:

Intermittent

Small Drainage Warmwater Stream



Stream 116 **Ephemeral Stream**



ChieFP Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

26

Market and the second s	
hh-jbl-20200602-04 SITE NUMBER RIVER BASIN Muskingum DRAINAGE AREA (mi²)	
ENGTH OF STREAM REACH (ft) 150 LAT. 40.09700 LONG82.40400 RIVER CODE RIVER MILE C	.03
DATE 06/02/20 SCORER jbl,aeh COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVE	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
(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	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt] BEDROCK [16 pt] BEDROCK [16 pt] BEDROCK [16 pt]	Substrate Max = 40
COBBLE (65-256 mm) [12 pts]	IVIAX = 40
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0%	16
Total of Percentages of 25.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 5 cm - 10 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH (Inches): 1.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00	5
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00	5
This information must also be completed	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\$	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\times \text{NOTE: River Left (L) and Right (R) as looking downstream \$\times \frac{RIPARIAN WIDTH}{RIPARIAN WIDTH} \frac{FLOODPLAIN QUALITY}{FLOODPLAIN QUALITY} L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Field Conservation Field Conse	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\times \text{NOTE}\$: River Left (L) and Right (R) as looking downstream \frac{1}{2} \\ \text{RIPARIAN WIDTH} \text{FLOODPLAIN QUALITY} \\ \text{L R (Per Bank)} \text{L R (Most Predominant per Bank)} \text{L R } \\ \text{Wide} > 10m \text{Mature Forest, Wetland} \text{Q-Conservation Tillage} \\ \text{Immature Forest, Shrub or Old} \text{Q-Urban or Industrial} \\ \text{Narrow} \text{Narrow} \text{Sm} \text{V Residential, Park, New Field} \text{Open Pasture, Row Critical Park (Conservation Tillage)} \\ \text{Narrow} \text{Narrow} \text{Narrow} \text{Narrow}	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\times \text{NOTE: River Left (L) and Right (R) as looking downstream \$\times \frac{RIPARIAN WIDTH}{RIPARIAN WIDTH} \frac{FLOODPLAIN QUALITY}{L R (Per Bank)} \frac{L R}{L R} (Most Predominant per Bank) \frac	op -
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Narrow <5m ✓ Residential, Park, New Field Open Pasture, Row Cro None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE	op -
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Narrow <5m ✓ Residential, Park, New Field Open Pasture, Row Cro None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE	op -
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature Forest, Shrub or Old Wide >10m Narrow <5m Residential, Park, New Field Open Pasture, Row Cro None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 3.0	ор -

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: North Fork Licking River CWH Name: EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EI	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Newark	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Towns	ship / City:Newark
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	04/20/20 Quantity: 0.01
Photograph Information: 3 photos, upstream, downsteam and sub	strate
Elevated Turbidity? (Y/N): N Canopy (% open): 80°	%
Were samples collected for water chemistry? (Y/N): N (Note la	b sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not	please explain:
Additional comments/description of pollution impacts:	
Overall Stability of BOTH Stream Banks (check one): Stable	Moderately Stable Unstable
ID number. Include appropriate field date Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders O	er collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual) Observed? (Y/N) N Voucher? (Y/N
	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest fo	r site evaluation and a narrative description of the stream's location
wetland	forest
FLOW	



Site Location:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 116

Client Name:

Date:

June 2, 2020

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 116

Date:

June 2, 2020

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 116

Date:

June 2, 2020

Description:

Ephemeral

Ephemeral Stream





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 0.0

Stream & Location: S-JBL-20200602-01, North Fork Licking River RM: 23.4 . Date:6 2 2	20
Stream 117 Scorers Full Name & Affiliation: Jake Lubbers, AECOM	-
Di Carina de la Companya del Companya de la Companya del Companya de la Companya	ified tion 🗆
1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present BEST TYPES POOL RIFFLE HARDPAN [4] HEAVY [-2]	bstrate
U COBBLE [8]	0 ximum 20
Comments	
stream not assessed in field	_
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. O UNDERCUT BANKS [1]	
Cover Comments Maximum	0
stream not assessed in field	
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]	0
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 EROSION DRIVING SOME (41) DRIVING S	
□ NONE / LITTLE [3] □ MODERATE 10-50m [3] □ SHRUB OR OLD FIELD [2] □ URBAN OR INDUSTRIAL [0] □ MODERATE [2] □ NARROW 5-10m [2] □ RESIDENTIAL, PARK, NEW FIELD [1] □ MINING / CONSTRUCTION [0] □ HEAVY / SEVERE [1] □ VERY NARROW 5-5m [4] □ RESIDENTIAL, PARK, NEW FIELD [1] □ MINING / CONSTRUCTION [0]] 0]
Comments OPEN PASTURE, ROWCROP [0] Indicate predominant land use(s) past 100m riparian. Riparian Maximum 10	.00
stream not assessed in field 5] POOL / GLIDE AND RIFFLE / RUN QUALITY	
MAXIMUM DEPTH CHANNEL WIDTH CURRENT VELOCITY Recreation Potential	
Check ONE (ONLY!) Check ONE (Or 2 & average) Check ALL that apply > 1m [6] POOL WIDTH > RIFFLE WIDTH [2] TORRENTIAL [-1] SLOW [1] 0.7-<1m [4] POOL WIDTH = RIFFLE WIDTH [1] VERY FAST [1] INTERSTITIAL [-1] 0.4-<0.7m [2] POOL WIDTH < RIFFLE WIDTH [0] FAST [1] INTERMITTENT [-2] 0.2-<0.4m [1] MODERATE [1] EDDIES [1] o.2-m [0] Indicate for reach - pools and riffles.	
Comments stream not assessed in field Maximum 12	رں
Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average).	ric=0]
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]	
[metric=0] Comments stream not assessed in field EXTENSIVE [-1] Run Maximum 8	
	_
6] GRADIENT (226.00 ft/mi) UVERY LOW - LOW [2-4] WPOOL: WGLIDE: Gradient Maximum	

Stream 117 North Fork Licking River, OEPA existing ALU = WW/H, PCR Stream not assessed in field, using existing ALU = WW/H, PCR Stream not assessed in field, using existing ALU = WW/H, PCR Stream not assessed in field, using existing designated use Stream not assessed in field, using designated use Stream not assessed in field, using designated use Stream not assessed in field, using the part of the file not assessed in field use Stream not assessed in field, using the part of the file not assessed in file not assessed in file not assessed in file not assessed in fie



Site Location:

Client Name:

AEP

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 117

Date:

June 2, 2020

Description:

Perennial

Warmwater Habitat

North Fork Licking River

Facing Upstream



Stream 117

Date:

June 2, 2020

Description:

Perennial

Warmwater Habitat

North Fork Licking River





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 117

Date:

June 2, 2020

Description:

Perennial

Warmwater Habitat

North Fork Licking River





Primary Headwater Habitat Evaluation Form

JJ

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | AEP Crooksville-North Newark 138 kV Transmission Line Rebuild RIVER BASIN Muskingum DRAINAGE AREA (mi²) 0.01 s-aeh-20200921-01 SITE NUMBER LAT. 40.09100 LONG. -82.41500 RIVER CODE RIVER MILE 0.2 LENGTH OF STREAM READH (ft) DATE 06/02/20 **COMMENTS** Ephemeral SCORER |jbl,aeh NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 75% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% **Substrate** 0% 0% BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 20% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 15 0% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 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] 0 0.00 COMMENTS **MAXIMUM POOL DEPTH** (Inches): BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Feet): **7.00** COMMENTS 20 AVERAGE BANKFULL WIDTH This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture Mining or Construction None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing 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 15 >3

Severe (10 ft/100 ft)

Moderate (2 ft/100 ft)

Flat (0.5 ft/100 ft)

STREAM GRADIENT ESTIMATE

Flat to Moderate

QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: North Fork Licking River Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Licking Township / City: Newark
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 09/13/20 Quantity: 1.67
Photograph Information: 3 photos, upstream, downsteam and substrate Elevated Turbidity2 (V/N): N Capony (% open): 20%
Elevated Turbidity? (Y/N): Canopy (% open):
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
in the damping reach representative of the stream (17/1)
Additional comments/description of pollution impacts:
Overall Stability of BOTH Stream Banks (check one): Stable Moderately Stable Unstable
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the significant content of the collection
Fish Observed? (Y/N) N Voucher? (Y/N) N
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc



STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 118

Date:

September 21, 2020

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 118

Date:

September 21, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

AEP

Site Location:

Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Stream 118

Date:

September 21, 2020

Description:

Intermittent

Small Drainage Warmwater Stream





APPENDIX E

POND PHOTOLOG AND HABITAT PHOTOLOG



Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 01

Date:

June 11, 2020

Description:

Facing East



Pond 03

Date:

October 8, 2020

Description:

Facing Southwest





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 04

Date:

October 08, 2020

Description:

Facing West



Pond 05

Date:

October 8, 2020

Description:

Facing East





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 06

Date:

October 08, 2020

Description:

Facing West



Pond 07

Date:

October 8, 2020

Description:

Facing West





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 08

Date:

June 2, 2020

Description:

Facing Southeast



Pond 09

Date:

June 1, 2020

Description:

Facing South





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 10

Date:

June 2, 2020

Description:

Facing Northwest



Pond 11

Date:

June 10, 2020

Description:

Facing West





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No. 60616110,

60618779, 60616126

Pond 12

Date:

June 10, 2020

Description:

Facing Southwest



Pond 13

Date:

June 09, 2020

Description:

Facing South





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 14

Date:

June 9, 2020

Description:

Facing West



Pond 15

Date:

June 3, 2020

Description:

Facing Southwest





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 16

Date:

September 21, 2020

Description:

Facing Southeast



Pond 17

Date:

September 21, 2020

Description:

Facing West





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 1

Date:

September 22, 2020

Description:

Old field habitat near proposed structure 3

Facing East



Photo 2

Date:

October 8, 2020

Description:

Old field habitat along ROW near proposed structure 7

Facing East





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 3

Date:

June 11, 2020 **Description:**

Successional hardwood woodland habitat between proposed structures 13 and 14

Facing West



Photo 4

Date:

October 8, 2020

Description:

Successional hardwood woodland habitat near structure 17

Facing South





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 5

Date:

October 07, 2020

Description:

Old field habitat between proposed structures 27 and 28

Facing North



Photo 6

Date:

October 7, 2020

Description:

View of Pasture/Hay field identified as potential northern harrier habitat near proposed structure 34

Facing Northwest





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 7

Date:

June 2, 2020

Description:

Pasture/Hay field habitat at proposed structure 53

Facing Northwest



Photo 8

Date:

June 2, 2020

Description:

Scrub-shrub habitat near proposed structure 54

Facing Southeast





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 9

Date:

June 3, 2020

Description:

Agricultural land between proposed structures 64 and 65

Facing Southeast



Photo 10

Date:

June 5, 2020

Description:

Landscaped area near proposed structure 79

Facing Northwest





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 11

Date:

June 5, 2020

Description:

Agricultural land near proposed structure 89

Facing West



Photo 12

Date:

June 11, 2020

Description:

Agricultural land between proposed structures 98 and 99

Facing Northwest





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 13

Date:

June 10, 2020

Description:

Scrub-shrub habitat near proposed structure 124

Facing East



Photo 14

Date:

June 10, 2020

Description:

Landscaped area habitat near proposed structure 132

Facing Southwest





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Pond 15

Date:

June 4, 2020

Description:

Scrub-shrub habitat between proposed structures 149 and 150

Facing Southwest



Photo 16

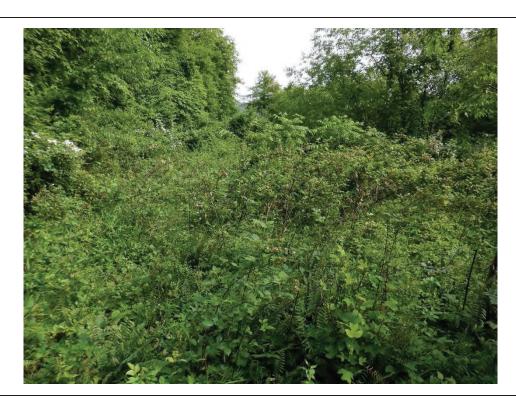
Date:

June 4, 2020

Description:

Scrub-shrub and successional hardwood woodland habitat near proposed structure 164

Facing North





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 17

Date:

June 3, 2020

Description:

View of Pasture/Hay field identified as potential northern harrier habitatalocated between proposed structures 170 and 173

Facing South



Photo 18

Date:

June 3, 2020

Description:

Successional hardwood woodland habitat near proposed structure 175

Facing East





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Photo 19

Date:

June 3, 2020

Description:

View of potential northern harrier habitat as a Pasture/Hay field near proposed structure 189

Facing South



Photo 20

Date:

June 3, 2020

Description:

Successional hardwood woodland habitat near proposed structure 194

Facing South





Client Name:

Site Location:

Project No.

AEP

Crooksville-Newark 138 kV Transmission Line Rebuild Project

60616110, 60618779, 60616126

Photo 21

Date:

June 2, 2020

Description:

Landscaped area habitat between proposed structure 207 and 208

Facing West



Photo 22

Date:

June 2, 2020

Description:

Old field and successional hardwood woodland habitat near proposed structure 210

Facing East





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Photo 23

Date:

June 4, 2020

Description:

View Pasture/Hay Field habitat between proposed structure 164 and 163. Area is surrounded by woodlots and with no water features present.

Facing Southeast



Photo 24

Date:

June 2, 2020

Description:

View of potential northern harrier grassland habitat between proposed structure 144 and 143

Facing South





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No.

60616110, 60618779, 60616126

Photo 25

Date:

June 11, 2020

Description:

View of potential northern harrier grassland habitat between proposed structures 92 and 93

Facing Northwest



Photo 26

Date:

June 5, 2020

Description:

View of potential northern harrier grassland habitat between structures 81 and 82

Facing Southeast





Client Name:

AEP

Site Location:

Crooksville-Newark 138 kV Transmission Line Rebuild Project

Project No. 60616110,

60618779, 60616126

Photo 27

Date:

October 7, 2020

Description:

View of potential northern harrier grassland habitat located between structures 34 and 35

Facing Southeast



Photo 28

Date:

October 8, 2020

Description:

View of old field habitat located at proposed structure 19. Area is adjacent to industrial/mining activities and nearby water features lack sufficient cover.

Facing North





APPENDIX F

AGENCY CORRESPONDENCE



Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate John Kessler, Chief 2045 Morse Road – Bldg. E-2 Columbus, OH 43229 Phone: (614) 265-6621

Fax: (614) 267-4764

November 20, 2019

Jason Tucker AECOM 525 Vine Street Cincinnati, Ohio 45202

Re: 19-862; Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project: The proposed project involves rebuilding approximately 31.6 miles of transmission line within an existing 100-foot right-of-way (ROW) from Crooksville, Ohio at the Crooksville Station heading northwest toward North Newark Station.

Location: The proposed project is located in Perry Township, Muskingum County, Ohio.

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

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

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

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

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

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

The project is within the range of the Indiana bat (Myotis sodalis), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (Carva ovata), shellbark hickory (Carya laciniosa), bitternut hickory (Carya cordiformis), black ash (Fraxinus nigra), green ash (Fraxinus pennsylvanica), white ash (Fraxinus americana), shingle oak (Ouercus imbricaria), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus* americana), eastern cottonwood (Populus deltoides), silver maple (Acer saccharinum), sassafras (Sassafras albidum), post oak (Quercus stellata), and white oak (Quercus alba). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the sheepnose (*Plethobasus cyphyus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the rabbitsfoot (*Quadrula cylindrica cylindrica*), a state endangered and federally threatened mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the long-solid (*Fusconaia maculata maculata*), a state endangered mussel, the sharp-ridged pocketbook (*Lampsilis ovata*), a state endangered mussel, the wartyback (*Quadrula nodulata*), a state endangered mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, and the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the northern madtom (*Noturus stigmosus*), a state endangered fish, the paddlefish (*Polyodon spathula*) a state threatened fish, the mountain madtom (*Noturus eleutherus*), a state threatened fish, and the channel darter (*Percina copelandi*), a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is also within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding

depressions. Due to the location, and the type of habitat present at the project site, and within the vicinity of the project area, this project is not likely to impact this species.

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

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

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

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

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List 8 16.pdf

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

Mike Pettegrew Environmental Services Administrator (Acting) From: Ohio, FW3 <ohio@fws.gov>
Sent: Friday, December 11, 2020 3:14 PM

To: Hanner, Audrey

Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate

Subject: [EXTERNAL] AEP Crooksville-North Newark 138 kV Transmission Line Rebuild, Perry/Muskingum/Licking Counties, Ohio



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



TAILS# 03E15000-2021-TA-0439

Dear Ms. Hanner.

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

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

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us.

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

Sincerely,

Patrallia

Patrice Ashfield Field Office Supervisor

ce: Nathan Reardon, ODNR-DOW Kate Parsons, ODNR-DOW



APPENDIX G

SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE CROOKSVILLE-NORTH NEWARK 138 KV TRANSMISSION LINE REBUILD PROJECT



		TRANSMISSION LINE REBUILD PROJE			Hydric
Soil Series	Map Unit Symbol	Map Unit Description	Topographic Setting	Hydric	Component (%)
Alford	AfB	Alford silt loam, 2 to 6 percent slopes; Alford silt loam, 1 to 8 percent slopes	benches, coves, ridges, rises on terraces, hills	No	NA
7 5. 5	AfC	Alford silt loam, 8 to 15 percent slopes	benches, coves, ridges	No	NA
	AfC2	Alford silt loam, 6 to 12 percent slopes, eroded	ridges, valleys	No	NA
Amanda	AmC2	Amanda silt loam, 6 to 12 percent slopes, eroded	knolls on till plains, ridges on till plains, valleys on till plains	No	NA
	BgB	Berks channery silt loam, 2 to 6 percent slopes	ridges	No	NA
Berks	BgD	Berks channery silt loam, 15 to 25 percent slopes	hillslopes on hills	No	NA
	Bhk4D	Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed, highwall	spoil piles on ridges on hills	Yes	Typic Epiaquents (1)
	Bhk4F	Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed, highwall	spoil piles on ridges on hills	No	NA
	BhPXF	Bethesda-Pits, surface mine complex, 25 to 70 percent slopes, unreclaimed	spoil piles	No	NA
Bethesda	Bhs4D	Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed	spoil piles on ridges on hills	Yes	Typic Epiaquents (1)
	Bhs4F	Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed	spoil piles on ridges on hills	No	NA
	Bhv1B	Bethesda silt loam, 0 to 8 percent slopes, reclaimed	reclaimed lands on ridges on hills	Yes	Typic Epiaquents (1)
	Bhv1D	Bethesda silt loam, 8 to 25 percent slopes, reclaimed	reclaimed lands on hillslopes on hills	Yes	Typic Epiaquents (1)
	BrC	Brownsville channery silt loam, 6 to 12 percent slopes	ridges, knolls	No	NA
	BrD	Brownsville channery silt loam, 12 to 18 percent slopes	hills, ridges, knolls	No	NA
Brownsville	BrE	Brownsville channery silt loam, 18 to 25 percent slopes	hills	No	NA
	BrF	Brownsville channery silt loam, 25 to 35 percent slopes	hills	No	NA
	BrG	Brownsville channery silt loam, 35 to 70 percent slopes	hills	No	NA
	BvF	Brownsville silt loam, 40 to 70 percent slopes	hills	No	NA
	ChC2	Chili loam, 6 to 12 percent slopes, eroded	breaks on terraces, knolls on kames	No	NA
Chili	ChD2	Chili loam, 12 to 18 percent slopes, eroded	breaks on terraces, knolls on kames	No	NA
	ChE2	Chili loam, 18 to 25 percent slopes, eroded	breaks on terraces	No	NA
	CkB	Cincinnati silt loam, 1 to 8 percent slopes	ridges on till plains	No	NA
Cincinnati	CkC2	Cincinnati silt loam, 6 to 12 percent slopes, eroded; Cincinnati silt loam, 8 to 15 percent slopes, eroded	ridges on till plains, till plains on till plains	No	NA
Clarksburg CmC2		Clarksburg silt loam, 6 to 12 percent slopes, eroded	hills	No	NA
	СоВ	Coshocton silt loam, 2 to 6 percent slopes	ridges on hills	No	NA
Coshocton	CoC2	Coshocton silt loam, 6 to 12 percent slopes, eroded	ridges on hills	No	NA
30311001011	CoD2	Coshocton silt loam, 12 to 18 percent slopes, eroded	hills, ridges	No	NA
	CsD	Coshocton silt loam, 15 to 25 percent slopes	hillsides on hills	No	NA
Dekalb	DkD	Dekalb loam, 15 to 25 percent slopes	ridges on hills	No	NA
Donaid	DmF	Dekalb loam, 40 to 70 percent slopes, very stony	hills	No	NA



Soil Series	Map Unit Soil Series Symbol Map Unit Description		Topographic Setting	Hydric	Hydric Component (%)
·		·	ridges	Unranked	NA Poorly drained
Enoch	EnE	Enoch shaly clay loam, 20 to 40 percent slopes	depressions	Yes	soils (5)
Euclid	EuA	Euclid silt loam, rarely flooded	depressions	Yes	Luray (15)
Fairpoint	FbD	Fairpoint channery clay loam, 8 to 25 percent slopes	reclaimed lands on ridges on hills	Yes	Unnamed (5)
	FcA	Fitchville silt loam, 0 to 2 percent slopes	lake terraces	Yes	Luray (10)
Fitchville	FcB	Fitchville silt loam, 2 to 6 percent slopes	draws	Yes	Luray (5)
	FtA	Fitchville silt loam, 0 to 3 percent slopes	depressions, drainageways	Yes	Luray (15)
Fox	FoD2	Fox gravelly loam, 12 to 18 percent slopes, eroded	terraces, kames	No	NA
Frankstown- Mertz	FrB	Frankstown variant-Mertz complex, 2 to 6 percent slopes, very stony	ridges	No	NA
Gilpin	GdC	Gilpin silt loam, 8 to 15 percent slopes	ridges on hills	No	NA
Olamband	GfB	Glenford silt loam, 2 to 6 percent slopes	depressions	Yes	Luray (5)
Glenford	GnB	Glenford silt loam, 1 to 8 percent slopes	depressions	Yes	Luray (10)
Guernsey	GnC2	Guernsey silt loam, 6 to 12 percent slopes, eroded	ridges, hills	No	NA
	GwC	Guernsey-Westmoreland silt loams, 8 to 15 percent slopes	ridges on hills, knolls on hills	No	NA
Guernsey- Westmoreland	GwD	Guernsey-Westmoreland silt loams, 15 to 25 percent slopes	ridges on hills, knolls on hills, benches on hills	No	NA
	GwE	Guernsey-Westmoreland silt loams, 25 to 40 percent slopes	hills	No	NA
Homewood- Westmoreland	lomewood- HaD2 Homewood-Westmoreland silt loams, 15 to 25		hills	No	NA
	НоВ	Homewood silt loam, 2 to 6 percent slopes	ridges on till plains, knolls on till plains	No	NA
Homewood	HoC2	Homewood silt loam, 6 to 12 percent slopes, eroded	knolls on till plains, ridges on till plains, hills on till plains, hills on till plains	No	NA
	HoD2	Homewood silt loam, 12 to 18 percent slopes, eroded	hills on till plains, hills on till plains	No	NA
	HoE2	Homewood silt loam, 18 to 25 percent slopes, eroded	Homewood silt loam, 18 to 25 percent slopes, eroded	No	NA
Keene	KeB	Keene silt loam, 3 to 8 percent slopes	ridges on uplands	No	NA
Killbuck	Kk	Killbuck silt loam, frequently flooded	flood plains	Yes	Killbuck (100)
Killbuck	Km	Killbuck silt loam, frequently flooded	flood plains	Yes	Killbuck (85)
Lindside	Lindside Lk Lindside silt loam, 0 to 3 percent slopes, occasionally flooded		flood plains on valleys	Yes	Melvin (5)
Luray	Luray Lu Luray silty clay loam		flats on lake plains, depressions on lake plains, flats on terraces, depressions on terraces	Yes	Luray (100)
Medway	Medway Md Medway silt loam, occasionally flooded		flood plains	Yes	Sloan (5)
NA.	Мс	Melvin silt loam, thin solum, frequently ponded, 0 to 3 percent slopes	flood plains on valleys	Yes	Melvin (90)
Melvin	Me	Melvin silt loam, 0 to 3 percent slopes, frequently flooded	flood plains on valleys	Yes	Melvin (85)



		TRANSMISSION LINE REBUILD PROJE	O CONTET AREA		
Soil Series	Map Unit Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
	MeC	Mentor silt loam, gravelly substratum, 8 to 15 percent slopes	benches on terraces	No	NA
Mentor	MnB	Mentor silt loam, 2 to 6 percent slopes	lake terraces	Yes	Luray (5)
	MnC2	Mentor silt loam, 6 to 12 percent slopes, eroded	terraces, hills	No	NA
	MnD2	Mentor silt loam, 12 to 18 percent slopes, eroded	terraces, hills	No	NA
Mertz	MrE	Mertz very cherty silt loam, 18 to 35 percent slopes, very stony	hills	No	NA
Newark	Ne	Newark silt loam, 0 to 3 percent slopes, frequently flooded	flood plains on valleys	Yes	Melvin (5)
	NeC2	Negley loam, 6 to 12 percent slopes, eroded	terraces, kames, knolls on till plains	No	NA
Negley	NeD2	Negley loam, 12 to 18 percent slopes, eroded	terraces, kames	No	NA
	NeE	Negley loam, 18 to 25 percent slopes	terraces	No	NA
	NeF	Negley loam, 25 to 70 percent slopes	terraces	No	NA
Nolin	No	Nolin silt loam, 0 to 3 percent slopes, occasionally flooded	flood plains on valleys	Yes	Melvin (5)
	OcA	Ockley silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	outwash plains, outwash plains, terraces	No	NA
	ОсВ	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	outwash terraces, stream terraces, outwash plains	No	NA
Ockley	OcC2	Ockley silt loam, 6 to 12 percent slopes, eroded	drainageways on terraces, kames	No	NA
	OeA	Ockley-Urban land complex, 0 to 3 percent slopes	draws	Yes	Westland (5)
	OeC	Ockley-Urban land complex, 6 to 12 percent slopes	drainageways on terraces, knolls on terraces	No	NA
Orrville	Or	Orrville silt loam, 0 to 3 percent slopes, occasionally flooded	flood plains on valleys	Yes	Melvin (5)
Parke	PaC2	Parke silt loam, 6 to 12 percent slopes, eroded	drainageways on terraces	No	NA
Pits	Pg	Pits, gravel	NA	Unranked	NA
FILS	Pmi	Pits, mine	NA	Unranked	NA
	RgC	Rigley fine sandy loam, 6 to 12 percent slopes	ridges, knolls	No	NA
Rigley	RgD	Rigley fine sandy loam, 12 to 18 percent slopes	hills, ridges, knolls	No	NA
	RgE	Rigley fine sandy loam, 18 to 25 percent slopes	hills	No	NA
Rigley- Coshocton	RhE	Rigley-Coshocton complex, 18 to 25 percent slopes	hills	No	NA
Sebring			flats on lake plains, depressions on lake plains, flats on terraces, depressions on terraces	Yes	Sebring (100)
Shoals	Sh	Shoals silt loam, 0 to 2 percent slopes, occasionally flooded	flood plains, river valleys	Yes	Sloan (8)
Stonelick			flood plains	No	NA
Titusville	TsB	Titusville silt loam, 2 to 6 percent slopes	depressions	Yes	poorly drained soils (10)
TitusVIIIE	TsC2	Titusville silt loam, 6 to 12 percent slopes, eroded	draws	Yes	poorly drained soils (5)
Udorthents	Uf	Udorthents, loamy	NA	No	NA
Water			NA	Unranked	NA
Wellston WhB Wellston silt loam, 1 to 8 percent slopes		ridges, benches	No	NA	



Soil Series	Map Unit Soil Series Symbol Map Unit Description		Topographic Setting	Hydric	Hydric Component (%)
	WhC	Wellston silt loam, 8 to 15 percent slopes	ridges on uplands	No	NA
Mastmara	WkB	Westmore silt loam, 1 to 8 percent slopes	ridges on hills	No	NA
Westmore	WkC	Westmore silt loam, 8 to 15 percent slopes	ridges on hills	No	NA
	WmC	Westmoreland silt loam, 8 to 15 percent slopes	hills on uplands	No	NA
	WmD	Westmoreland silt loam, 15 to 25 percent slopes	hills on uplands	No	NA
Westmoreland	WmE	Westmoreland silt loam, 25 to 35 percent slopes	hills on uplands	No	NA
	WnE	Westmoreland loam, 20 to 40 percent slopes, very bouldery	hills	No	NA
	WrD2	Westmoreland-Guernsey silt loams, 15 to 25 percent slopes, eroded	hills	No	NA
	WrE2	Westmoreland-Guernsey silt loams, 25 to 40 percent slopes, eroded	hills	No	NA
Westmoreland -Guernsey	WsF	Westmoreland-Guernsey silt loams, 40 to 70 percent slopes	hills	No	NA
-	WuD2	Westmoreland-Guernsey silt loams, 15 to 25 percent slopes, eroded	hills	No	NA
	WuE2	Westmoreland-Guernsey silt loams, 25 to 40 percent slopes, eroded	hills	No	NA
Zanesville	ZnB	Zanesville silt loam, 1 to 8 percent slopes	ridges	No	NA
Zariesville	ZnC	Zanesville silt loam, 8 to 15 percent slopes	ridges on hills	No	NA

NA = Not Applicable or Not Available



APPENDIX H

NWI DISPOSITION SUMMARY TABLE WITHIN THE CROOKSVILLE-NORTH NEWARK 138 KV TRANSMISSION LINE REBUILD PROJECT



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NWI Code	NWI Description	Figure 2	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments
PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	2L	Wetland 017	Wetland extends outside study corridor
PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	2W	Wetland 045	Wetland extends outside study corridor
PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	2AD, 2AE	Wetland 061	Sample point Upland 064 indicates majority of NWI-mapped wetland is upland
PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	2AX	Wetland 083a	Wetland extends outside study corridor
PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	2BK	No inventoried resources noted	Aerial mapping and nearby sample point Upland 098 documented agricultural field
PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	2BK	No inventoried resources noted	Aerial mapping and nearby sample point Upland 098 documented agricultural field
PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded	2AX	Wetland 083a, Wetland 083b, Wetland 084 and Stream 094	Wetlands extend outside study area
PFO1A	Palustrine, Forested, Broad- Leaved Deciduous, Temporary Flooded	2AK	No inventoried resources noted	Adjacent to Wetland 069, sample point Upland 072 documented upland conditions
PFO1A	Palustrine, Forested, Broad- Leaved Deciduous, Temporary Flooded	2BW	No inventoried resources noted	Mapped NWI boundary touches survey corridor boundary, does not extend into survey corridor
PFO1A	Palustrine, Forested, Broad- Leaved Deciduous, Temporary Flooded	2BW	No inventoried resources noted	Mapped NWI boundary touches survey corridor boundary, does not extend into survey corridor
PFO1A	Palustrine, Forested, Broad- Leaved Deciduous, Temporary Flooded	2BW, 2BX	No inventoried resources noted	Mapped NWI boundary touches survey corridor boundary, does not extend into survey corridor
PFO1A	Palustrine, Forested, Broad- Leaved Deciduous, Temporary Flooded	2BV, 2BW	No inventoried resources noted	Sample point Upland 106 indicates upland conditions
PSS1/E M1C	Palustrine, Scrub-Shrub, Broad- Leaved Deciduous, Emergent, Persistent, Seasonally Flooded	2B, 2C	Wetland 009abc	Wetland extends outside study corridor
PSS1C	Palustrine, Scrub-Shrub, Broad- Leaved Deciduous, Seasonally Flooded	2AD	Wetland 060	Wetland extends outside study corridor
PUBF	Palustrine, Unconsolidated Bottom, Semipermanently Flooded	2G	Pond 01	Pond extends outside study corridor
PUBF	Palustrine, Unconsolidated Bottom, Semipermanently Flooded	2K	Wetland 015	Wetland extends outside study corridor
PUBFx	Palustrine, Unconsolidated Bottom, Semipermanently Flooded, Excavated	2AS, 2AT	Pond 12	Entire pond boundary delineated within survey corridor
PUBGh	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Diked/Impounded	20	Pond 08	Pond extends outside study corridor
PUBGh	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Diked/Impounded	2AW, 2AX	Pond 14	Pond extends outside study corridor



TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR						
NWI Code	NWI Description	Figure 2	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments		
PUBGh	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Diked/Impounded	2BS	Pond 16	Pond extends outside study corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	21	No inventoried resources noted	Mapped NWI boundary touches survey corridor boundary, does not extend into survey corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2J	No inventoried resources noted	No pond conditions noted within active hay field/pasture		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2J	Pond 04	Pond extends outside study corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2J	Pond 04	Pond extends outside study corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2J	Pond 05	Pond extends outside study corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2J	No inventoried resources noted	Obvious pond boundaries on aerial do not intersect this portion of survey corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2T	Pond 10 and Wetland 034b	Pond extends outside study corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2AS	Pond 11	Pond extends outside study corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2BW, 2BX	Wetland 106ab	Wetland extends outside study corridor		
PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	2BW, 2BX	Pond 17	Pond extends outside study corridor		
R2UBH	Riverine, Lower Perennial, Unconsolidated bottom, Permanently flooded	2A	Stream 001 (Moxahala Creek)	Stream extends outside survey corridor		
R2UBH	Riverine, Lower Perennial, Unconsolidated bottom, Permanently flooded	2B	Stream 001 (Moxahala Creek)	Stream extends outside survey corridor		
R2UBH	Riverine, Lower Perennial, Unconsolidated bottom, Permanently flooded	2C	Stream 001 (Moxahala Creek)	Stream extends outside survey corridor		
R2UBH	Riverine, Lower Perennial, Unconsolidated bottom, Permanently flooded	2W, 2X	Stream 046 (Turkey Run)	Stream extends outside survey corridor		
R2UBH	Riverine, Lower Perennial, Unconsolidated bottom, Permanently flooded	2AD	Stream 056 (Jonathan Creek)	Stream extends outside survey corridor		
R2UBH	Riverine, Lower Perennial, Unconsolidated bottom, Permanently flooded	2BJ	Stream 108 (Licking River)	Stream extends outside survey corridor		
R2UBH	Riverine, Lower Perennial, Unconsolidated bottom, Permanently flooded	2BW, 2BX	Stream 117 (North Fork Licking River)	Stream extends outside survey corridor		
R3UBH	Riverine, Upper Perennial, Unconsolidated bottom, Permanently flooded	2BD	Stream 101 (Claylick Creek)	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2D	Stream 005 (Snake Run)	Stream extends outside survey corridor		



	TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR Related Field Inventoried					
NWI	NWI Description	Figure 2	Resource	Comments		
Code	·	rigure 2	(Wetland ID/Stream ID)	Comments		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2E, 2F	Stream 007	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	21	Stream 013	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2L	Wetland 017	Wetland extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2M	Stream 018	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2R	Stream 032	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2Z, 2AA	Stream 050	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2AH, 2AI	Stream 064	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2AM, 2AN	Stream 074	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2AT	Stream 082 (Wise Run)	Stream extends outside survey corridor, mapped in field slightly off NWI mapping		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2AU	Stream 085 (Claylick Creek) and Wetland 079	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2AW	Stream 090 and Stream 091 (Claylick Creek)	Confluence of 2 streams mapped as one, streams extend outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2AY	Stream 095 and Wetland 087	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2BA, 2BB	Stream 098 and Wetland 089	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2BB	Stream 099	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2BG	Stream 105 and Wetland 095	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2BI	Stream 106	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2BT	Stream 114	Stream extends outside survey corridor		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2BR	No inventoried resources noted	Fully vegetated upland drainage feature present		
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	2BW, 2BV	No inventoried resources noted	Within residential yard, maintained lawn		
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2A	Stream 001 (Moxahala Creek)	Stream extends outside survey corridor		
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2A	Stream 001 (Moxahala Creek)	Stream extends outside survey corridor		
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2F, 2G	Stream 008 (Burley Run)	Stream extends outside survey corridor		
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2L	Stream 016 (Buckeye Fork)	Stream extends outside survey corridor		
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	20	Stream 023 (Butcherknife Creek)	Stream extends outside survey corridor		
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2P, 2Q	Stream 027 and Stream 028	Streams extend outside survey corridor		



	TRANSMISSION LINE REBUILD PROSECT SURVEY CORRIDOR							
NWI Code	NWI Description	Figure 2	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2U	Stream 042, Wetland 040	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2U	No inventoried resources noted	Field delineated stream boundaries do not intersect survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2Y	Stream 049	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2AK	Stream 071 (Valley Run)	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2AN	Wetland 074a	mapped NWI/NHD Wise Run was field delineated to the northeast				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2AN	Wetland 074b	Wetland extends outside survey corridor; mapped NWI/NHD Wise Run is field delineated to the northeast				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2AW	Stream 090 (Claylick Creek)	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2AX	Wetland 085	Wetland extends outside survey corridor; mapped NWI/NHD Claylick Creek was field delineated to the south				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2BF	Stream 104 (Equality Run)	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2BL	Stream 109 (Shawnee Run)	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2BO	Stream 110	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2BO	Stream 110	Stream extends outside survey corridor				
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	2BQ	Pond 15	Pond extends outside survey corridor				

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Summary: Notice Letter of Notification for the Crooksville- North 138kV Transmission Line Rebuild Project Pages 794-1976 Part 3 electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc.