

STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 21

Date:

November 13, 2018

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 21

Date:

November 13, 2018

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

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AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 21

Date:

November 13, 2018

Description:

Ephemeral

Modified Ephemeral Stream





FPA Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-006 RIVER BASIN Ohio DRAINAGE AREA (mi	
LENGTH OF STREAM REACH (ft) 56 LAT. 40.52963 LONG81.00362 RIVER CODE RIVER MIL	
DATE 11/13/18 SCORER CBA/BJM COMMENTS Ephemeral begins at edge of ROW and flows	into forest
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for I	nstructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO MODIFICATIONS:	RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE box	S 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] 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] 0% MUCK [0 pts] 0%	10
SAND (<2 mm) [6 pts]	
Total of Percentages of 10.00% (A) Bldr Slabs, Boulder, Cobble, Bedrock (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 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):	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
COMMENTS Dry channel; OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 0	
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]	IIIIAZ-50
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.9	0 5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstreams	,
RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY	•
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillac	
Wide >10m	,e
—— Field —— Open Pasture Roy	v Cron
Residential, Park, New Field	·
None Fenced Pasture Mining or Construct COMMENTS Stream in young forest downslope of existing ROW, flows into NWI outside of study	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermi	tent)
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe	0 ft/100 ft)

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: _UNT to Trail Run	Distance from Evaluated Stream _ 0.30
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEI	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Carrollton NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Lee To	ownship
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
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:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional	ıl. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Pr	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macroinvertebra	Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	IN .
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	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
1 4 40	
FLOW	
	11111
	11111
	11111
00 5t 100	Name of the last o





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Client Name:

Site Location:

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Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 22

Date:

November 13, 2018

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 22

Date:

November 13, 2018

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 22

Date:

November 13, 2018

Description:

Ephemeral

Ephemeral Stream





Primary Headwater Habitat Evaluation Form

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

32	
UL	

SITE NUMBER S-CBA-008 RIVER BASIN Ohio DRAINAGE		
	AREA (mi²) 0.01	
	RIVER MILE	
DATE 11/13/18 SCORER CBA/BJM COMMENTS Intermittent formed from seep in exist.	sting ROW	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Stream	ms" for Instruction	ons
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENTED RECOVERING RECOVERING RECENTED RECOVERING RECOVER	NT OR NO RECOVER	RY
1. 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 boxes TYPE PERCENT TYPE PE		IHEI etric
BLDR SLABS [16 pts] 0% SILT [3 pt]	30% PC	oints
BOULDER (>256 mm) [16 pts]	0% 0% Suk	bstrate
COBBLE (65-256 mm) [12 pts] 20% CLAY or HARDPAN [0 pt]		ax = 40
GRAVEL (2-64 mm) [9 pts]	0%	22
SAND (<2 mm) [6 pts]	0%	
Total of Percentages of 70.00% (A) Substrate Percentage Check Check	(B) A	+ B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 19 TOTAL NUMBER OF SUBSTRATE TYPES:	PES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the	ne time of Poo	ol 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]	Ma	ax = 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 OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimet	ters): 3	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Ba	ankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]		Vidth ax=30
> 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]	IVIC	ax-30
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (met		
	ters): 0.90	5
	ters): 0.90	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 do		5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY LR (Per Bank) LR (Most Predominant per Bank) LR	ownstream ☆	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conserv	ownstream ∕x vation Tillage	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m This information must also be completed NOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Conserved Immature Forest, Shrub or Old Field	ownstream ☆ vation Tillage or Industrial	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣NOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Urban of	ownstream ∕x vation Tillage	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Field Open P None Penced Pasture Mining of	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Immature Forest, Shrub or Old Field V Narrow <5m None Fenced Pasture COMMENTS Stream located entirely within existing electric transmission powerline ROV	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Immature Forest, Shrub or Old Field V Narrow <5m None Fenced Pasture COMMENTS Stream located entirely within existing electric transmission powerline ROV FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Conserved Moderate 5-10m Moderate 5-10m Field Narrow <5m None Fenced Pasture COMMENTS Stream located entirely within existing electric transmission powerline ROV FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) This information must also be completed ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY A	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction V ow (Intermittent)	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Field V Narrow <5m None Fenced Pasture COMMENTS Stream located entirely within existing electric transmission powerline ROV FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moderate 5-10m This information must also be completed NOTE: River Left (L) and Right (R) as looking do River Left (L) and Right (R) as looking do RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Mature Forest, Wetland Conserved Field Open P None Fenced Pasture Mining of Comments of Evaluation (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no field	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction V ow (Intermittent)	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Consent Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open P None COMMENTS Stream located entirely within existing electric transmission powerline ROV FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Intermittent formed from groundwater seep in hillside SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction V ow (Intermittent)	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Consent Immature Forest, Shrub or Old Field V Narrow <5m None Fenced Pasture COMMENTS Stream located entirely within existing electric transmission powerline ROV FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Intermittent formed from groundwater seep in hillside	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction V ow (Intermittent)	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature Forest, Shrub or Old Viant Period Pasture None COMMENTS Stream located entirely within existing electric transmission powerline ROV FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Intermittent formed from groundwater seep in hillside SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction V ow (Intermittent)	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking do RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Consent Immature Forest, Shrub or Old Immature Forest, Shrub or Old Viban of Residential, Park, New Field Open P None COMMENTS Stream located entirely within existing electric transmission powerline ROV FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Intermittent formed from groundwater seep in hillside SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 1.0 2.0 3.0 3.0 3.0 3.1 STREAM GRADIENT ESTIMATE	ownstream ☆ vation Tillage or Industrial easture, Row Crop or Construction V ow (Intermittent)	5

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: _UNT to Trail Run	_ Distance from Evaluated Stream0.00
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEE	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Carrollton NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Lee To	wnship
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
	and attack vascilla \ \ \ \ ab \ \ \ \ \ \ \ \ \ \ \ \ \ \
	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:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Pri	mary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macroinvertebrate	Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation an	d a narrative description of the stream's location
FLOW -> Start String Rom Start String Rom Let Cu	PES PES PER PER





PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 23

Date:

November 13, 2018

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 23

Date:

November 13, 2018

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

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Gable-Carrollton 138 kV Tranmission Line Project

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Stream 23

Date:

November 13, 2018

Description:

Intermittent

Modified Small Drainage Warmwater Stream





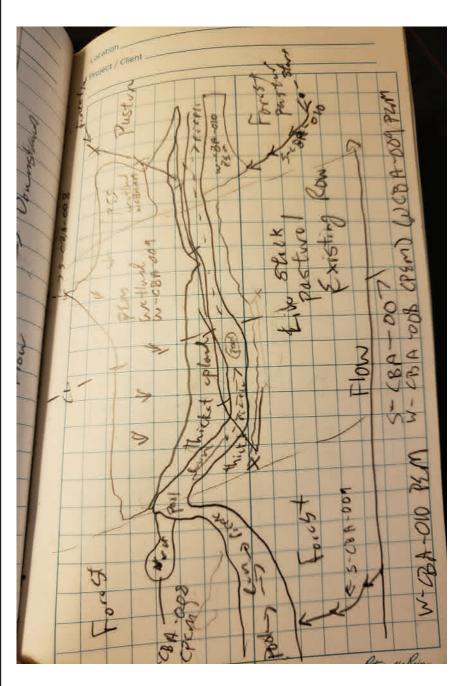
Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 47.5

Stream & Location	AEP Carrollton-	Gable / Carroll County,	Ohio		_ <i>RM:</i> _	1.13 <i>_D</i> a	ate: 11/13/2018
S-CBA-007 (Trail Run)		Sc	orers Full Nai	ne & Affiliation	C. Ashbaugh & B	. Miller / AECOM	
River Code:	·	STORET #:	Lat./ Lo	ong.: 40.52922	26_ /8 _1	.003382	Office verified location
1] SUBSTRATE Chest BEST TYPES BEST TYPES BEST TYPES BLDR /SLABS [1] GRAVEL [3] GRAVEL [7] SAND [6] BEDROCK [5] NUMBER OF BEST Comments 2] INSTREAM CONTAINS undercut BAI UNDERCUT BAI OVERHANGING	POOL RIFFLE OI TYPES: 40 5 Indicate presquality; 2-Moty in moderate or cole, well developed	bstrate TYPE BOXES; very type present OTHER TYPES HARDPAN [4] DETRITUS [3] MUCK [2] SILT [2] ARTIFICIAL [0] (Score natural s or more [2] sludge fror or less [0] sence 0 to 3: 0-Absent; oderate amounts, but no greater amounts (e.g., v d rootwad in deep / fast POOLS > 700 ROOTWADS	pool RIFFLE	ORIGIN LIMESTONE [1] TILLS [1] WETLANDS [0] HARDPAN [0] SANDSTONE [0] RIP/RAP [0] LACUSTURINE [0] SHALE [-1] COAL FINES [-2] Ints or if more comm / or in small amounts in deep or fast wate	ONE (Or 2 SILT On of marging so of highest str., large in pools. ERS [1] (TES [1]	& average) QU HEAN MOD NOR FREE NOR NON Check ON EXTENS MODER SPARSE	JALITY VY [-2] DERATE [-1] MAL [0] F [1]
Comments							Cover Maximum 20
_	EVELOPMENT EXCELLENT [7] GOOD [5] FAIR [3]	CHANNELIZ NONE [6] RECOVERED [4	ZATION 4]	STABILITY HIGH [3] MODERATE [2] LOW [1]	1		Channel Maximum 20
4] BANK EROSION River right looking downs EROSION NONE / LITTLE [: MODERATE [2] HEAVY / SEVERE	RIPA	RIAN WIDTH > 50m [4]	FLOO R FOREST, SW SHRUB OR C RESIDENTIAL FENCED PAS	D PLAIN QUAL AMP [3] DLD FIELD [2] L, PARK, NEW FIELI	ITY	CONSERVA URBAN OF MINING / C	ATION TILLAGE [1] R INDUSTRIAL [0] ONSTRUCTION [0] ant land use(s) T. Riparian
Comments							Maximum 7.5
5] POOL / GLIDE A MAXIMUM DEPT Check ONE (ONLY! > 1m [6] 0.7-<1m [4] 0.4-<0.7m [2] 0.2-<0.4m [1] <0.2m [0] Comments Maximum depth = 3 meter Indicate for full of riffle-obligate RIFFLE DEPTH BEST AREAS > 10cm BEST AREAS < 5cm	CHACHER Check Composition Check Chec	MNEL WIDTH ONE (Or 2 & average) TH > RIFFLE WIDTH [2] TH = RIFFLE WIDTH [0] TH < RIFFLE WIDTH [0] S; Best areas mus Check DEPTH M > 50cm [2] M < 50cm [1] MOD	Che TORRENTIA VERY FAST MODERATE Indicate for t be large eno ONE (Or 2 & avera FLE / RUN SU	□ INTERMITE INT	ITIAL [-1] ITENT [-2] 1] iffles. a popul	Prima Secon (circle one a	tion Potential ary Contact dary Contact and comment on back) Pool / Current Maximum 12 NO RIFFLE [metric=0] DDEDNESS
[metric	=0]					EXTENSIVE	[-1] Run Maximum 0
6] GRADIENT (83 DRAINAGE ARI	EA 🗆 M	ERY LOW - LOW [2-4] ODERATE [6-10] GH - VERY HIGH [10-6		%POOL: 15 %RUN: (26) %GLID	E:	Gradient Maximum 10

AJ SAMPLED REACH	Comment RE: Reach consistency/ Is reach typ	Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.	ber/Sampling observations, Concerns, Acce	ss directions, etc.
Check ALL that apply			Ou call sampled within 10 color points and 18 c	onsistent with typical sucari
MEINOU OIAGE 1st -sample pass- 2nd	characteristics. Minor erosion in ROW.	Ν.		
		Max Pool Depth = 8 inches; OHWM Depth = 10 inches; OHWM Width = 11 feet; Bank Full Width = 12 feet		
■ L. LINE UP OTHER ■ NORMAL®	Trial Run Existing ALU = CWH/EWH			
DISTANCE DRY				
0.5 Km CLARITY	BJ AESTHETICS	DJ MAINTENANCE Circle some & COMMENT	T EJ ISSUES	FJ MEASUREMENTS
0.15 Km 1 20 cm		PUBLIC / PRIVATE BOTH / NA	WWTP / CSO / NPDES / INDUSTRY	x width
0.12 Km 20-<40 cm	☐ ☐ INVASIVE MACROPHYTES ☐ ☐ EXCESS TURBIDITY	ACTIVE / HISTORIC / BOTH / NA ACTIVE / HISTORIC / BOTH / NA ACTIVE / HISTORIC / BOTH / NA	HARDENED / URBAN / DIKI & GRIME CONTAMINATED / LANDFILL	x depth
		SPRAD/ SNAG / REMOVED	BMPs-CONSTRUCTION-SEDIMENT	max. deptn ⊽ hankfull wid#h
meters SECCHI DEPTH	H FOAM / SCUM	MODIFIED / DIPPED OUT / NA LEVEED / ONE SIDED	LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE	bankfull x depth
CANOPY 1st	cm TRASH/LITTER	RELOCATED / CUTOFFS	FALSE BANK / MANURE / LAGOON	W/D ratio
> 85%- OPEN Pass	☐ NUISANCE ODOR ☐ SLUDGE DEPOSITS	MOVING-BEDLOAD-STABLE ARMOURED / SLUMPS	WASH H ₂ 0 / TILE / H ₂ 0 TABLE ACID / MINE <u>/ OUA</u> RRY / FLOW	pankfull max. depth floodprone x^2 width
30%-<55%	CSOs/SSOs/OUTFALLS	ISLANDS / SCOURED	NATURAL /WETLAND) STAGNANT	entrench. ratio
SED	<i>CJ RECREATION</i> AREA DEPTH <i>POOL:</i> □>100ft²□>3ft	IMPOUNDED / DESICCATED FLOOD CONTROL / DRAINAGE	PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY	Legacy Tree:

Stream Drawing:





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 24

Date:

November 13, 2018

Description:

Perennial

Trail Run

OEPA Warmwater Habitat

Facing Upstream



Stream 24

Date:

November 13, 2018

Description:

Perennial

Trail Run

OEPA Warmwater Habitat





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 24

Date:

November 13, 2018

Description:

Perennial

Trail Run

OEPA Warmwater Habitat





Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-009 RIVER BASIN Ohio DRAINAGE AREA (mi²)	.01
LENGTH OF STREAM REACH (ft) 107 LAT. 40.52887 LONG81.00306 RIVER CODE RIVER MILE	
DATE 11/13/18 SCORER CBA/BJM COMMENTS Intermittent formed from seep in ROW, flows int	o forest
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.	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 70 00% (A) Substrate Percentage 4009/ Substrate Percentage 4009/ (B)	HHEI Metric Points Substrate Max = 40 22
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 19 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 19	A + B
 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] NO WATER OR MOIST CHANNEL [0 pts] 	Pool Depth Max = 30
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 3	
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 OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.90	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 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 Stream located in young forest, paralleling ROW	qc
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS_Intermittent formed from groundwater seep in hillside	-) <u> </u>
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach C	ompleted QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
<u> </u>	stance from Evaluated Stream
	stance from Evaluated Stream0.00
EWH Name: Dis	tance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED ARE	A. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Carrollton NRCS Soil Map Page:	NRCS Soil Map Stream Order
County:Carroll Township / City:Lee Township	nip
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and a	ttach 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:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NO	TE: 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) Aquatic Macroinvertebrates O	oucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	N
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REA	CH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a n	
TOAT GOS CENT Chan	and a life of
FLOW Forest Flow Part CEUT)	Panst

Save as pdf





PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 25

Date:

November 13, 2018

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 25

Date:

November 13, 2018

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 25

Date:

November 13, 2018

Description:

Intermittent

Small Drainage Warmwater Stream





ChieFP Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio SITE NUMBER S-CBA-010 RIVER BASIN Ohio DRAINAGE AREA (mi²)	.01
LENGTH OF STREAM REACH (ft) 70 LAT. 40.52929 LONG81.00294 RIVER CODE RIVER MILE	
DATE 11/13/18 SCORER CBA/BJM COMMENTS Intermittent located on young forest adjacent to	ROW
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 RECOVERING RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECOV	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 □ □ □ BLDR SLABS [16 pts] 0% ✓ □ SILT [3 pt] 75%	Metric Points
BOULDER (>256 mm) [16 pts]	Substrate
□ □ BEDROCK [16 pt] □ □ FINE DETRITUS [3 pts] □ 10% □ COBBLE (65-256 mm) [12 pts] □ □ CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ O%	18
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 15.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 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 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]	IVIAX - 30
> 22.5 - 30 cm [30 pts]	5
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 3	
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
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
OHWM width = 2 foot	
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.90	5
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90	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 ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	5
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	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$NOTE: River Left (L) and Right (R) as looking downstream \$\frac{A}{2}\$ 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 Field Open Pasture Row Creen	
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 Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field To Narrow <5m This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ♣ RIPARIAN WIDTH FLOODPLAIN QUALITY Another Proceedings of the process of the p	ор
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field To Narrow <5m This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R Urban or Industrial Open Pasture, Row Cro	ор
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	op
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 Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Crown None Fenced Pasture Mining or Construction COMMENTS Stream located in young forest, paralleling ROW FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	op
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 Immature Forest, Wetland Woderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Stream located in young forest, paralleling ROW FLOW REGIME (At Time of Evaluation) COMMENTS Intermittent formed from groundwater seep in hillside 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 NOTE: River Left (L) and Right (R) as looking downstream left (Per Bank)	op

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: UNT to Trail Run EWH Name:	Distance from Evaluated Stream 0.00 Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED		
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order		
County rowiship / Gity	- The state of the	
MISCELLANEOUS	0.40	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18	Quantity: 0.40	
Photograph Information: Upstream, downstream, and substrate		
Elevated Turbidity? (Y/N): N Canopy (% open): 100%		
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	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:		
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 Pri	·	
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrate	Voucher? (Y/N) N Voucher? (Y/N) N	
Comments Regarding Biology:		
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	REACH (This must be completed):	
Include important landmarks and other features of interest for site evaluation an		
FLOW Sex Stand Con Sex Standard West Con Standard West Con Sex		





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 26

Date:

November 13, 2018

Description:

Intermittent

Ephemeral Stream

Facing Upstream



Stream 26

Date:

November 13, 2018

Description:

Intermittent

Ephemeral Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 26

Date:

November 13, 2018

Description:

Intermittent

Ephemeral Stream





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

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio SITE NUMBER S-CBA-011 RIVER BASIN Ohio DRAINAGE AREA (mi²) 0.	.01
LENGTH OF STREAM REACH (ft) 147 LAT. 40.52028 LONG81.99128 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Ephemeral channel draining from gravel swale in	n field
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. TYPE PERCENT TYPE PERCENT	HHEI Metric
□ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] O LEAF PACK/WOODY DEBRIS [3 pts] O O O O O O O O O O O O O	Substrate
COBBLE (65-256 mm) [12 pts] 15% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	9
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 15.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 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] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 0	
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
	Wax-50
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS OHWM width = 3 feet AVERAGE BANKFULL WIDTH (meters): 1.22	15
COMMENTS OHWM width = 3 feet AVERAGE BANKFULL WIDTH (meters): 1.22	15
COMMENTS OHWM width = 3 feet AVERAGE BANKFULL WIDTH (meters): 1.22 This information must also be completed	15
COMMENTS OHWM width = 3 feet AVERAGE BANKFULL WIDTH (meters): 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 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	15
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field None COMMENTS located downslope of existing ROW and active havfield FLOW REGIME (At Time of Evaluation) AVERAGE BANKFULL WIDTH (meters): 1.22 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Onservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction COMMENTS located downslope of existing ROW and active havfield FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	pp
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Iocated downslope of existing ROW and active havfield FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): 1.22 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction COMMENTS Iocated downslope of existing ROW and active havfield FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	pp
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	op

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:	
CWH Name:	Distance from Evaluated Stream
EWH Name: UNT to Elkhorn Creek	Distance from Evaluated Stream1.50
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEE	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County:Carroll Township / City: Lee To	ownship
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 35%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	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:	
Stream starts at edge of hayfield below vegetated gravel swale, crosses farm ro	ad and drains into perennial stream S-CBA-012.
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optiona ID number. Include appropriate field data sheets from the Principle of	imary Headwater Habitat Assessment Manual) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation ar	nd a narrative description of the stream's location
FLOW The Park that the park the park that the park that the park that the park that the park the par	A STATE OF THE STA

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3-68 N-011 EFFE



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 27

Date:

November 14, 2018

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 27

Date:

November 14, 2018

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 27

Date:

November 14, 2018

Description:

Ephemeral

Ephemeral Stream



Stream 28

Spring Water



Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-012 RIVER BASIN Ohio DRAINAGE AREA (mi²) 0	.31
LENGTH OF STREAM REACH (ft) 400 LAT. 40.51976 LONG81.99020 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Perennial stream flowing across existing ROW	
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 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: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 4	HHEI Metric Points Substrate Max = 40 25
	De el Desetle
 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] < 5 cm [5 pts]	
> 22.5 - 30 cm [30 pts]	25
COMMENTS OHWM depth = 30 inches MAXIMUM POOL DEPTH (centimeters): 13	
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
> 3.0 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] COMMENTS OHWM width = 10.5 feet AVERAGE BANKFULL WIDTH (meters): 3.65	25
AVERAGE BANKFOLL WIDTH (Illeters).	25
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{RIPARIAN WIDTH} \frac{1}{2}\text{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	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	p
None Fenced Pasture Mining or Construction	
COMMENTS Ripiarin width and Floodplain Quality in ROW are narrow and New Field, respectively	-
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS The property of the control of the	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): None 1.0 2.0 3.0 3.0 3.0 3.0 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/10	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: Distance from Evaluated Stream What is a contract to the contract of the contract o
EWH Name: UNT to Elkhorn Creek Distance from Evaluated Stream 1.50
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Rergholz NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Lee Township
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18 Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate
Elevated Turbidity? (Y/N): N Canopy (% open): 15%
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: Stream is wide in woods on either side of existing ROW, but narrow and sinuous with steep eroding banks within ROW.
Additional comments/description of pollution impacts:
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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vouc
Comments Regarding Biology:
DRAWING AND NADDATIVE DESCRIPTION OF STREAM REACH (This must be completed):
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
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PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 28

Date:

November 14, 2018

Description:

Perennial

Spring Water

Facing Upstream



Stream 28

Date:

November 14, 2018

Description:

Perennial

Spring Water





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 28

Date:

November 14, 2018

Description:

Perennial

Spring Water





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

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-013 RIVER BASIN Ohio DRAINAGE AREA (mi²) 0.	01
LENGTH OF STREAM REACH (ft) 27 LAT. 40.51968 LONG81.98982 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Intermittent stream from groundwater seep on hi	II in R <mark>a</mark>
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
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	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] □ □ SILT [3 pt] 0%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] O LEAF PACK/WOODY DEBRIS [3 pts] O O O O O O O O O O O O O	Substrate
COBBLE (65-256 mm) [12 pts] 25% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ GRAVEL (2-64 mm) [9 pts] 50% ☐ MUCK [0 pts] 0% ☐ SAND (<2 mm) [6 pts]	24
Total of Percentages of OF 000/ (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock Check Check	АТБ
 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] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 0	
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]	Max=30
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.61	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	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Imature Forest, Wetland Urban or Industrial	
Field Open Pasture Row Cro	0
Narrow <5m Residential, Park, New Field None Fenced Pasture Mining or Construction	
COMMENTS stream located entirely within existing ROW	
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 COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None	
□ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)	O ft)

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
EWH Name: UNT to Elkhorn Creek	Distance from Evaluated Stream 1.50
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map Po	age:NRCS Soil Map Stream Order
County: Carroll Township / City: Lee To	wnship
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
N.	nd 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:	
Stream starts at groundwater seep in existing ROW and flows into perennial stre	am S-CBA-012
Additional comments/description of pollution impacts:	
Additional comments/description of pollution impacts:	
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 Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology:	nary Headwater Habitat Assessment Manual) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	
Include important landmarks and other features of interest for site evaluation an	a a narrative description of the stream's location
FLOW Start Segnol3 Start Segnol3 Enisting Rom Smothers Destrum Filour Shortens	

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PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 29

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream

Facing Upstream



Stream 29

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 29

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream





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

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NAME/LOCATION ALT CATTORICOLOGISTS / CATTORICO	
LENGTH OF STREAM REACH (ft) 137 LAT. 40.51958 LONG81.98995 RIVER CODE RIVER MILE	1
DATE 11/14/18 SCORER CBA/BJM COMMENTS Intermittent stream originating off ROW	
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	
(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] 10%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] Switch LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% 0%	Substrat
COBBLE (65-256 mm) [12 pts] 30% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 30% MUCK [0 pts] ARTIFICIAL [3 pts] 0% 0%	26
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: 21 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 Dep
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
	5
COMMENTS OHWM depth = 2 inches MAXIMUM POOL DEPTH (centimeters): 3	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 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
COMMENTS OHWM width = 3 feet AVERAGE BANKFULL WIDTH (meters): 1.22	15
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 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 ——	n
✓ ✓ Narrow <5m ✓ ✓ Residential, Park, New Field	ρþ
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): None 1.0 3.0	
0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 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: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream WINT to Elkhorn Creek Distance from Evaluated Stream 1.50
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Lee Township
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18 Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate
Elevated Turbidity? (Y/N): Canopy (% open):45%
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:
Stream starts in woods outside existing ROW and flows into perennial stream S-CBA-012
Additional comments/description of pollution impacts:
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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW FOREST FOREST FLOW FL





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 30

Date:

November 14, 2018

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 30

Date:

November 14, 2018

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 30

Date:

November 14, 2018

Description:

Intermittent

Modified Small Drainage Warmwater Stream





10

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-015 RIVER BASIN Ohio DRAINAGE AREA (mi²) 0.	.01
LENGTH OF STREAM REACH (ft) 41 LAT. 40.51620 LONG81.98562 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Intermittent stream originating from wetland W-C	CBA-0
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 (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 Bedrock (A) Substrate Percentage Check (ONLY two predominant substrate TYPE boxes (Max of 32). A Bubstrate Percentage (Max of 32). Final metric score is sum of boxes A & B. PERCENT TYPE SILT [3 pt] Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (Max of 32). Add total number of significant substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). A Bubstrate Percentage of Check ONLY two predominant substrate TYPE boxes (Max of 32). A Bubstrate Percentage (B) Substrate Percentage (B) Check (B)	HHEI Metric Points Substrate Max = 40 5
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 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 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
OHWM depth = 1 inch	
COMMENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Bankfull Width Max=30
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.92	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 Immature Forest, Shrub or Old Urban or Industrial Field Open Pasture, Row Cro None Fenced Pasture Mining or Construction COMMENTS	pp
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 2.0 3.0 3.0 0.5 1.5 2.5	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 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:	Distance from Evaluated Stream
	istance from Evaluated Stream _
EWH Name: UNT to Elkhorn Creek	istance from Evaluated Stream0.90
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AR	EA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map Page	NRCS Soil Map Stream Order
County: Carroll Township / City: Lee Towns	ship
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 55%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and	attach results) I ab 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:	
Stream originates in PEM wetland W-CBA-013 located at edge of ag field and flows in	nto wooded area
Additional comments/description of pollution impacts:	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. No ID number. Include appropriate field data sheets from the Primary	•
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Solamanders Observed? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Noucher? (Y/N) Nouche	Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	IN .
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REA	
Include important landmarks and other features of interest for site evaluation and a	narrative description of the stream's location
FLOW STORES OF THE STORES OF T	





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 31

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream

Facing Upstream



Stream 31

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 31

Date:

November 14, 2018

Description:

Intermittent

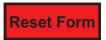
Modified Ephemeral Stream





SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-016 RIVER BASIN Ohio DRAINAGE AREA (mi²)	.01
LENGTH OF STREAM REACH (ft) 63 LAT. 40.51165 LONG81.97924 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Ephemeral stream originating downslope of RO	W at e
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.	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
BOULDER (>256 mm) [16 pts]	Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 0% MUCK [0 pts] 0%	11
SAND (<2 mm) [6 pts] 25% ARTIFICIAL [3 pts] 0%	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 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 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 OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 0	
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]	
COMMENTS OHWM width = 2 feetAVERAGE BANKFULL WIDTH (meters): 0.92	
	5
	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 ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY LR (Per Bank) LR (Most Predominant per Bank) LR	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Moderate 5-10m Moderate 5-10m T V 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 \$\frac{A}{2}\$ 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 Field Open Pasture Row Creen	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ♣ RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field To Annual Park (Per Bank) Residential, Park, New Field	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$NOTE: River Left (L) and Right (R) as looking downstream \$\frac{A}{2}\$ 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 Field Open Pasture Row Creen	
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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) LR (Most Predominant per Bank) LR 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 Residential, Park, New Field Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	op
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 Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH L R	op
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) 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 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) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream River Left (L)	op
This information must also be completed 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 Open Pasture, Row Cro None COMMENTS FLOW REGIME (At Time of Evaluation) SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 Completed Riparian also be completed Riparials be completed NoTE: River Left (L) and Right (R) as looking downstream and residence in the completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream and Right (R) as looking downstream and Right (R) as looking downstream and Riparian and Right (R) as looking downstream and Riparian and Right (R) as looking downstream and Riparian and Rip	op
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 Open Pasture, Row Cre 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 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3	op
This information must also be completed 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 Open Pasture, Row Cro None COMMENTS FLOW REGIME (At Time of Evaluation) SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 Completed Riparian also be completed Riparian also be completed NoTE: River Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must relative Left (L) and Right (R) as looking downstream allowing relation to must	op -

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Comp	leted QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Distan	ce from Evaluated Stream
	ce from Evaluated Stream
	one in Evaluated en earn
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA.	
USGS Quadrangle Name: Bergholz NRCS Soil Map Page: County: Carroll Township / City: Lee Township	NRCS Soil Map Stream Order
County: Carroll Township / City: Lee Township	
MISCELLANEOUS	0.40
· /	nntity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): Canopy (% open):15%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attack	n 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:	
Stream originates downslope of existing ROW and flows into wooded area	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE:	all variables agreement by labelled with the cite
ID number. Include appropriate field data sheets from the Primary Hea	•
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed?	cher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH	(This must be completed):
Include important landmarks and other features of interest for site evaluation and a narra	·
	·
FLOW TO LET TO L	



Downstinon



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 32

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 32

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 32

Date:

November 14, 2018

Description:

Ephemeral

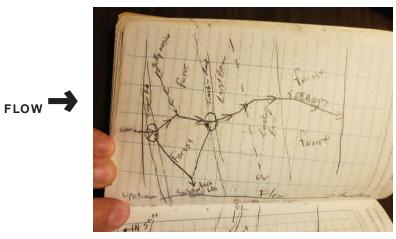
Modified Ephemeral Stream



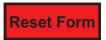


SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-017 RIVER BASIN Ohio DRAINAGE AREA (mi²)	.01
LENGTH OF STREAM REACH (ft) 218 LAT. 40.51162 LONG81.97887 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Intermittent stream crossing ROW, deeply incise	ed
NOTE: 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.	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] 15% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 40% MUCK [0 pts] 0%	16
SAND (<2 mm) [6 pts] 20% ARTIFICIAL [3 pts] 0%	16
Total of Percentages of 15.00% (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 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]	0
OLIVIM donth = 4 inch	
COMMENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. 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] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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 OHWM width = 3 feet -> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters):	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 OHWM width = 3 feet This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ARIPARIAN WIDTH FLOODPLAIN QUALITY FLOODPLAIN QUALITY PLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ARIPARIAN 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 OHWM width = 3 feet 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 (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 OHWM width = 3 feet 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 Noderate 5-10m	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 OHWM width = 3 feet 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 R	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 OHWM width = 3 feet 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 R	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 OHWM width = 3 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 ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY □ Wide > 10m □ Mature Forest, Wetland □ Conservation Tillage □ Wide > 10m □ Mature Forest, Shrub or Old □ Urban or Industrial □ Narrow < 5m □ Residential, Park, New Field □ Open Pasture, Row Cro □ None □ Fenced Pasture □ Mining or Construction COMMENTS □ 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 ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Most Predominant per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Narrow <5m Narrow <5m Residential, Park, New Field Penced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS None 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)	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 OHWM width = 3 feet This information must also be completed RIPARIAN ZONE AND 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 OHWM width = 3 feet 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) a	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 OHWM width = 3 feet This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Cor	npleted QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Dist	ance from Evaluated Stream
	ance from Evaluated Stream
EWH Name: UNT to Elkhorn Creek Dista	ance from Evaluated Stream0.50
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA	CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map Page:	NRCS Soil Map Stream Order
County: Carroll Township / City: Lee Township	p
MISCELLANEOUS	
\ <u>\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ </u>	uantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 20%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and atta	ach 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:	
Stream originates in wooded area to north of ROW, flows through ROW and continues	south into wooded area, deeply cut chann
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE ID number. Include appropriate field data sheets from the Primary He	eadwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed?	served? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACI	H (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a na	
	accompliant of an out of a country









PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 33

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream

Facing Upstream



Stream 33

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 33

Date:

November 14, 2018

Description:

Intermittent

Modified Ephemeral Stream





20

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-018 RIVER BASIN Ohio DRAINAGE AREA (mi²)	.01
LENGTH OF STREAM REACH (ft) 125 LAT. 40.51074 LONG81.97777 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Ephemeral channel begins at edge of ROW	
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:	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] 0% SILT [3 pt] 60%	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts]	Max = 40
GRAVEL (2-64 mm) [9 pts]	15
SAND (<2 mm) [6 pts]	
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 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]	0
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 0	
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
> 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]	I WIAX-JU
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.61	5
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.61	5
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): This information <u>must</u> also be completed	5
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.61 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 ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	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) L R (Most Predominant per Bank) Wide >10m Moderate 5-10m Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.61 L R (Most Predominant per Bank) L R (Most Predominant per Bank) Moderate 5-10m Moderate 5-10m Urban or Industrial	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.61 This information must also be completed RIPARIAN WIDTH (meters): L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field	
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 Moderate 5-10m Residential, Park, New Field AVERAGE BANKFULL WIDTH (meters): 0.61 L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Creen	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.61 This information must also be completed RIPARIAN WIDTH (meters): L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field	
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 (Der Bank) Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field Open Pasture, Row Crown None Fenced Pasture Mining or Construction COMMENTS	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream Number 1	op
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 (Description of Display	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOODPLAIN QUALITY Residential, Park, New Field Fenced Pasture FLOODPLAIN QUALITY Mining or Construction COMMENTS FLOODPLAIN QUALITY Residential, Park, New Field Mining or Construction COMMENTS Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream NOTE: RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predomin	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH	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 (Most Predominant per Bank) Urban or Industrial Immature Forest, Shrub or Old Immature Forest, Shrub or Old Immature Forest, Shrub or Old Immature, Row Creen Immatur	op -

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes No QHEI Score (If Yes, At	tach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: UNT to Elkhorn Creek	Distance from Evaluated Stream
EWH Name: _ONT to Eikhorn Greek	Distance from Evaluated Stream0.35
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	ED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map	Page:NRCS Soil Map Stream Order
County: Township / City: Lee T	Township
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 70%	
N	. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
y	Conductivity (µmnos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain: Stream originates at edge of existing ROW and flows south into wooded area	
Stream originates at edge of existing NOW and nows south into wooded area	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections option	ial. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the P	•
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N)	Voucher? (Y/N)
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebr	rates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	IN
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation a	and a narrative description of the stream's location
5-1689-1017 EUR Schiedte	
CHN 51	
Forest A Court Forest	
1 6 5 5 11 15 15 15 15 15 15 15 15 15 15 15	
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FLOW	
the tourst	
Vestican SCBA-018 2PH + SUB A -015 SPH	
Schrift State of the State of t	





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 34

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 34

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 34

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





|--|

SITE NAME/LOCATION AEP Carrollton	Cable / Carrell Carrety Obia	
		01
SITE NUMBER_		01
LENGTH OF STREAM REACH (ft) 65 DATE 11/14/18 SCORER CBA/B		
NOTE: Complete All Items On This Fo	orm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / N MODIFICATIONS:	NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	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.	HHEI Metric
TYPE BLDR SLABS [16 pts]	PERCENT TYPE PERCENT 0% □ ✓ SILT [3 pt] 30%	Points
BOULDER (>256 mm) [16 pts]	LEAF PACK/WOODY DEBRIS [3 pts] 0%	Substrat
BEDROCK [16 pt]	0% FINE DETRITUS [3 pts] 0%	Max = 40
COBBLE (65-256 mm) [12 pts]	20% CLAY or HARDPAN [0 pt] 0% 0% 0%	
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]	25% MUCK [0 pts] 0%	16
, , , , ,	- Tittin Tolkie [o pto]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUE		
2. Maximum Pool Depth (Measure the	e maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
	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] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS OHWM depth = 1 in		
COMMENTS OTTAM depth = 1 h	MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the	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 - 13') [25 pts]	\(\sigma \cdot \cd	IVIAX-30
COMMENTS OHWM width = 2 fee	et AVERAGE BANKFULL WIDTH (meters): 0.61	5
COMMENTO	AVERAGE BANKI OLE WIDTH (Meters).	
RIPARIAN ZONE AND FLOOI	This information <u>must</u> also be completed DDPLAIN 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	
	Mature Forest, Wetland Conservation Tillage	
Wide >10m	Immature Forest Shrub or Old	
Wide >10m Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial	
	I II I Urban or Industrial	р
Moderate 5-10m	Field Urban or Industrial	р
Moderate 5-10m Narrow <5m	Field Orban or Industrial Residential, Park, New Field Open Pasture, Row Cro	p
Moderate 5-10m Narrow <5m None COMMENTS	Field Orban or Industrial Residential, Park, New Field Open Pasture, Row Cro	р
Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of E Stream Flowing	Field Orban or Industrial Residential, Park, New Field Open Pasture, Row Cro Fenced Pasture Mining or Construction Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	р
Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of E Stream Flowing Subsurface flow with isolated p	Field Orban or Industrial Residential, Park, New Field Open Pasture, Row Cro Fenced Pasture Mining or Construction Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	p
Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of E Stream Flowing Subsurface flow with isolated p COMMENTS	Field Residential, Park, New Field Penced Pasture Mining or Construction Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	р
Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of E Stream Flowing Subsurface flow with isolated p COMMENTS SINUOSITY (Number of bends	Field Residential, Park, New Field Penced Pasture Mining or Construction Wining or Construction Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) As per 61 m (200 ft) of channel) (Check ONLY one box):	p
Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of E Stream Flowing Subsurface flow with isolated p COMMENTS	Field Residential, Park, New Field Penced Pasture Mining or Construction Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	р
Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of E Stream Flowing Subsurface flow with isolated p COMMENTS SINUOSITY (Number of bends None 0.5	Field Residential, Park, New Field Penced Pasture Mining or Construction Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) ds per 61 m (200 ft) of channel) (Check ONLY one box): 1.0 3.0	р
Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of E Stream Flowing Subsurface flow with isolated p COMMENTS SINUOSITY (Number of bends None	Field Residential, Park, New Field Fenced Pasture Mining or Construction Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) As per 61 m (200 ft) of channel) (Check ONLY one box): 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0	

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: UNT to Elkhorn Creek	Distance from Evaluated Stream0.35
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Lee To	ownship
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 85%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. a	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:	
Stream originates at edge of existing ROW and flows into ephemeral stream S-C	BA-018
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Prish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology:	mary Headwater Habitat Assessment Manual) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation ar	d a narrative description of the stream's location
FLOW POLICE POLICE	





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 35

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 35

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 35

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream

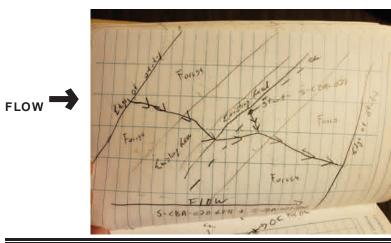




|--|

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-020 RIVER BASIN Ohio DRAINAGE AREA (mi²) 0.	01
LENGTH OF STREAM REACH (ft) 245 LAT. 40.50958 LONG81.97602 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Ephemeral channel spanning the width of the RC	W
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
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	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] 50%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] O LEAF PACK/WOODY DEBRIS [3 pts] O O O O O O O O O O O O O	Substrate
COBBLE (65-256 mm) [12 pts] 20% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ GRAVEL (2-64 mm) [9 pts] 30% ☐ MUCK [0 pts] 0% ☐ SAND (<2 mm) [6 pts]	15
Total of Percentages of 20 00% (A) Substrate Percentage 400% (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]	
	0
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters):	
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] COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.61	
COMMENTS OHWM WIGht = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.61	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 ☐ Moderate 5-10m ☐ Immature Forest, Shrub or Old ☐ Urban or Industrial	
Field Open Pasture Row Cro	n
Narrow <5m Residential, Park, New Field	,
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): None 1.0 2.0 3.0	
▼ 0.5	
	0 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Att	tach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name: UNT to Elkhorn Creek	Distance from Evaluated Stream 0.25
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	ED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map	Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Lee T	ownship
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 11/09/18	Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 65%	
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:	
Stream flows from wooded area across ROW	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	<u>'</u>
ID number. Include appropriate field data sheets from the P	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Salamanders Observed? (Y/N) Aquatic Macroinvertebra	Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
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 a	and a narrative description of the stream's location







STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 36

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 36

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 36

Date:

November 14, 2018

Description:

Ephemeral

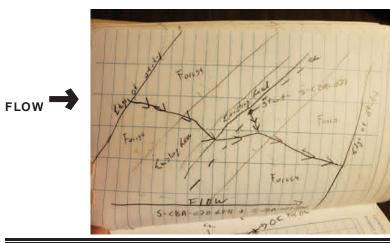
Modified Ephemeral Stream

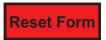




SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-020 RIVER BASIN Ohio DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) 40 LAT. 40.50953 LONG81.97597 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Ephemeral channel spanning the width of the I	ROW
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	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	Metri
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D	Substrat
COBBLE (65-256 mm) [12 pts] 20% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ O% ☐ ☐ ARTIFICIAL [3 pts] ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	19
Total of Percentages of Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock 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 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 = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	0
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 0	
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] ≤ 1.0 m (<=3' 3") [5 pts]	Bankful 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] > 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 OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 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 OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.61	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 OHWM width = 2 feet 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 Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) ANOTE: River Left (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 OHWM width = 2 feet This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Mature Forest, Shrub or Old Immature Forest Shrub or Old	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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters):	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] COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters):	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 OHWM width = 2 feet 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 Moderate 5-10 m None None COMMENTS Fenced Pasture Flow REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitter) Nore Moist Channel, isolated pools, no flow (Intermitter) Moist Channel, isolated pools, no flow (Intermitter)	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 OHWM width = 2 feet 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 5-10m Moderate 5-10m None None Residential, Park, New Field PLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitter) Note This information must also be completed AVERAGE BANKFULL WIDTH (meters): 0.61 AVERAGE BANKFULL WIDTH (meters): 0.61 L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Narrow <5m Residential, Park, New Field Open Pasture, Row Completed Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitter)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 4' 8") [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS OHWM width = 2 feet This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And Mature Forest, Wetland Wide >10m	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 OHWM width = 2 feet This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And FLOODPLAIN QUALITY L R (Per Bank) Wide >1.0 m (<=3' 3") [5 pts] 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.61 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And an all and a looking downstream And an all an all and a looking downstream And an all an all an all and a looking downstream And an all	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 4' 8") [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS OHWM width = 2 feet 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	Width Max=30

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: UNT to Elkhorn Creek	Distance from Evaluated Stream0.25
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Lee To	ownship
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/09/18	Quantity: 0.40
Photograph Information:Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
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:	
Entire stream reach contained to the existing ROW	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): 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) Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macroinvertebra	Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
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







PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 37

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 37

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 37

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





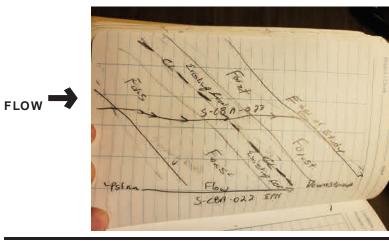
Primary Headwater Habitat Evaluation Form

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

17

SITE NAME/LOCATION AEP Carrollton-Gable / Carroll County, Ohio	
SITE NUMBER S-CBA-022 RIVER BASIN Ohio DRAINAGE AREA (mi²) 0.01	1
LENGTH OF STREAM REACH (ft) 277 LAT. 40.50859 LONG81.97468 RIVER CODE RIVER MILE	
DATE 11/14/18 SCORER CBA/BJM COMMENTS Ephemeral channel spanning the width of the ROV	N
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	tions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	/ERY
TYPE BLDR SLABS [16 pts] 0% 25% BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0% COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0% GRAVEL (2-64 mm) [9 pts] 20% MUCK [0 pts] 0% SAND (<2 mm) [6 pts]	HHEI Metric Points Substrate Max = 40
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 Max = 30
COMMENTS OHWM depth = 1 inch MAXIMUM POOL DEPTH (centimeters): 0	
	Danlefull
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
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
COMMENTS OHWM width = 2 feet AVERAGE BANKFULL WIDTH (meters): 0.92	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	
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 0.5 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	
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)	ft)

ADDITIONAL STREAM INFORMATION (This Information Must Als	o 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: UNT to Elkhorn Creek	Distance from Evaluated Stream 0.15
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Carroll Town	ship / City:Lee Township
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	11/09/18 Quantity: 0.40
Photograph Information: Upstream, downstream, and substrate	
Elevated Turbidity? (Y/N): N Canopy (% open): 45	%
Were samples collected for water chemistry? (Y/N): 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	t, please explain:
Entire stream reach contained to the existing ROW	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
· /	er collections optional. NOTE: all voucher samples must be labeled with the site ta sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Of Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aqua	Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	, , , , , , , , , , , , , , , , , , ,
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest fo	or site evaluation and a narrative description of the stream's location
7 W	
4 4 4	







STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 38

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 38

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 38

Date:

November 14, 2018

Description:

Ephemeral

Modified Ephemeral Stream





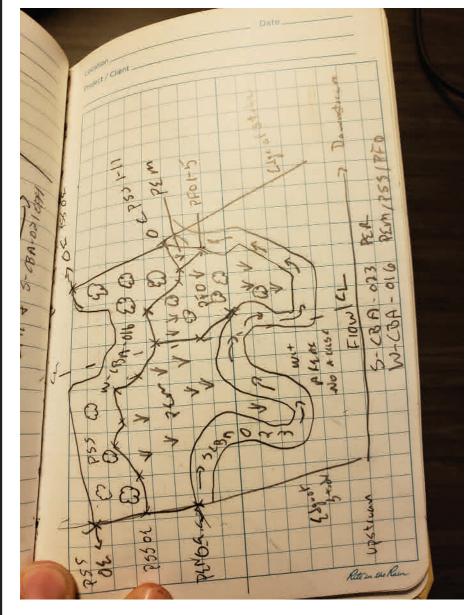
Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 48.5

Stream & Location: AEP Carrollton	-Gable / Carroll County	RM:	_6.5 _ <i>Dat</i>	e: 11/2318
S-CBA-023 (Elkhorn Creek)	Scorers Full Na	ame & Affiliation: CBA (AECOM)	ı	
River Code:	STORET #: Lat./ I	Long.: 40.507168 /8	0.972601	Office verified location
COBBLE [8] GRAVEL [7] SAND [6] SEDROCK [5] NUMBER OF BEST TYPES: 4 of Comments 2] INSTREAM COVER Indicate presequality; 2-More	strate TYPE BOXES; ery type present OTHER TYPES HARDPAN [4] DETRITUS [3] MUCK [2] SILT [2] ARTIFICIAL [0] (Score natural substrates; ignore or more [2] sludge from point-sources) or less [0] ence 0 to 3: 0-Absent; 1-Very small amoderate amounts, but not of highest qual	Check ONE (Or 2 ORIGIN LIMESTONE [1] TILLS [1] WETLANDS [0] HARDPAN [0] SANDSTONE [0] RIP/RAP [0] LACUSTURINE [0] SHALE [-1] COAL FINES [-2] Dunts or if more common of margity or in small amounts of highes	QUA HEAVY MODE NORM FREE MODE NORM NORM NONE	ALITY ([-2] RATE [-1] AL [0] [1] SISIVE [-2] RATE [-1] AL [0] [1] OUNT
quality; 3-Highest quality in moderate or gradiameter log that is stable, well developed UNDERCUT BANKS [1] OVERHANGING VEGETATION [1] SHALLOWS (IN SLOW WATER) [1] ROOTMATS [1] Comments	reater amounts (e.g., very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep, very large boulder rootwad in deep / fast water, or deep very large boulder rootwad in deep / fast water, or deep very large boulder rootwad in deep / fast water, or deep /	rs in deep or fast water, large well-defined, functional pools. IXBOWS, BACKWATERS [1]. QUATIC MACROPHYTES [1]. OGS OR WOODY DEBRIS [1].	EXTENSION MODERA	(Or 2 & average) VE >75% [11] TE 25-75% [7] 5-<25% [3] ABSENT <5% [1] Cover Maximum 20 6
3] CHANNEL MORPHOLOGY Check SINUOSITY DEVELOPMENT HIGH [4]		STABILITY HIGH [3] MODERATE [2] LOW [1]		Channel Maximum 15
EROSION WIDE > NONE / LITTLE [3] MODEF MODERATE [2] NARRO HEAVY / SEVERE [1] VERY N	RIAN WIDTH 50m [4] RATE 10-50m [3] W 5-10m [2] WARROW < 5m [1]	WAMP [3] COLD FIELD [2] ASTURE [1] Indic	CONSERVAT	Riparian C. F.
Comments 1.5+2.5+2.5 = 6.5				Maximum 10
Check ONE (<i>ONLY!</i>) Check OI	NNEL WIDTH NE (Or 2 & average) TH > RIFFLE WIDTH [2] TH = RIFFLE WIDTH [1] TH < RIFFLE WIDTH [0]	RENT VELOCITY neck ALL that apply iAL [-1] SLOW [1] ST [1] INTERSTITIAL [-1] INTERMITTENT [-2] IE [1] EDDIES [1] for reach - pools and riffles.	Second (circle one and	on Potential ry Contact ary Contact d comment on back) Pool / Current Maximum 12
of riffle-obligate species: RIFFLE DEPTH RUN □ BEST AREAS > 10cm [2] ■ MAXIMUI	Check ONE (Or 2 & ave Check ONE (Or 2 & ave DEPTH RIFFLE / RUN SU M > 50cm [2] STABLE (e.g., Cobbl M < 50cm [1] MOD. STABLE (e.g., UNSTABLE (e.g., Fine	erage). JBSTRATE RIFFLE / R e, Boulder) [2] Large Gravel) [1]	∐N	O RIFFLE [metric=0] DEDNESS Riffle /
DRAINAGE AREA	RY LOW - LOW [2-4] DDERATE [6-10] GH - VERY HIGH [10-6]	%POOL: 25 %GLII %RUN: 50 %RIFFI	=	Gradient Maximum 10

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc. Elkhorn Creek- existing ALU = EWH			MAINTENANCE Circle some & COMMENT EJ ISSUES FJ MEASUREMENTS	/ PRIVATE / BOTH / NA WWTP / CSO / NPDES / INDUSTRY ⊼ width HISTORIC / BOTH / NA HARDENED / URBAN / DIRT&GRIME ☑ 전 ADARK	YOUNG-SUCCESSION-OLD CONTAMINATED / LANDFILL CONTAMINATED / LANDFILL Max. depth	⋖	FA		NATURAL / WETLAND / STAGNANT	FANN / SOLF / LAWN / HOWE FLOOD CONTROL / DRAINAGE ATMOSPHERE / DATA PAUCITY
Comment RE: Reach consistency/ Is reach t Elkhorn Creek- existing ALU = EWH			BJAESTHETICS	UNISANCE ALGAE NUISANCE ALGAE NVASIVE MACROPHYTES ACTIVE /	EXCESS TURBIDITY YOUN		TRASH / LITTER	☐ NUISANCE ODOR☐ SLUDGE DEPOSITS	s/SSOs/OUTFALLS	CJ RECREATION AREA DEPTH INTO PLOOI PLOOI PLOOI STEED PAGE STEED PLOOI
AJ SAMPLED REACH Check ALL that apply	METHOD STAGE BOAT 1st-sample pass-2nd WADE HIGH	☐ CTHER ☐ NORMAL☐ ☐ OTHER ☐ LOW ☐ DISTANCE ☐ DRY ☐	□ 0.5 Km CLARITY	1stsample pass 2nd	☐ OTHER ■ 40-70 cm	□ > 70 cm/ CTB □ meters □ SECCHI DEPTH□) VAC	■ > 85%- OPEN pase pase pase pase pase pase pase pase	ļ	☐ 10%-<30%

Stream Drawing:





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 39

Date:

November 14, 2018

Description:

Perennial

Elkhorn Creek

OEPA Exceptional Warmwater Habitat

Facing Upstream



Stream 39

Date:

November 14, 2018

Description:

Perennial

Elkhorn Creek

OEPA Exceptional Warmwater Habitat





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 39

Date:

November 14, 2018

Description:

Perennial

Elkhorn Creek

OEPA Exceptional Warmwater Habitat





SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line	
hh-aeh-021219-02 SITE NUMBER 02 RIVER BASIN DRAINAGE AREA (mi²)	.04
LENGTH OF STREAM REACH (ft) 200 LAT. 40.50689 LONG80.97207 RIVER CODE RIVER MILE	
DATE 02/12/19 SCORER JTT, AEH COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ructions
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
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0% 0%	14
Total of Percentages of 40 000/ (A) Substrate Percentage (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 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]	15
COMMENTS MAXIMUM POOL DEPTH (Inches): 2.00	
3 RANK FULL WIDTH (Massured as the average of 3.4 massurements) (Check ONI V one box):	Rankfull
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] > 1.5 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] \(\leq 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): 1.50 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): 1.50	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): 1.50 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 Right (R) as looking downstream ANOTE: River Left (L) R (Most Predominant 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] > 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] > 1.5 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] > 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] > 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] > 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 □ RIPARIAN WIDTH □ RIPARIAN WIDTH □ RIPARIAN WIDTH □ Wide > 10 m □ Mature Forest, Wetland □ Wide > 10 m □ Mature Forest, Wetland □ Woderate 5-10 m □ Moderate 5-10 m □ Residential, Park, New Field □ Open Pasture, Row Cr □ 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)	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 Predominant per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS PLOW 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 PLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream to the field with the field Conservation Tillage RIPARIAN WIDTH FLOODPLAIN QUALITY Width (Per Bank) L R (Most Predominant per Bank)	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 Moderate 5-10 m This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field V Narrow <5m Residential, Park, New Field Open Pasture, Row Cr 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) (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] > 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 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 SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3	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 Moderate 5-10 m This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field V Narrow <5m Residential, Park, New Field Open Pasture, Row Cr 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) (Check ONLY one box): None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	Width Max=30

DDITIONAL STREAM INFORMATION (This Information Must Also be Completed	<u>)):</u>
QHEI PERFORMED? - Yes V 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 Distance from Evaluated Stream
_	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	
SGS Quadrangle Name: Bergholz NRCS Soil Ma	
ounty: Carroll Township / City: Lee	<u>'</u>
MISCELLANEOUS	
ase Flow Conditions? (Y/N): Y Date of last precipitation: 02/11/19	Quantity: 0.16
hotograph Information:	
levated Turbidity? (Y/N): N Canopy (% open): 15%	
/ere samples collected for water chemistry? (Y/N): N (Note lab sample no. or i	id. and attach results) Lab Number:
eld Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
the sampling reach representative of the stream (Y/N) If not, please explain:	
dditional comments/description of pollution impacts:	
overall Stability of BOTH Stream Banks (check one): Stable Mode	erately Stable Unstable
ID number. Include appropriate field data sheets from the sh Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	
TLine	
LOW - OF OF OF	wetland and stream
PHWH Form Page - 2	

Reset Form

Save as pdf



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 40

Date:

February 12, 2019

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 40

Date:

February 12, 2019

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 40

Date:

February 12, 2019

Description:

Intermittent

Small Drainage Warmwater Stream



Stream 41 **Ephemeral Stream**



	25	
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SITE NAME/LOCATION ALP CARROLLON-GABLE 138 KV Transmission Line	
hh-aeh-021219-01 SITE NUMBER 01 RIVER BASIN DRAINAGE AREA (mi²) 0.01	
LENGTH OF STREAM REACH (ft) 200 LAT. 40.50476 LONG80.96893 RIVER CODE RIVER MILE	
DATE 02/12/19 SCORER JTT, AEH COMMENTS ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	tions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	ERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
TYPE PERCENT TYPE PERCENT	HHEI Metric
□ □ BLDR SLABS [16 pts]	Points
LILL BEDROCK 116 btl U% LILL FINE DETRITUS 13 btsl U/6	ubstrate
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% ARTIFICIAL [3 pts] O%	15
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: 3	
	ool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	WILLY OU
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH (Inches): 1.00	
	Damlefull
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
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.50	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 R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Wide >10m	
Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Open Pasture Pow Crop	
Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m Mature Forest, Wetland Open Pasture, Row Crop	
Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Open Pasture Pow Crop	
Wide >10m	
Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field V Narrow <5m None Fenced Pasture Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction COMMENTS	
Wide >10m	
Wide >10m	

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)	
WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream
	Distance from Evaluated Stream
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Bergholz County: Carroll Towns	NRCS Soil Map Page: NRCS Soil Map Stream Order
County Towns	ship / City:
MISCELLANEOUS	20/44/42
Base Flow Conditions? (Y/N): Y Date of last precipitation:	02/11/19 Quantity:0.16
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 10°	%
Were samples collected for water chemistry? (Y/N): N (Note lal	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 sit 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
TLine	7 9 9



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 41

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 41

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 41

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream





SITE NAME/LOCATION ARP CARROLLON-GABLE 138 KV Transmission Line	
hh-aeh-021119-03 SITE NUMBER 03 RIVER BASIN DRAINAGE AREA (mi²)	.19
LENGTH OF STREAM REACH (ft) 200 LAT. 40.49777 LONG80.95967 RIVER CODE RIVER MILE	
DATE 02/11/19 SCORER JTT, AEH COMMENTS perennial; Cox Creek (WWH)	
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 (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] 25%	Metric Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt]	Max = 40
✓ GRAVEL (2-64 mm) [9 pts] 30% MUCK [0 pts] 0% SAND (<2 mm) [6 pts]	20
Total of Percentages of 10.00% (A) Substrate Percentage 10.00% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 Check 100 / 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): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Pool Depth Max = 30
> 22.5 - 30 cm [30 pts]	20
COMMENTS MAXIMUM POOL DEPTH (Inches): 15.00	
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
> 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] COMMENTS AVERAGE BANKFULL WIDTH (Feet): 3.00	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 ☆	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	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 Wide >10 m Mature Forest, Wetland Conservation Tillage	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Wide >10m Mature Forest, Wetland Narrow <5m Narrow <5m Narrow <5m L R (Seidential, Park, New Field Narrow Field RIPARIAN Wide → 10m Residential, Park, New Field RIPARIAN Wide → 10m Residential, Park, New Field RIPARIAN Wide → 10m Residential, Park, New Field AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BANKFULL WIDTH (Feet	Max=30
Solution	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Narrow <5m None S 1.0 m (<=3' 3") [5 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 3.00 AVERAGE BANKFULL WIDTH (5
3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	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:	_ Distance from Evaluated Stream _
CWH Name: _	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream _
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Amsterdam	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Carroll Towns	ship / City:Lee
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N _ Date of last precipitation:	02/10/19 Quantity: 2.10
Photograph Information: 3 photos, upstream, downstream, substr	ate
Elevated Turbidity? (Y/N): N Canopy (% open): 40°	%
Were samples collected for water chemistry? (Y/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) 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) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This must be completed):
	· —
TLine	wetland
FLOW	
9 7 7	



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 42

Date:

February 11, 2019

Description:

Perennial

Cox Creek

OEPA Warmwater Habitat

Facing Upstream



Stream 42

Date:

February 11, 2019

Description:

Perennial

Cox Creek

OEPA Warmwater Habitat





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 42

Date:

February 11, 2019

Description:

Perennial

Cox Creek

OEPA Warmwater

Habitat





SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line hh-aeh-021119-02 SITE NUMBER 02 RIVER BASIN DRAINAGE AREA (mi²) 0.	
	07
OTTE ROWDER AND A STATE OF THE A	07
LENGTH OF STREAM REACH (ft) 200 LAT. 40.49523 LONG80.95588 RIVER CODE RIVER MILE	
DATE 02/11/19 SCORER JTT, 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
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 TYPE PERCENT □ □ □ BLDR SLABS [16 pts] 0% □ □ SILT [3 pt] 50%	Points
BOULDER (>256 mm) [16 pts]	
BEDROCK [16 pt]	Substrate Max = 40
COBBLE (65-256 mm) [12 pts]	
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	19
Table 6 December of	
Bldr Slabs, Boulder, Cobble, Bedrock Check 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	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 = 30
> 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 MAXIMUM POOL DEPTH (Inches): 3.00	
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]	Max=30
0.00	_
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 FLOODPLAIN QUALITY	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Urban or Industrial	
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 Field Open Pasture Row Cro	р
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Narrow <5m REDODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Urban or Industrial Open Pasture, Row Cro	p
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 Field Open Pasture Row Cro	р
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOODPLAIN QUALITY L R (Most Predominant per Bank) L	p
RIPARIAN WIDTH (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) PLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction COMMENTS Moist Channel, isolated pools, no flow (Intermittent)	р
RIPARIAN WIDTH (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) FLOODPLAIN QUALITY L R (Most Predominant per Bank) 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)	р
RIPARIAN WIDTH (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Wining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS FLOW RECIME (At Time of Industrial) COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	р
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Wetland Woderate 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 SINUOSITY (Number of bends per 61 m (200 ft) of channel) CCheck ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	р
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old	р
RIPARIAN WIDTH R (Per Bank)	р
RIPARIAN WIDTH (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cro 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 None COMMENTS CCHeck ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) None CCHeck ONLY one box): None 3.0	

DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: EWH Name: MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH GS Quadrangle Name: Amsterdam NRCS Soil Map	Distance from Di	rom Evaluated Strea om Evaluated Strea om Evaluated Strea	m_	
CWH Name: EWH Name: MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH GS Quadrangle Name: Amsterdam NRCS Soil Map	Distance from Di	om Evaluated Strea om Evaluated Strea	m_	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH GS Quadrangle Name: Amsterdam NRCS Soil Map			m	
GS Quadrangle Name: Amsterdam NRCS Soil Map	ED AREA. CLE			
		ARLY MARK THE S	ITE LOCATION	ON
	Page:	NRCS Soil Map St	tream Order	
unty: Carroll Township / City: Lee				
MISCELLANEOUS				
se Flow Conditions? (Y/N):N Date of last precipitation:02/10/19	Quantity	2.10		
otograph Information: 3 photos, upstream, downstream, substrate				
evated Turbidity? (Y/N): N Canopy (% open): 45%				
ere samples collected for water chemistry? (Y/N):	d, and attach res	sults) Lab Number:		
ld Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)		ductivity (µmhos/cm)	
Y			r 	
he sampling reach representative of the stream (Y/N) If not, please explain:_				
ditional comments/description of pollution impacts:				
rerall Stability of BOTH Stream Banks (check one): Stable Moder	rately Stable	Uns	table	
ID number. Include appropriate field data sheets from the find hobserved? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinverteb mments Regarding Biology:	N Voucher	? (Y/N) N	ner? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	•			
Include important landmarks and other features of interest for site evaluation	and a narrative	description of the	stream's loc	cation
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999			100)(<u>C</u>

Reset Form

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October 24, 2002 Revision



PHOTOGRAPHIC RECORD STREAMS

Client Name: Site Location:

Gable-Carrollton 138 kV Tranmission Line Project

Project No.

AEP

60582598

Stream 43

Date:

February 11, 2019

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 43

Date:

February 11, 2019

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 43

Date:

February 11, 2019

Description:

Intermittent

Small Drainage Warmwater Stream



Stream 44

Ephemeral Stre



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SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line	
hh-aeh-021119-01 SITE NUMBER 01 RIVER BASIN DRAINAGE AREA (mi²) 0.0	07
LENGTH OF STREAM REACH (ft) 200 LAT. 40.49213 LONG80.95098 RIVER CODE RIVER MILE	
DATE 02/11/19 SCORER JTT, AEH COMMENTS ephemeral	
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 RECOMMODIFICATIONS:	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. TYPE PERCENT TYPE PERCENT	HHEI Metric
□ □ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] O LEAF PACK/WOODY DEBRIS [3 pts] O O O O O O O O O O O O O	Substrate
COBBLE (65-256 mm) [12 pts] 15% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 10% MUCK [0 pts] 0%	10
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
, , , , , , , , , , , , , , , , , , , ,	Pool Depti
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
	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] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTSAVERAGE BANKFULL WIDTH (Feet): 1.50	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 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	
FIEID Pasture Row Cron)
Narrow <5m Residential, Park, New Field Mining or Construction	
COMMENTS Periced Pasture Minning of Constituction	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated pools (Interstitial) COMMENTS current precip	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONI Y 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 ☐ 1.0 ☐ 2.0 ☐ 3.0) ff)

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: Distance from Evaluated Stream			
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION			
USGS Quadrangle Name: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order			
County: Carroll Township / City: Lee			
MISCELLANEOUS			
Base Flow Conditions? (Y/N):_Y Date of last precipitation:			
Photograph Information: 3 photos, upstream, downstream, substrate			
Elevated Turbidity? (Y/N): N Canopy (% open): 20%			
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			
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:			
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):			
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			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location side channel			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location side channel			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location side channel Forest			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location side channel Forest			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location side channel Forest			
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location side channel Forest			



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 44

Date:

February 11, 2019

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 44

Date:

February 11, 2019

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 44

Date:

February 11, 2019

Description:

Ephemeral

Ephemeral Stream





ChieFP Primary Headwater Habitat Evaluation Form

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SITE NAME/LOCATION Carrollton_Gable		
	3	
Field ID: hh-cms-021219-01 SITE NUMBER	RIVER BASIN Ohio River DRAINAGE AREA (mi²)	.00
LENGTH OF STREAM REACH (ft) 81	LAT. 40.48240 LONG80.94170 RIVER CODE RIVER MILE	
DATE 02/12/19 SCORER CMS, RM		
NOTE: Complete All Items On This Form	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NA	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	OVFRY
MODIFICATIONS: Ephemeral		
	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
,	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] 0%	Points
BOULDER (>256 mm) [16 pts]	5% LEAF PACK/WOODY DEBRIS [3 pts] 0%	
BEDROCK [16 pt]	FINE DETRITUS [3 pts]	Substrat Max = 40
COBBLE (65-256 mm) [12 pts]	20% CLAY or HARDPAN [0 pt]	
GRAVEL (2-64 mm) [9 pts]	15% MUCK [0 pts] 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	33
SAND (<2 mm) [6 pts]	20% ARTIFICIAL [3 pts] 0%	
Total of Percentages of	65.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	CHECK	
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 28 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the m	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
	d culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	15
001111111111111111111111111111111111111	200	
COMMENTS	MAXIMUM POOL DEPTH (Inches): 2.00	
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]	
` / f · i · f		Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	✓ ≤ 1.0 m (<=3' 3") [5 pts]	
` / f · i · f		Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	✓ ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (Feet): 1.50	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]		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]		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 RIPARIAN ZONE AND FLOODE	AVERAGE BANKFULL WIDTH (Feet): 1.50 This information must also be completed PLAIN QUALITY \$NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\$	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 RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH	AVERAGE BANKFULL WIDTH (Feet): 1.50 This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY	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 RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank)	AVERAGE BANKFULL WIDTH (Feet): 1.50 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) L R	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 RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m	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) L R Mature Forest, Wetland Conservation Tillage	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 RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank)	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 Immature Forest, Shrub or Old Field Creet): 1.50 L R Conservation Tillage	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 RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m	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 Immature Forest, Shrub or Old Lirban or Industrial	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	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) L R Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field Onen Pasture Row Creen.	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 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 ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY L R (Most Predominant per Bank) ✓ Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Open Pasture, Row Creen	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	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) Whature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture AVERAGE BANKFULL WIDTH (Feet): 1.50 L R Conservation Tillage Urban or Industrial Open Pasture, Row Creen Mining or Construction	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	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 Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Open Pasture, Row Creen	5
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation of Evaluation Subsurface flow with isolated poor	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) Whature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Mining or Construction Aduation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	5
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation of Evaluation Stream Flowing)	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) Whature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Mining or Construction Aduation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	5
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation of Community Subsurface flow with isolated poor COMMENTS)	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) Whature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Mining or Construction Aduation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	5
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends pone)	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) L R Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Imm	5
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation of Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends processors)	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 Immature Forest, Wetland Residential, Park, New Field Residential, Park, New Field Residential, Park, New Field Mining or Construction Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	5
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends process) None O.5 STREAM GRADIENT ESTIMATE	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 Immature Forest, Shrub or Old Urban or Industrial Open Pasture, Row Credit Field Open Pasture, Row Credit Fenced Pasture Mining or Construction Moist Channel, isolated pools, no flow (Intermittent Dry 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	5
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation Subsurface flow with isolated poor COMMENTS SINUOSITY (Number of bends process) None O.5	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) L R Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Imm	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: Elk Lick Distance from Evaluated Stream 6,750.00 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: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order 1
County: Carroll Township / City: Lee
MISCELLANEOUS
Base Flow Conditions? (Y/N):_N Date of last precipitation:
Photograph Information: upstream, downstream, substrate
Elevated Turbidity? (Y/N): Y Canopy (% open): 20%
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:
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW TUSK TO THE STATE OF THE S
COBBLE DO WATERFALL & WOODY RED REPRESENT STREET
BEDROCK 33 RIFFLE & DEBRIS



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 45

Date:

February 12, 2019

Description:

Intermittent

Small Drainage Warmwater

Facing Upstream



Stream 45

Date:

February 12, 2019

Description:

Intermittent

Small Drainage Warmwater





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 45

Date:

February 12, 2019

Description:

Intermittent

Small Drainage Warmwater



Stream 46



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SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line			
Field ID: hh-cms-021219-02 SITE NUMBER RIVER BASIN Ohio River DRAINAGE AREA (mi²)	.00		
LENGTH OF STREAM REACH (ft) 59 LAT. 40.47930 LONG80.93870 RIVER CODE RIVER MILE			
DATE 02/12/19 SCORER CMS, RM COMMENTS			
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 RECOVERY MODIFICATIONS: Ephemeral			
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		
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt]	Max = 40		
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0% 0%	15		
Total of Percentages of Annual (A) Substrate Percentage (B)	A + B		
Bldr Slabs, Boulder, Cobble, Bedrock Check	АТВ		
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 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]	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		
> 4.0 meters (> 13') [30 pts] > 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] > 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]	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): 1.50	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): 1.50 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 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 ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Wide >10m Conservation Tillage	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 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	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 ↑ Most Predominant per Bank) RIPARIAN Wide > 10m Wide > 10m Mature Forest, Wetland Narrow < 5m Narrow < 5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Noist 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 ANOTE: River Left (L) and Right (R) as looking downstream And FLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Wide >10 m Wide >10 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) COMMENTS > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] 5 1.0 m (<=3' 3") [5 pts] 6 1.5 m (<=3' 3") [5 pts] 6 1.5 m (<=3' 3") [5 pts] 7 1.0 m (<=3' 3") [5 pts] 8 1.0 m (<=3' 3") [5 pts] 9 1.0 m (<=3' 3") [5 pts] 1.5 m (<=3' 3") [5 pts] 1.5 m (<=3' 3") [5 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 2 1.0 m (<=3' 3" - 4' 8") [15 pts] 3.0 m (<=3' 3" - 4' 8") [15 pts] 4 1.5 m (<=3' 3" - 4' 8") [15 pts] 5 1.0 m (<=3' 3" - 4' 8") [15 pts] 5 1.0 m (<=3' 3" - 4' 8") [15 pts] 6 1.5 m (<=3' 3" - 4' 8") [15 pts] 6 1.5 m (<=3' 3" - 4' 8") [15 pts] 6 1.5 m (<=3' 3" - 4' 8") [15 pts] 7 1.5 m (<=3' 3" - 4' 8") [15 pts] 8 1.5 m (<=3' 3" - 4' 8") [15 pts] 9 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" - 4' 8") [15 pts] 1.5 m (<=3' 3" -	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 Wining 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) (Check ONLY one box): None 1.0 Check ONLY one box): Check ONLY one box): Check ONLY one box): None	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 Wide >10 m Wide >10 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) 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 **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Wide >10m Wide >10m Residential, Park, New Field Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) 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 1.0 3.0	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: Elk Lick Distance from Evaluated Stream 6,100.00 CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream	-
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order 1	
County: Carroll Township / City: Lee	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N Date of last precipitation: 02/12/19 Quantity: 1.00	
Photograph Information: upstream, downstream, substrate	
Elevated Turbidity? (Y/N): Y Canopy (% open): 20%	
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:	_
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N)	site
Progs of Tadpoles Observed? (17/N) N Aquatic Macioinvertebrates Observed? (17/N) N Voucher? (17/N)	
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	
33 RIFFLE WOODY DEBRIS	



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 46

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 46

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 46

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream





SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Lin	ne	
Field ID: hh-cms-021219-04 SITE NUMBER RIVER BASIN Ohio I		
	RIVER CODE RIVER MILE	
DATE 02/12/19 SCORER CMS, RM COMMENTS		
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Ma	nual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: Ephemeral		
SUBSTRATE (Estimate percent of every type of substrate present. Check (Substrate present)	·	
(Max of 32). Add total number of significant substrate types found (Max of 8). F TYPE PERCENT TYPE	PERCENT Metric	
BLDR SLABS [16 pts]	K/WOODY DEBRIS [3 pts] Points	
	SITUS [3 pts] 0% Substrate	
	ARDPAN [0 pt] 34% Max = 40	
☐ GRAVEL (2-64 mm) [9 pts] ☐ 33% ☐ MUCK [0 pts] ☐ SAND (<2 mm) [6 pts] ☐ 0% ☐ ARTIFICIAL	·	
T. I. CD	ontogo (B)	
Bldr Slabs, Boulder, Cobble, Bedrock	100%	
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 me evaluation. Avoid plunge pools from road culverts or storm water pipes) (Che		
> 30 centimeters [20 pts] > 5 cm - 1	0 cm [15 pts]	
> 22.5 - 30 cm [30 pts] < 5 cm [5 > 10 - 22.5 cm [25 pts] NO WATE	pts] ER OR MOIST CHANNEL [0 pts]	
COMMENTS MAX	XIMUM POOL DEPTH (Inches): 2.00	
	(mones).	
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 - 4.0 m (> 9' 7" - 13') [25 pts]		
> 4.0 meters (> 13') [30 pts] > 1.0 m -	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 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]	(Check ONLY one box): 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVE	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] =3' 3") [5 pts] ERAGE BANKFULL WIDTH (Feet): [Total Content of the co	
> 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 AVE	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 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] COMMENTS This information must also RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣ NOTE: River Letter RIPARIAN WIDTH FLOODPLAIN QUALITY	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet):	
> 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 RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per B	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet):	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (< 1.0 m (< 1.0 m) ≤ 1.0 m (< 1.0 m)	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): be completed eft (L) and Right (R) as looking downstream ☆ ank) L R Conservation Tillage	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (< 1.0 m (< 1.0 m) ≤ 1.0 m (< 1.0 m)	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): be completed eft (L) and Right (R) as looking downstream ank) L R Conservation Tillage or Old Urban or Industrial	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (< 1.0 m (< 1.0 m) ≤ 1.0 m (< 1.0 m)	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L Conservation Tillage or Old Urban or Industrial field Open Pasture, Row Crop	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (< 1.0 m (< 1.0 m) ≤ 1.0 m (< 1.0 m)	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): be completed eft (L) and Right (R) as looking downstream ank) L R Conservation Tillage or Old Urban or Industrial	
> 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	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L Conservation Tillage or Old Urban or Industrial field Open Pasture, Row 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 RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per B Wide >10m Wide >10m Moderate 5-10m Residential, Park, New Fired Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L Conservation Tillage or Old Urban or Industrial open Pasture, Row Crop Mining or Construction bist Channel, isolated pools, no flow (Intermittent)	
> 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 RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per B Wide >10m Wide >10m Mature Forest, Wetland Immature Forest, Shrub of Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L Conservation Tillage or Old Urban or Industrial field Open Pasture, Row Crop Mining or Construction	
> 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 RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per B Wide >10m Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial)	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L Conservation Tillage or Old Urban or Industrial open Pasture, Row Crop Mining or Construction Dist Channel, isolated pools, no flow (Intermittent) y channel, no water (Ephemeral)	
> 4.0 meters (> 13') [30 pts] > 1.0 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): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L Conservation Tillage or Old Urban or Industrial open Pasture, Row Crop Mining or Construction Dist Channel, isolated pools, no flow (Intermittent) by channel, no water (Ephemeral)	
> 4.0 meters (> 13') [30 pts] > 1.0 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): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L R Conservation Tillage or Old Urban or Industrial open Pasture, Row Crop Mining or Construction Dist Channel, isolated pools, no flow (Intermittent) by channel, no water (Ephemeral)	
> 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 RIPARIAN ZONE AND FLOODPLAIN QUALITY ∴ NOTE: River Le RIPARIAN WIDTH ∴ R (Per Bank) ∴ Wide >10m ∴ Mature Forest, Wetland ∴ Moderate 5-10m ∴ Mature Forest, Shrub of Field ∴ Narrow <5m ∴ 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 OND None 1.0 2.0 2.5 STREAM GRADIENT ESTIMATE	(Check ONLY one box): 1.5 m (> 3' 3" - 4' 8") [15 pts] ERAGE BANKFULL WIDTH (Feet): 1.50 be completed eft (L) and Right (R) as looking downstream ank) L Conservation Tillage or Old Urban or Industrial open Pasture, Row Crop Mining or Construction Dist Channel, isolated pools, no flow (Intermittent) by channel, no water (Ephemeral)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be	pe Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Elk Lick CWH Name: EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENT	IRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Amsterdam	NRCS Soil Map Page: NRCS Soil Map Stream Order 1
County: Carroll Townshi	p / City:Lee
MISCELLANEOUS Base Flow Conditions? (Y/N): N Date of last precipitation:	02/12/19 Quantity: 1.00
Photograph Information: upstream, downstream, substrate	
Elevated Turbidity? (Y/N): Y Canopy (% open): 20%	
Were samples collected for water chemistry? (Y/N): N (Note lab s	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, p	lease explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data s Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed	collections optional. NOTE: all voucher samples must be labeled with the situation of the Primary Headwater Habitat Assessment Manual) served? (Y/N) N Voucher? (Y/N) N Voucher
DRAWING AND NARRATIVE DESCRIPTION O	OF STREAM REACH (This <u>must</u> be completed):
	Site evaluation and a narrative description of the stream's location 33 RIFFLE WOODY DEBRIS



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 47

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 47

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 47

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream





42

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line	
Field ID: hh-cms-021219-03 SITE NUMBER RIVER BASIN Ohio River DRAINAGE AREA (mi²)	0.04
LENGTH OF STREAM REACH (ft) 556 LAT. 40.47930 LONG80.93870 RIVER CODE RIVER MILE	
DATE 02/12/19 SCORER CMS, RM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO R MODIFICATIONS: intermittent	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]	Points
BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts]	Max = 40
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0%	12
Total of Percentages of Page (A) Substitute Percentage (B)	1.5
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 evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	25
COMMENTS MAXIMUM POOL DEPTH (Inches): 4.00	7
COMINITATION FOOL BEFTH (INChes): 4.30	
	<u> </u>
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]	<u> </u>
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]	Bankful 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]	Bankful 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] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Bankful 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): 3.00	Bankful 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): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	Bankful 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): 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ARIPARIAN WIDTH FLOODPLAIN QUALITY	Bankful 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): 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) L R (Most Predominant per Bank) Wide >10m Conservation Tillage	Bankful 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): 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 FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	Bankful 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 ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Wide >10m Wide >10m Wide >10m Woderate 5-10m Woderate 5-10m Woderate 5-10m Check ONLY one box): > 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] > 1.0 m (<=3' 4" 8") [15 pts] > 1.0 m (<=3' 8") [15 pts] AVERAGE BANKFULL WIDTH (Feet): 3.00 Urban or Industrial	Bankful 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 >10 m Wide >10 m Wide >10 m Wide >10 m Immature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field Open Pasture, Row None Residential, Park, New Field Open Pasture, Row Mining or Construction	Bankful 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): 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 Wide >10m Mature Forest, Wetland Wide >10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row	Bankful 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 **NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH L R (Most Predominant per Bank) Wide >10 m Wide >10 m Mature Forest, Wetland Open Pasture, Row Narrow <5 m Residential, Park, New Field Open Pasture, Row None Residential, Park, New Field Mining or Constructic COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Bankful Width Max=30 5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 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 (Most	Bankful Width Max=30 5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 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 (Most Predominant per Bank) Urban or Industrial Wide >10m Mature Forest, Wetland Conservation Tillage V Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row None Fenced Pasture Mining or Constructic COMMENTS 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 (Intermitted Dry channel, no water (Ephemeral))	Bankful Width Max=30 5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 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 (Most	Bankful Width Max=30 5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 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 >10 m (Most Predominant per Bank) Wide >10 m (Most Prest, Wetland) Moderate 5-10 m Immature Forest, Shrub or Old Urban or Industrial Narrow <5 m Residential, Park, New Field Open Pasture, Row None Fenced Pasture Mining or Constructic COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) 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):	Bankful Width Max=30 5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 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 >10m Wide >10m Wide >10m Wide >10m Residential, Park, New Field Narrow <5m 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) 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 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	Bankful Width Max=30 5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Att	ach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)	_	
WWH Name: Elk Lick	Distance from Evaluated Stream	5,500.00
EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE		
USGS Quadrangle Name: Amsterdam NRCS Soil Map	Page: NRCS Soil Map Stream	n Order1
County: Carroll Township / City: Lee		
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_N Date of last precipitation:_ 02/12/19	Quantity: 1.00	
Photograph Information: upstream, downstream, substrate		
Elevated Turbidity? (Y/N): Y Canopy (% open): 20%		
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)	
s the sampling reach representative of the stream (Y/N)		
, ,		
Additional comments/description of pollution impacts:		
additional comments/accomption of politicion impacts.		
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections options ID number. Include appropriate field data sheets from the P Voucher? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebra Comments Regarding Biology:	rimary Headwater Habitat Assessment M Voucher? (Y/N)	anual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM Include important landmarks and other features of interest for site evaluation a		-
BB BEDROCK & RIFELS DEBRIS		and a
WN 3380		000
HEADNATERS FLOW	(233)	
333	3373	, +



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 48

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 48

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 48

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream





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

	21
ı	

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line	
Field ID: hh-cms-021219-05 SITE NUMBER RIVER BASIN Ohio River DRAINAGE AREA (mi²)	.04
LENGTH OF STREAM REACH (ft) 100 LAT. 40.47740 LONG80.93790 RIVER CODE RIVER MILE	
DATE 02/12/19 SCORER CMS, RM COMMENTS	
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
MODIFICATIONS: Ephemeral	
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 TYPE PERCENT □ □ □ BLDR SLABS [16 pts] 0% □ □ SILT [3 pt] 0%	Points
BOULDER (>256 mm) [16 pts]	Substrate
□ □ BEDROCK [16 pt] □ □ FINE DETRITUS [3 pts] □ 0% □ □ CLAY or HARDPAN [0 pt] 70%	Max = 40
GRAVEL (2-64 mm) [9 pts]	11
SAND (<2 mm) [6 pts]	ш.
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) Check	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 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 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]	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 (<=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): 1.00	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 R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m V Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Field — Open Pasture Row Crr	р
None Residential, Park, New Field Mining or Construction	
COMMENTS COMMENTS	-
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	1
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 ft)

ADDITIONAL STREAM IN	FORMATION (This Information Must Als	o be Completed):			
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)					
DOWNSTREAM	DESIGNATED USE(S)				
WWH Name: Elk Lick			_ Distance from Evaluated S	_	
CWH Name:EWH Name:			Distance from Evaluated States Distance from Evaluated States		
	A CUI A CODITO O E MADO INOLUDINO TUE E	NTIDE WATEROUSE	•		
	ACH COPIES OF MAPS, INCLUDING THE E]			
USGS Quadrangle Name:_	Amsterdam	NRCS Soil Map Pa	age: NRCS Soil Ma	p Stream Order1	
County: Carroll		ship / City: Lee			
MISCELLANEOU	us				
Base Flow Conditions? (Y/I	N):_N Date of last precipitation:_	02/12/19	Quantity: 1.00	_	
Photograph Information:	upstream, downstream, substrate				
Elevated Turbidity? (Y/N):	Y Canopy (% open): 80	%			
Were samples collected for	r water chemistry? (Y/N):	b sample no. or id. a	nd attach results) Lab Numb	er:	
Field Measures: Temp (Conductivity (µmhos		
•	Υ	, please explain:	conductivity (printed)	Jiii)	
is the sampling reach repre	in not	, piease expiairi			
Additional comments/descr	ription of pollution impacts:				
Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Observed Comments Regarding Biology	(If Yes, Record all observations. Voucher ID number. Include appropriate field dated and Voucher? (Y/N) N Salamanders (ed? (Y/N) N Voucher? (Y/N) N Aqua	a sheets from the Prin	mary Headwater Habitat Asses Voucher? (Y/N)		
DRAWING	AND NARRATIVE DESCRIPTION	OF STREAM R	EACH (This <u>must</u> be o	completed):	
Include important la	ndmarks and other features of interest fo	r site evaluation and	d a narrative description of	the stream's location	
N	FLOW	FORE	5720	33 RIPFLE	
FLOW →	\rightarrow				
	(3330)3	3 3 3	3		
3		AZ,	FORESTED		



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 49

Date:

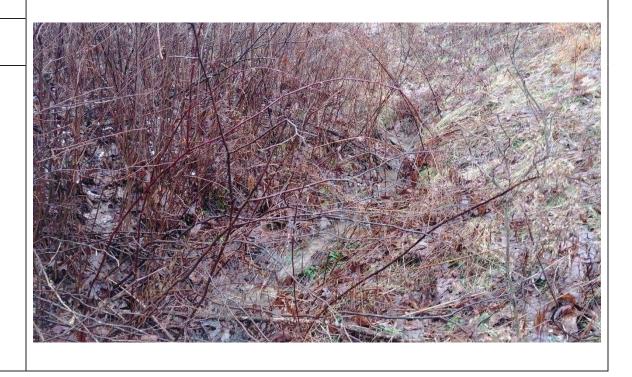
February 12, 2019

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 49

Date:

February 12, 2019

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 49

Date:

February 12, 2019

Description:

Ephemeral

Modified Ephemeral Stream





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

32

Field ID: hh-cms-021219-06 SITE NUMBER RIVER BASIN Ohio River DRAINAGE AREA (mi²)	.01				
LENGTH OF STREAM REACH (ft) 100 LAT. 40.47670 LONG80.93740 RIVER CODE RIVER MILE					
DATE 02/12/19 SCORER CMS, RM COMMENTS					
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions					
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC MODIFICATIONS: Ephemeral	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]	Points				
BOULDER (>256 mm) [16 pts]	Substrate				
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ CLAY or HARDPAN [0 pt] 34%	Max = 40				
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 0% ARTIFICIAL (3 pts)	12				
Table (Day of the Control of the Con					
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	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 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]	15				
	15				
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] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull 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]					
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.50	5				
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.50					
4.50					
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					
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 Conservation Tillage					
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 (Most Predominant per Bank) L R					
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 (R) and River	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 Immature Forest, Shrub or Old Urban or Industrial Narrow <5m Residential, Park, New Field ✓ ✓ Open Pasture, Row Cro	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 Moderate 5-10m Immature Forest, Shrub or Old Field Urban or Industrial Narrow <5m Residential, Park, New Field ✓ ✓ Open Pasture, Row Cro	5				
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 (Description of Description of De	5				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature	5				
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) Department of the process, Wetland Department of the process, Shrub or Old Department of the process, Shrub or Old Department of the process, Shrub or Old Department of the process of the	5				
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 Immature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5m Residential, Park, New Field Narrow <5m Residential, Park, New Field Topen 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):	5				
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 Immature Forest, Shrub or Old Tield 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 Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	5				
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream NOTE: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank)	5				

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: Elk Lick	Distance from Evaluated Stream 3,990.00
CWH Name:	Distance from Evaluated Stream _
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEE	DAREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Amsterdam NRCS Soil Map F	Page: NRCS Soil Map Stream Order 1
County: Carroll Township / City: Lee	
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_N _ Date of last precipitation:02/12/19	Quantity: 1.00
Photograph Information: upstream, downstream, substrate	
Elevated Turbidity? (Y/N): Y Canopy (% open): 90%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id.	and attach results) Lab Number:
	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
N	
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optiona ID number. Include appropriate field data sheets from the Pr	•
N N	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebra	Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	<u> </u>
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation ar	nd a narrative description of the stream's location
	33 RIFFLE
N	& WOODLY DEBRIS
FLOW	
3 3 13	7 3
FLOW 3	5 >
	*





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 50

Date:

February 12, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 50

Date:

February 12, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 50

Date:

February 12, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





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

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line	
Field ID: hh-cms-021219-07 SITE NUMBER RIVER BASIN Ohio River DRAINAGE AREA (mi²)	.01
LENGTH OF STREAM REACH (ft) 253 LAT. 40.47320 LONG80.93440 RIVER CODE RIVER MILE	
DATE 02/12/19 SCORER CMS, RM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	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 SAND (<2 mm) [6 pts] Total of Percentages of Bldr Slabs Boulder Cobble Bedrock O.00% Substrate Percentage Check ONLY two predominant substrate TYPE boxes (Max of 32). A B. FINE DETRITUS [3 pts] O% O% ONL	HHEI Metric Points Substrate Max = 40
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 0 TOTAL NUMBER OF SUBSTRATE TYPES: 1	
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 [30 pts] NO WATER OR MOIST CHANNEL [0 pts]	Pool Depth Max = 30
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] > 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): 3.50	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field Narrow <5m None Fenced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And Right (R) as looking	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.5	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10)0 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: Elk Lick Distance from Evaluated Stream 1,800.00 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: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order 1
County: Carroll Township / City: Lee
MISCELLANEOUS Base Flow Conditions? (Y/N): N Date of last precipitation: 02/12/19 Quantity: 1.00
Photograph Information: upstream, downstream, substrate
Elevated Turbidity? (Y/N): Y 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)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
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
FLOW CL. FLOW
FLOW -
RUAD & GRAVEL



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 51

Date:

February 12, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 51

Date:

February 12, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 51

Date:

February 12, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





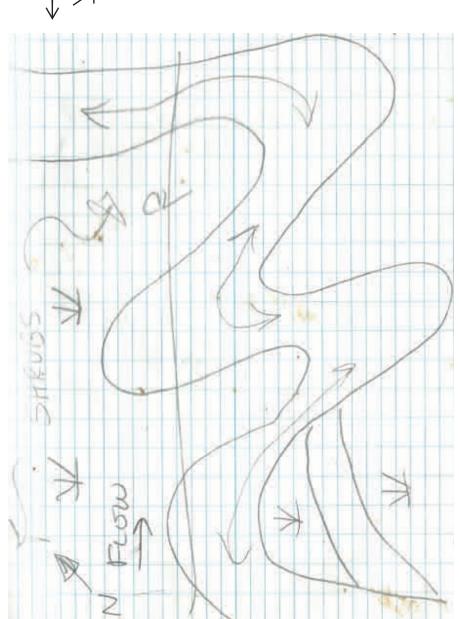
Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

Stream & Location	n: AEP Carrollt	on-Gable 138 kV	Transmission	Line	_ <i>RM:</i> _	0.3 <i><u>D</u>ate</i>	: ⁰² /	_
QHEI-CMS-02122019	-01	Sc		me & Affiliation		Stallone (/		
River Code:		STORET #:	<i>Lat./ L(</i> <u> </u>	ong.: 40 4729	/8 <u>∘</u> .	9342	Office verified location	$\frac{d}{d}$
BEST TYPE: BLDR /SLABS [' BOULDER [9] COBBLE [8] GRAVEL [7] SAND [6] BEDROCK [5] NUMBER OF BES	T TYPES: 4 or	ry type present OTHER TYPES	Jubstrates; ignore [point-sources) [ORIGIN LIMESTONE [1] TILLS [1] WETLANDS [0] HARDPAN [0] SANDSTONE [0] RIP/RAP [0] LACUSTURINE [0] SHALE [-1] COAL FINES [-2]		QUAI HEAVY MODER NORMA FREE [1] EXTENS MODER NONE [1]	LITY [-2] ATE [-1] Subst	trate
	quality; 2 -Mode ity in moderate or gre ble, well developed r	erate amounts, but not eater amounts (e.g., ve cootwad in deep / fast v	of highest quality ery large boulders water, or deep, we m [2] OX [1] AQ	/ or in small amounts	of highest r, large l pools. [ERS [1] [TES [1] [Check ONE (C EXTENSIVE MODERATE SPARSE 5-	E 25-75% [7]	
_	EVELOPMENT] EXCELLENT [7]] GOOD [5]] FAIR [3]	CONE in each categor CHANNELIZ NONE [6] RECOVERED [4] RECOVERING [3] RECENT OR NO	ATION 1 31	STABILITY STABILITY HIGH [3] MODERATE [2] LOW [1]			Channel Maximum 20	
4] BANK EROSIO River right looking down EROSION NONE / LITTLE MODERATE [2] HEAVY / SEVERI	RIPAR RIPAR RIPAR S WIDE > 1 MODER NARRO	IAN WIDTH	FLOO	D PLAIN QUALI AMP [3] DLD FIELD [2] PARK, NEW FIELD	TY R C C C C C C C C C	CONSERVATION JRBAN OR IN	ON TILLAGE [1] DUSTRIAL [0] STRUCTION [0] land use(s) Riparian Maximum	
Comments							10	
5] POOL / GLIDE A MAXIMUM DEP Check ONE (ONLY) > 1m [6] 0.7-<1m [4] 0.4-<0.7m [2] 0.2-<0.4m [1] <0.2m [0] Comments	FH CHAN Check ON	UN QUALITY INEL WIDTH E (Or 2 & average) I > RIFFLE WIDTH [2] I = RIFFLE WIDTH [1] I < RIFFLE WIDTH [0]	Chec TORRENTIA VERY FAST FAST [1] MODERATE	EENT VELOCITY ck ALL that apply AL [-1] SLOW [1] [1] INTERSIT INTERMIT [1] DEDDIES [1] r reach - pools and ri	TIAL [-1] TENT [-2]	Primary Secondar	n Potential v Contact ry Contact comment on back) Pool / Current Maximum 12	
Indicate for fu of riffle-obliga RIFFLE DEPTH BEST AREAS > 10cr BEST AREAS 5-10cr BEST AREAS < 5cn [metri	te species: RUN D [2] MAXIMUM [1] MAXIMUM	EPTH RIFF > 50cm [2] ☐ STAB < 50cm [1] ☑ MOD.	DNE (Or 2 & avera LE / RUN SUI LE (e.g., Cobble, STABLE (e.g., La	age). BSTRATE RIF Boulder) [2]	FLE / RUN	tion NEMBEDD ONE [2] OW [1] ODERATE [0] XTENSIVE [-1]	RIFFLE [metric=	=0]
6] GRADIENT (80 DRAINAGE AR	EA D MOI	Y LOW - LOW [2-4] DERATE [6-10] H - VERY HIGH [10-6]		%POOL: 100	%GLIDE	=	Gradient 4 Maximum	

AJ SAMPLED REACH Check ALL that apply	Comment RE: Reach consistency/ I:	s reach typical of steam?, <i>Recreation</i>	// Observed - Inferred, <i>Other</i> /	Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.	ess directions, etc.
METHOD STAGE					
BOAT 1st -sample pass- 2nd .					
☐ L. LINE ☐ UP ☐ OTHER ☐ NORMAL☐					
DISTANCE DRY					
□ 0.5 Km CLARITY	BJAESTHETICS	DJ MAINTENANCE	Circle some & COMMENT	EJ ISSUES	F] MEASUREMENTS
1stsample pass 2nd		PUBLIC / PRIVATE / BOTH / NA		WWTP / CSO / NPDES / INDUSTRY	x width 6'
	☐ INVASIVE MACROPHYTES ☐ FXCESS TURBIDITY	ACTIVE / HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD		HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL	x depth 3'
☐ OIHER ☐ 40-70 cm ☐	DISCOLORATION	SPRAY / SNAG / REMOVED		BMPs-CONSTRUCTION-SEDIMENT	max. depth 3.
	☐ FOAM / SCUM	MODIFIED / DIPPED OUT / NA		LOGGING / IRRIGATION / COOLING	x Dalikiuli Widtii 3 hankfull 7 denth 3 h
CANODY 15	OIL SHEEN TRASH / LITTER	LEVEED / ONE SIDED RELOCATED / CUTOFFS		BANK / <u>EROSION</u> / SURFACE FALSE BANK / MANURE / LAGOON	W/D ratio
	10	MOVING-BEDLOAD-STABLE		WASH H ₂ 0 / TILE / H ₂ 0 TABLE	bankfull max, depth
783%- OFEN pp	☐ SLUDGE DEPOSITS	ARMOURED / SLUMPS		ACID / MINE / QUARRY / FLOW	floodprone x ² width
	☐ CSOs/SSOs/OUTFALLS	ISLANDS / SCOURED		NATURAL (WETLAND) STAGNANT	entrench. ratio
	ATION AREA DEPTH	IMPOUNDED / DESICCATED		PARK / GOLF / LAWN / HOME	Legacy Tree:
☐ <10%- CLOSED	<i>POOL:</i> □>100ft ² □>3ft	FLOOD CONTROL/ DRAINAGE		AIMOSPHERE/ DAIA PAUCII 1	

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







STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 52

Date:

February 12, 2019

Description:

Perennial

Fair Warmwater Habitat

Facing Downstream



Stream 52

Date:

February 12, 2019

Description:

Perennial

Fair Warmwater Habitat





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet



%BOOF: 40 %BIEFLE: 10 Gradient 4	6] GRADIENT (66.1 ft/mi) □ VERY LOW - LOW [2-4] DRAINAGE ARRE [6-10] □ MODERATE [6-10] ABRA HGH 110-61
3.5 Moderate [0] Moderate [0] Maximum 3.5 Maximum 3.5 Maximum 3.5 Maximum 3.5 Maximum 3.5 Maximum 3.5 Maximum Maxi	BEST AREAS < 5cm [metric=0] Comments
TABLE (e.g., Large Gravel) [1] ☐ LOW [1]	REST AREAS > 10cm [2]
	Indicate for functional riffles; Best areas must b of riffle-obligate species: Check ON
21 mumixeM	Comments
MODERATE [1] ☐ EDDIES [1] ☐ FDDIES [1] ☐ Indicate for reach - pools and riffles.	
VERY FAST [1] ☐ INTERSTITIAL [-1] (circle one and comment on back) ☐ SEAT [-2] ☐ INTERMITTENT [-2]	
Check ALL that apply TORRENTIAL [-1] SLOW [1] Secondary Confact	
CURRENT VELOCITY Recreation Potential	MAXIMUM DEPTH CHANNEL WIDTH
	5] POOL / GLIDE AND RIFFLE / RUN QUALITY
G-E mumixeM mumixeM 01 01 01 01 01 01 01 01 01 01 01 01 01	Comments 1.5+0.5+1.5
FENCED PASTURE [1] Indicate predominant land use(s)	☐ [1] ME > WORRAN YBEY ☐ ☐ [1] ☐ [1] ☐ ☐ [1]
] SHRUB OR OLD FIELD [2] \square URBAN OR INDUSTRIAL [0] SHRUB OR OLD FIELD [1] \square MINING \backslash CONSTRUCTION [0]	☐ MODERATE [2] ☐ NARROW 5-10m [2] ☐
FOREST, SWAMP [3] CONSERVATION TILLAGE [1]	EBOSION D WIDE > 50m [4]
Z YTIJAUQ VIATA	4] BANK EROSION AND RIPARIAN ZONE Check ONE in River right looking downstream RIPARIAN WIDTH
	Comments □ POOR[1] □ RECENT OR NO R
[i] row [i]	☐ LOW [2] ☐ FAIR [3] ☐ RECOVERING [3]
[8] H⊝H ☐ MODERATE [2]	✓ MODERATE [3] ☐ EXCELLENT [7] ☐ NONE [6]
	SINDOSITY DEVELOPMENT CHANNELIZATION OF THE CONTROL
	3] CHANNEL MORPHOLOGY Check ONE in each category
G Sover Maximum 20	Соплепта
LOGS OR WOODY DEBRIS [1] [1] LOGS OR WOODY DEBRIS [1]	[1] BOULDERS [1] SHALLOWS (IN SLOW WATER) [1] BOULDERS [1]
E] %22>-3 BRARSE [1] SPARSE 5-<25% [3]	UNDERCUT BANKS [1] POOLS > 70cm
iter, or deep, well-defined, functional pools.	quality; 3-Highest quality in moderate or greater amounts (e.g., very diameter log that is stable, well developed rootwad in deep / fast wa
user quality or in small amounts or nightest	2] INSTREAM COVER Indicate presence 0 to 3: 0 -Absent; 1 -V and not of the sign of the s
	Could not see substrate but assuming the
□ COAL FINES [-2]	Comments
oint-sources) \square LACUSTURINE [0] $\stackrel{\mathcal{S}_{\mathcal{S}}}{\square}$ NORMAL [0] \square LACUSTURINE [0]	N∩WBEK OF BEST TYPES: ☐ 4 or more [2] sludge from p
5 SANDSTONE [0] SODE TENSIVE [-2]	SAND [6] 15 TELLO IN THE CIPIT [0]
METLANDS [0] METLANDS [0] MARANL [0]	☐ ○ COBBLE [8] 30 ○ □ SILT [2] □ □ COBBLE [8] □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
☐ LIMESTONE [1] SILT ☐ MODERATE [-1] Substrate	BLDR /SLABS [10]
ORIGIN QUALITY	BEST TYPES POOL RIFFLE OTHER TYPES PO
Check ONE (Or 2 & average)	1] SUBSTRATE Check ONLYTWo substrate TYPE BOXES; estimate % or note every type present
рейтее verified Даг. / Солд.: 4. 169391, -80.931744 Даг. / Солд.: Долд. / Солд.: Долд. / Солд.: Долд. / Солд.: Долд. / Солд.: Долд.: Дол	River Code: STORET #:
nission Line, Carroll County PM: 30.4 Date: UZ/1Z/19 ers Full Name & Affiliation: JTT., AECOM	
BISSION LINE, CARTOII COUNTY カル・・カハ トロット (JZIZIZI)	Stream & Location: AEP Carrollton-Gable 138 KV I ransh

Ebk 4520 06/16/06

☐ <10%- CLOSED ✓ > 85%- OPEN ☐ 55%-<85% </p> DISTANCE □ 10%-<30% □ 30%-<55% 200 feet 0.5 Km 0.12 Km 0.15 Km 0.2 Km OTHER CANOPY □ > 70 cm/ CTB □ SECCHI DEPTH□ 1st-sample pass-2nd | HIGH | UP | NORMAL | LOW | DRY 40-70 cm < 20 cm 20-<40 cm --sample pass--181 **CLARITY** C] REC Sm S Lawn ☐ CSOs/SSOs/OUTFALLS OIL SHEEN DISCOLORATION SLUDGE DEPOSITS **EXCESS TURBIDITY INVASIVE MACROPHYTES NUISANCE ALGAE NUISANCE ODOR** TRASH / LITTER FOAM / SCUM **BJ AESTHETIC** □ >100ft² □ >3ft AREA DEPTH PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA MODIFIED / DIPPED OUT / NA IMPOUNDED / DESICCATED MOVING-BEDLOAD-STABLE SPRAY / SNAG / REMOVED YOUNG-SUCCESSION-OLD **RELOCATED / CUTOFFS** ARMOURED / SLUMPS **LEVEED / ONE SIDED** D] MAINTENANCE ISLANDS / SCOURED DRAINAGE walkable bridge hh-03 Circle some & COMMENT _awn NATURAL / WETLAND / STAGNANT BMPs-CONSTRUCTION-SEDIMENT FALSE BANK / MANURE / LAGOON HARDENED / URBAN / DIRT&GRIME WWTP / CSO / NPDES / INDUSTRY _OGGING / IRRIGATION / COOLING ATMOSPHERE / DATA PAUCITY ACID / MINE / QUARRY / FLOW PARK / GOLF / AWW HOME WASH H₂0 / TILE / H₂0 TABLE BANK / EROSION / SURFACE **CONTAMINATED / LANDFILL** E] ISSUES x depth F] MEASUREMENTS W/D ratio bankfull x depth x bankfull width 25ft x width entrench. ratio floodprone x2 width bankfull max. depth max. depth 24 in Lawn

□ BOAT
□ WADE
□ L. LINE
□ OTHER

Recreational use designation of Primary Contact Recreation (PCR).

water supply use designations of Agricultural Water Supply (AWS) and Industrial Water Supply (IWS). This stream also has the Creek - which falls between Elk Fork and Goose Creek - does not have an Aquatic Life Habitat use designation, however, it does have Water level was up due to recent rains. Stream flow was at a decent pace and the water was full of sediment. This section of Yellow Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

STAGE

A] SAMPLED REACH

Check ALL that apply



PHOTOGRAPHIC RECORD STREAMS

Client Name: Site

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 53

Date:

February 12, 2019

Description:

Perennial

Yellow Creek

OEPA Warmwater Habitat

Facing Upstream



Stream 53

Date:

February 12, 2019

Description:

Perennial

Yellow Creek

OEPA Warmwater Habitat





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 53

Date:

February 12, 2019

Description:

Perennial

Yellow Creek

OEPA Warmwater

Habitat



Stream 54



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

25

Ephemeral Stream

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line			
hh-aeh-021219-03 SITE NUMBER 03 RIVER BASIN DRAINAGE AREA (mi²)	.01		
LENGTH OF STREAM REACH (ft) LATLATLONGRIVER CODERIVER MILE			
DATE 02/12/19 SCORER JTT, 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 Culverted	OVERY		
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]	Points		
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] BEDROCK [16 pt] LEAF PACK/WOODY DEBRIS [3 pts] 10% FINE DETRITUS [3 pts]	Substrate		
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt]	Max = 40		
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ O%	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			
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]	IVIAX - 30		
> 22.5 - 30 cm [30 pts]	5		
COMMENTS MAXIMUM POOL DEPTH (Inches): 1.50			
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] > 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]			
> 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] 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 AVERAGE BANKFULL WIDTH (Feet): 1.00 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY 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 ANOTE: River Left (L) and Right (R) and River Left (R) and River	Width Max=30		
> 4.0 meters (> 13') [30 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]	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 L R (Per Bank) Wide >10m	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 Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS > 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 - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0 m (<=3' 3") [5 pts] 1.00 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 NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V Narrow <5m None Residential, Park, New Field 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] > 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 Penced Pasture Flood Residential, Park, New Field Flood Residential, Park, New Fiel	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 >10 m Mature Forest, Wetland Moderate 5-10 m Mature Forest, Wetland 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) COMMENTS Stream Flowing Wide >10 m Moist 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" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30		

ADDITIONAL STREAM INFORMATION (This Information Must Als	o be Completed):		
QHEI PERFORMED? - Yes / No QHEI Score	(If Yes, Attach Compl	leted QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)	Dieter	as from Euglisets d Characa	٦
WWH Name: CWH Name:		ce from Evaluated Stream	+
EWH Name:		te from Evaluated Stream	†
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE E	NTIRE WATERSHED AREA. O	CLEARLY MARK THE SITE LOCATION	-
USGS Quadrangle Name: Amsterdam	NRCS Soil Map Page:	NRCS Soil Map Stream Order	
	ship / City:Loudon Townsh	hip/Amsterdam	
MISCELLANEOUS			
Base Flow Conditions? (Y/N): Y Date of last precipitation:	02/11/19 Qua	ntity: 0.16	
Photograph Information: 3 photos, upstream, downstream, substi	rate		
Elevated Turbidity? (Y/N): N Canopy (% open): 0°	%		
Were samples collected for water chemistry? (Y/N): N (Note la	ab sample no. or id. and attach	n results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) C	Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N)	t, please explain:		
Additional comments/description of pollution impacts:			
Overall Stability of BOTH Stream Banks (check one): Stable	Moderately Stable	e Unstable 🗸	
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)			
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH	(This <u>must</u> be completed):	
Include important landmarks and other features of interest fo	or site evaluation and a narra	tive description of the stream's location	1
	$\mathcal{L}_{\mathcal{L}_{\mathcal{L}_{\mathcal{L}}}}$	$(A)_A$	Strean



PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 54

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 54

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 54

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream



Stream 55



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

25

Ephemeral Stream

hh-aeh-021219-05 SITE NUMBER 05 RIVER BASIN DRAINAGE AREA (mi²) 0.01 LENGTH OF STREAM REACH (ft) 200 LAT. 40.46876 LONG80.93086 RIVER CODE RIVER MILE DATE 02/12/19 SCORER JTT, AEH COMMENTS ephemeral NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
DATE 02/12/19 SCORER JTT, AEH COMMENTS ephemeral
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: Channelized
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 HHE Metri
BLDR SLABS [16 pts] O SILT [3 pt] 60% Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] O% Substra
COBBLE (65-256 mm) [12 pts]
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] O% ARTIFICIAL [3 pts] 15
Total of Percentages of 0.00% (A) Substrate Percentage Check 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 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 De Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]
COMMENTS MAXIMUM POOL DEPTH (Inches): 1.00
3. BANK FULL WIDTH (Measured as 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 ✓
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00
(i set).
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 R (Per Bank) L R (Most Predominant per Bank) L R
Wide >10m
Field — Open Pasture Row Crop
Narrow <5m Residential, Park, New Field J
None Fenced Pasture Mining or Construction COMMENTS
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
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)
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS current precip FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS current precip SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0

ADDITIONAL STREAM INFORMATION (This Information Must Al	so be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream		
	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
JSGS Quadrangle Name: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order		
County: Carroll Township / City: Loudon Township/Amsterdam		
MISCELLANEOUS		
Base Flow Conditions? (Y/N):Y Date of last precipitation:	02/11/19 Quantity: 0.16	
Photograph Information: 3 photos, upstream, downstream, subs	trate	
Elevated Turbidity? (Y/N): N Canopy (% open): 6	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 (mg/l)	pH (S.U.) Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) Y If no	ot, please explain:	
Additional comments/description of pollution impacts:		
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:		
	N OF STREAM REACH (This must be completed): for site evaluation and a narrative description of the stream's location	
FLOW TLine		



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 55

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream

Facing Upstream



Stream 55

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream





STREAMS

Client Name: Site Location:

Project No.

60582598

AEP Gable-Carrollton 138 kV Tranmission Line Project

Stream 55

Date:

February 12, 2019

Description:

Ephemeral

Ephemeral Stream





Primary Headwater Habitat Evaluation Form

	HHEI SCORE (sum of metrics 1, 2, 3):	
SITE NAME/LOCATION AEP Carrollton-Gable		
Field ID: hh-cms-021319-04SITE NUMBER	RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.0	10
	. 40.46590 LONG80.92870 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER CMS, RM	COMMENTS	
NOTE: Complete All Items On This Form - R	tefer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
STREAM CHANNEL NONE / NATURA MODIFICATIONS: Ephemeral, culverted	AL CHANNEL RECOVERED RECOVERING RECENT OR NO RECENT OR RECENT OR NO RECENT OR NO RECENT OR NO RECENT OR RE	VERY
	pe of substrate present. Check ONLY two predominant substrate TYPE boxes	
, ,	ubstrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI Metric
TYPE PERCI	TITE FERCENT	Points
BOULDER (>256 mm) [16 pts] 0%		Substrate
BEDROCK [16 pt] 0% COBBLE (65-256 mm) [12 pts] 0%	FINE DETRITUS [3 pts]	Max = 40
GRAVEL (2-64 mm) [9 pts] 34%		40
SAND (<2 mm) [6 pts] 33%		18
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRA	TE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
• •		Pool Deptl
evaluation. Avoid plunge pools from road culv > 30 centimeters [20 pts]	verts or storm water pipes) (Check ONLY 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]	15
COMMENTS	MAXIMUM POOL DEPTH (Inches): 2.00	
3. BANK FULL WIDTH (Measured as the aver		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); 1.00	5
	(133)	
	This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN	N QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
<u>RIPARIAN WIDTH</u> <u>F</u> L R (Per Bank) L	LOODPLAIN QUALITY 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	Tenced rasture Mining of Construction	
FLOW REGIME (At Time of Evaluation	on) (Chack ONI Vana hav):	
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated pools (In	terstitial) Dry channel, no water (Ephemeral)	
COMMENTS_		
	I m (200 ft) of channel) (Check ONLY one box):	
✓ None ✓ 1 ✓ 0.5 ✓ 1	.0 2.0 3.0 3.0 >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)	ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Co	ompleted):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Goose Creek CWH Name: EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE	NATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Amsterdam NRC	S Soil Map Page: NRCS Soil Map Stream Order 1
County: Jefferson Township / C	sity:Springfield
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_N Date of last precipitation:_ 02/1	3/19 Quantity: 1.00
Photograph Information: upstream, downstream, substrate	
Elevated Turbidity? (Y/N): Y Canopy (% open): 40%	
Were samples collected for water chemistry? (Y/N): N (Note lab samp	le 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	e explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheet Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed	etions optional. NOTE: all voucher samples must be labeled with the site is from the Primary Headwater Habitat Assessment Manual) Ed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION OF S	STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site e	
N X APSRS FLOW	WETLAND 33 RIFFLE WOODLY DEBRIS
FLOW TO THE STATE OF THE STATE	3033
4	4 13 2



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 56

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 56

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 56

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION AEP Carrollton-Ga	able 139 kV Transmission Line
Field ID: hh-cms-021319-03 SITE NUMBER	RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.04
	LAT. 40.46570 LONG80.92860 RIVER CODE RIVER MILE
DATE 02/13/19 SCORER CMS, RM	
	- Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
·	URAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY
STREAM CHANNEL NONE / NATU MODIFICATIONS: Ephemeral	URAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
	y type of substrate present. Check ONLY two predominant substrate TYPE boxes
	int substrate types found (Max of 8). Final metric score is sum of boxes A & B.
	RCENT TYPE PERCENT OW POINTS
	0% LEAF PACK/WOODY DEBRIS [3 pts] 0%
	0% Substrat Onc Substrat Onc Substrat Max = 4
	0%
OTAVEE (2-04 IIIII) [5 pt3]	33% ARTIFICIAL [3 pts] 0%
T. I. CD	Substrate Percentage (B)
Bldr Slabs, Boulder, Cobble, Bedrock	Check 100%
SCORE OF TWO MOST PREDOMINATE SUBST	TRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 3
	eximum pool depth within the 61 meter (200 ft) evaluation reach at the time of culverts 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] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]
COMMENTS	MAXIMUM POOL DEPTH (Inches): 2.00
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]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width ✓ 1.0 m (<=3' 3") [5 pts] Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 1.50 5
DIDADIAN ZONE AND EL CODDI	This information <u>must</u> also be completed LAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN ZONE AND FLOODPL <u>RIPARIAN WIDTH</u>	FLOODPLAIN QUALITY
L R (Per Bank) Wide >10m	L R (Most Predominant per Bank) L R
Moderate 5-10m	Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial
	Field Onen Pasture Row Cron
✓ ✓ Narrow <5m	Residential, Park, New Field
None COMMENTS	Fenced Pasture Mining or Construction
FLOW REGIME (At Time of Evalu	unation) (Chack ONLY and hav):
Stream Flowing `	Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated pools COMMENTS	s (Interstitial) Dry channel, no water (Ephemeral)
	1 (000 ft) of all annual) (01 and 02 ft)
SINUOSITY (Number of bends pe	er 61 m (200 ft) of channel) <u>(C</u> heck <i>ONLY</i> one box):
None	
None 0.5 STREAM GRADIENT ESTIMATE	1.0 1.5 2.0 2.5 3.0 >3
None ✓ 0.5	1.0 2.0 3.0

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed)	<u>):</u>
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Goose Creek 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: Amsterdam NRCS Soil Ma	p Page: NRCS Soil Map Stream Order 1
	ingfield
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N _ Date of last precipitation: 02/13/19	Quantity: 1.00
Photograph Information: upstream, downstream, substrate	
Elevated Turbidity? (Y/N): Y Canopy (% open): 25%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or in	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:	
ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N)	N N
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	
FLOW The state of	WETLAND 33 RIPPLE WOODY DEBRIS



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 57

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 57

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 57

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

SITE NAME/LO					
	OCATION AEP Carrollton-G			-	
Field ID: hh-cms	s-021319-01 SITE NUMBER		ASIN Ohio River		0.04
	STREAM REACH (ft) 246		NG80.92870 RIVER COL	DERIVER MILE _	
DATE 02/13	SCORER CMS, RM	COMMENTS _			
NOTE: Con	nplete All Items On This Form	ı - Refer to "Field Ev	aluation Manual for Ohio's	PHWH Streams" for Inst	ructions
STREAM CH	HANNEL NONE / NAT	URAL CHANNEL	RECOVERED RECOVERIN	IG RECENT OR NO REC	COVERY
	TIONS: Intermittent		COOVERED MILEOUVERIN	I I I I I I I I I I I I I I I I I I I	JOVEIN
1. SUBS	STRATE (Estimate percent of ever	ry type of substrate pro	eant Chack ONI V two prodomi	nant auhatrata TVPE hayaa	
	of 32). Add total number of significa				HHEI
TYPE		RCENT TYPE		PERCENT	Metric Points
	LDR SLABS [16 pts] OULDER (>256 mm) [16 pts]	0%	SILT [3 pt] LEAF PACK/WOODY DEBRIS	0% S [3 pts] 0%	Folits
	EDROCK [16 pt]	0%	FINE DETRITUS [3 pts]	0%	Substrate
		15%	CLAY or HARDPAN [0 pt]	30%	Max = 40
☐ ☐ GI	RAVEL (2-64 mm) [9 pts]	15%	MUCK [0 pts]	0%	10
☐ ✓ SA	AND (<2 mm) [6 pts]	30%	ARTIFICIAL [3 pts]	0%	
Bldr S	Total of Percentages of Slabs, Boulder, Cobble, Bedrock	5.00% ^(A)	Substrate Percentage 90%	(B)	A + B
	NO MOST PREDOMINATE SUBS	TRATE TYPES: 6	TOTAL NUMBER OF SU	BSTRATE TYPES: 4	
	num Pool Depth (Measure the ma		, ,		Pool Depti
	ation. Avoid plunge pools from road entimeters [20 pts]	culverts or storm water	pipes) (Check <i>ONLY</i> one box) > 5 cm - 10 cm [15 pts]):	Max = 30
	- 30 cm [30 pts]		< 5 cm [5 pts]		
> 10 -	22.5 cm [25 pts]		NO WATER OR MOIST CHA	ANNEL [0 pts]	15
COM	MENTS		MAXIMUM POOL DEI	PTH (Inches): 2.00	
3. BANK	K FULL WIDTH (Measured as the	average of 3-4 measure	ements) (Check ONLY	one box):	Bankfull
	neters (> 13') [30 pts]		> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m	·	✓	> 1.0 m - 1.5 m (> 3' 3" - 4' 8" ≤ 1.0 m (<=3' 3") [5 pts]) [15 pts]	Width Max=30
> 3.0 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts] n - 3.0 m (> 9' 7" - 4' 8") [20 pts]	✓	≤ 1.0 m (<=3' 3") [5 pts]	4.50	Max=30
> 3.0 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts]	7	· ·		
> 3.0 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts] n - 3.0 m (> 9' 7" - 4' 8") [20 pts]	This information	≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFUL	4.50	Max=30
> 3.0 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts] n - 3.0 m (> 9' 7" - 4' 8") [20 pts]	LAIN QUALITY ☆N	AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R	L WIDTH (Feet): 1.50	Max=30
> 3.0 m > 1.5 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts] n - 3.0 m (> 9' 7" - 4' 8") [20 pts] MENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH	LAIN QUALITY ☆N FLOODPLAIN QUAL	AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R	L WIDTH (Feet): 1.50	Max=30
> 3.0 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts] n - 3.0 m (> 9' 7" - 4' 8") [20 pts] MENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank)	LAIN QUALITY かい FLOODPLAIN QUALI LR (Most Predi	AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY ominant per Bank)	L WIDTH (Feet): 1.50 as looking downstream ☆	Max=30
> 3.0 m > 1.5 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts] n - 3.0 m (> 9' 7" - 4' 8") [20 pts] MENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m	LAIN QUALITY AN FLOODPLAIN QUALIN QUA	AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R	L WIDTH (Feet): 1.50 as looking downstream Conservation Tillage	Max=30
> 3.0 m > 1.5 m	RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m	LAIN QUALITY AN FLOODPLAIN QUALING Most Prediction of the control	AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) est, Wetland orest, Shrub or Old	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial	Max=30
> 3.0 m > 1.5 m	neters (> 13') [30 pts] n - 4.0 m (> 9' 7" - 13') [25 pts] n - 3.0 m (> 9' 7" - 4' 8") [20 pts] MENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m	LAIN QUALITY AN FLOODPLAIN QUALING Most Prediction of the control	AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) L est, Wetland	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Cr	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None	LAIN QUALITY AN FLOODPLAIN QUALING Most Prediction of the control	AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) est, Wetland orest, Shrub or Old Park, New Field	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m	LAIN QUALITY FLOODPLAIN QUAL L R (Most Predo Mature Fore Immature F Field Residential	AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) est, Wetland orest, Shrub or Old Park, New Field	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Cr	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS No () 130 pts] No () 20 pts] No ()	LAIN QUALITY FLOODPLAIN QUAL L R (Most Predo Mature Fore Immature Field Residential Fenced Pas	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Design of the completed OTE: River Left (L) and River Left (L) and River Left (L) and River Left (L) a	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Construction	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS RIPARIAN (At Time of Eval Stream Flowing	LAIN QUALITY AN FLOODPLAIN QUALITY L R (Most Prediction of Mature Fore Field Residential Fenced Pasturation) (Check ONLY of Mature Fore Pasturation)	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) Lest, Wetland Orest, Shrub or Old Park, New Field Sture Moist Channel, isolate	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Co Mining or Construction ed pools, no flow (Intermittent	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS No () 130 pts] No () 20 pts] No ()	LAIN QUALITY AN FLOODPLAIN QUALITY L R (Most Prediction of Mature Fore Field Residential Fenced Pasturation) (Check ONLY of Mature Fore Pasturation)	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Design of the completed OTE: River Left (L) and River Left (L) and River Left (L) and River Left (L) a	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Co Mining or Construction ed pools, no flow (Intermittent	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS	LAIN QUALITY AN FLOODPLAIN QUALI L R (Most Prediction of the content of the conte	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) Lest, Wetland orest, Shrub or Old Park, New Field Sture Moist Channel, isolat Dry channel, no wate	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Co Mining or Construction ed pools, no flow (Intermittent	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval Subsurface flow with isolated pool	LAIN QUALITY AN FLOODPLAIN QUALI L R (Most Prediction of the content of the conte	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) est, Wetland orest, Shrub or Old Park, New Field ture Moist Channel, isolat Dry channel, no wate el) (Check ONLY one box): 2.0	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Cr Mining or Construction ed pools, no flow (Intermittenter (Ephemeral)	5
> 3.0 m > 1.5 m	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m 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 per serior ser	LAIN QUALITY FLOODPLAIN QUALI L R (Most Prediction of the control of the contro	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) Lest, Wetland orest, Shrub or Old Park, New Field ture Moist Channel, isolat Dry channel, no wate el) (Check ONLY one box):	L WIDTH (Feet): 1.50 as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Construction Mining or Construction ed pools, no flow (Intermittenter (Ephemeral)	5
> 3.0 m > 1.5 m COMM	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m 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	LAIN QUALITY FLOODPLAIN QUALI L R (Most Prediction of the content	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) est, Wetland orest, Shrub or Old Park, New Field ture Moist Channel, isolat Dry channel, no wate el) (Check ONLY one box): 2.0 2.5	L WIDTH (Feet): 1.50 as looking downstream Conservation Tillage Urban or Industrial Open Pasture, Row Co Mining or Construction ed pools, no flow (Intermittenter (Ephemeral) 3.0 >3	5
> 3.0 m > 1.5 m COMM	RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m 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 property) None 0.5	LAIN QUALITY FLOODPLAIN QUALI L R (Most Prediction of the content	AVERAGE BANKFUL AVERAGE BANKFUL AVERAGE BANKFUL On must also be completed OTE: River Left (L) and Right (R TY Ominant per Bank) est, Wetland orest, Shrub or Old Park, New Field ture Moist Channel, isolat Dry channel, no wate el) (Check ONLY one box): 2.0 2.5	L WIDTH (Feet): 1.50 as looking downstream Conservation Tillage Urban or Industrial Open Pasture, Row Co Mining or Construction ed pools, no flow (Intermittenter (Ephemeral) 3.0 >3	Max=30 5

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: Goose Creek CWH Name: EWH Name:	_ Distance from Evaluated Stream _ Distance from Evaluated Stream _	1,600.00
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEE	AREA. CLEARLY MARK THE SITE I	LOCATION
USGS Quadrangle Name: Amsterdam NRCS Soil Map P	Page: NRCS Soil Map Strear	m Order1
County: Jefferson Township / City: Spring	field	
MISCELLANEOUS		
Base Flow Conditions? (Y/N): N _ Date of last precipitation: 02/13/19	Quantity: 1.00	
Photograph Information: upstream, downstream, substrate		
Elevated Turbidity? (Y/N): Y Canopy (% open): 50%		
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	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:		
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Pri Voucher? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology:	imary Headwater Habitat Assessment M Voucher? (Y/N)	lanual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	REACH (This must be comple	eted):
Include important landmarks and other features of interest for site evaluation an	· —	•
FLOW ->		WETLAND PIFFLE WOODY DEBRIS



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 58

Date:

February 13, 2019

Description:

Intermittent

Modified Ephemeral Stream

Facing Upstream



Stream 58

Date:

February 13, 2019

Description:

Intermittent

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 58

Date:

February 13, 2019

Description:

Intermittent

Modified Ephemeral Stream





A Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line	
Field ID: hh-cms-021319-02 SITE NUMBER RIVER BASIN Ohio River DRAINAGE AREA (mi²)	.04
LENGTH OF STREAM REACH (ft) 112 LAT. 40.46550 LONG80.92850 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER CMS, RM COMMENTS	
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
MODIFICATIONS: Ephemeral	
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.	HHE
TYPE PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts]	Max = 4
GRAVEL (2-64 mm) [9 pts] 33% MUCK [0 pts] 0%	40
SAND (<2 mm) [6 pts]	12
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 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]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH (Inches): 2.00	
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] > 1.0 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] > 1.5 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] > 1.0 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): 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 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 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY > 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 ★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 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] > 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 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] > 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] > 1.5 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 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] > 1.5 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 RIPARIAN WIDTH FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream A grant and Right (R) as looking downstream Mature Forest, Wetland Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Vi 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) Moderate (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 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 L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Open Pasture, Row Cro None COMMENTS 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] > 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 FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 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) 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 **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Penced Pasture 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 1.0 1.0 1.0 1.0 1.0 1.0 1.	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 FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 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) 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" - 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) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cre 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) None 1.0 2.0 3.0 3.0 3.0 3.0 3.1 STREAM GRADIENT ESTIMATE	Width Max=30
> 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" - 13') [25 pts] > 1.5 m - 3.0 m (× 9' 7" - 4' 8") [20 pts]	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: Goose Creek Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order 1 County: Jefferson Township / City: Springfield
MISCELLANEOUS
Base Flow Conditions? (Y/N): N Date of last precipitation: 02/13/19 Quantity: 1.00
Photograph Information: upstream, downstream, substrate
Elevated Turbidity? (Y/N): Y 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:
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)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
FLOW EROSION
WETLAND WETLAND



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 59

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 59

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 59

Date:

February 13, 2019

Description:

Ephemeral

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

49

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | AEP Carrollton-Gable 138 kV Transmission Line Field ID: hh-cms-021319-05_{SITE NUMBER} RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.18 LAT. 40.45970 LONG. -80.92430 RIVER CODE LENGTH OF STREAM REACH (ft) RIVER MILE DATE 02/13/19 SCORER CMS, RM COMMENTS 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: Perennial 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] 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% 0% BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 407% 30% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 30% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 19 33% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 7.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock 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] 15 5.00 COMMENTS **MAXIMUM POOL DEPTH** (Inches): 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 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] 3.50 COMMENTS 15 AVERAGE BANKFULL WIDTH (Feet): This information must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH **FLOODPLAIN QUALITY** R (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 None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

2.0

✓ Moderate to Severe

3.0

>3

Severe (10 ft/100 ft)

1.0

15

Moderate (2 ft/100 ft)

Flat (0.5 ft/100 ft)

None

STREAM GRADIENT ESTIMATE

Flat to Moderate

0.5

ADDITIONAL STREAM INFORMATION (This Information Must Also b	e Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Goose Creek	Distance from Evaluated Stream 1,400.00
CWH Name:EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTI	RE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
Amstordam	NRCS Soil Map Page: NRCS Soil Map Stream Order 2
County: Jefferson Townshi	Chrinafiold
MISCELLANEOUS	
	02/13/19 Quantity: 1.00
Photograph Information: upstream, downstream, substrate	
Elevated Turbidity? (Y/N): Y Canopy (% open): 40%	
Were samples collected for water chemistry? (Y/N): N (Note lab s	ample 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, pl	ease explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
N	ollections optional. NOTE: all voucher samples must be labeled with the sit
ID number. Include appropriate field data s	heets 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 Aquatic	erved? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:	, N
DRAWING AND NAPPATIVE DESCRIPTION O	F STREAM REACH (This <u>must</u> be completed):
	ite evaluation and a narrative description of the stream's location
	CL 1 33 RIFFLE
X - 1	PERESCO X WOODY DEBRIS
N 19451EV	←→ RUN
TION (NEC	3/ 20/3 3 3
FLOW 33353	/w/
33, 5 (6)	
R WE TO	1 1045124
(2)	1 / 600
10°	



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 60

Date:

February 13, 2019

Description:

Perennial

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 60

Date:

February 13, 2019

Description:

Perennial

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 60

Date:

February 13, 2019

Description:

Perennial

Modified Small Drainage Warmwater Stream





Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line Field ID: hh-cms-021319-06 SITE NUMBER RIVER BASIN Ohio River DRAINAGE AREA (mi²) 0.33	=
LENGTH OF STREAM REACH (ft) 287 LAT. 40.45190 LONG80.91850 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER CMS, RM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	s
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: Perennial	
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 HH Met	
BLDR SLABS [16 pts] 0% SILT [3 pt] 0%	nts
BOULDER (>256 mm) [16 pts]	trate
COBBLE (65-256 mm) [12 pts]	= 40
GRAVEL (2-64 mm) [9 pts] 50% MUCK [0 pts] 0% ARTIFICIAL [3 pts] 0%	}
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) A + I	B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 Check 10076 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 evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 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)	-
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	
COMMENTS MAXIMUM POOL DEPTH (Inches): 4.00	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bank > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Wid	
> 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=	
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.50	
	_
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 Wide >10m Conservation Tillage	
Immature Forest, Shrub or Old	
Field — Open Pasture Row Crop	
Narrow <5m Residential, Park, New Field J	
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)	
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 0.5 1.5 2.5 7 >3	

ADDITIONAL STREAM INFORMATION (This Information Must Also be C	Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Goose Creek CWH Name: EWH 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: Amsterdam NR0	CS Soil Map Page: NRCS Soil Map Stream Order 2
County: Jefferson Township /	City: Springfield
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N Date of last precipitation: 02/	13/19 Quantity: 1.00
Photograph Information: upstream, downstream, substrate	
Elevated Turbidity? (Y/N): Y Canopy (% open): 40%	
Were samples collected for water chemistry? (Y/N): N (Note lab same	ple 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, pleas	e explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data shee Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed	ctions optional. NOTE: all voucher samples must be labeled with the site ts from the Primary Headwater Habitat Assessment Manual) ed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of interest for site	evaluation and a narrative description of the stream's location
PUON L	33 RIPPLE **LUCKORY DEBRIS WETLAND
FLOW 33 0 33 33 33 33 33 33 33 33 33 33 33 3	33333



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 61

Date:

February 13, 2019

Description:

Perennial

Small Drainage Warmwater Stream

Facing Upstream



Stream 61

Date:

February 13, 2019

Description:

Perennial

Small Drainage Warmwater Stream





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 61

Date:

February 13, 2019

Description:

Perennial

Small Drainage Warmwater Stream



36.5



1] SUBSTRATE Check ONLYTWO substrate TYPE BOXES; Lat. Long.: 40.441142, -80.910278 River Code: Office verified ⊓ noitscol STORET#: Scorers Full Name & Affiliation: JTT, AEH / AECOM qh-aeh-021319-01 Stream & Location: AEP Carrollton-Gable 138 kV Transmission Line, Jefferson County RM: 0 . 1 0 Date: 02/13/19 and Use Assessment Field Sheet **GHEI** Score: Qualitative Habitat Evaluation Index Warmwater Habitat - Poor

GLIDE: 20 Gradient	%POOL: (15) %RUN: (60)%R	 ✓ VERY LOW - LOW [2-4] ✓ HIGH - VERY HIGH [10-6] 	DRAINAGE AREA
Opulation EXTENSIVE [-1] Maximum 3.5 MODERATE [0] Riffle Run 3.5 MODERATE [0] Riffle Run 3.5 Maximum 3.5	g., Cobble, Boulder) [2]	KIMOM < 20cm [4] ☑ MOD: 2TABE NO DEPTH Check ONE (6.) Check ONE (6.)	of riffle-obligate species RIFFLE DEPTH RISI MMS
[S-] TI	CURRENT VELOCITY Check ALL that apply ORRENTIAL [-1] = SLOW [1] ORRENTIAL [1] = INTERSITIAL SET [1] = INTERMITTEN MODERATE [1] = EDDIES [1] Indicate for reach - pools and riffles	CHANNEL WIDTH WIDTH > RIFFLE WIDTH [1] THE WIDTH	☐ 0'Y-<1m [4] ☐ DOOL ☐ POOL ☐
Der bank & average) CONSERVATION TILLAGE [1] URBAN OR INDUSTRIAL [0] URBAN OR INDUSTRIAL [0] Indicate predominant land use(s) Indicate pr	FLOOD PLAIN QUALITY REST, SWAMP [3] IRUB OR OLD FIELD [2]	HTGIN WIDA4[] Columbia	EROSION
S Maximum 20	M STABILITY □ HIGH [3] □ MODERATE [2] □ LOW [1]	ENT CHANNELIZATIO	3] CHANNEL MORPHOLOGY MODERATE [3] EXCELLEN MODERATE [3] EXCELLEN [3] HIGH [4] EXCELLEN [3] HODERATE [3] OOOR [1] OOOR [1] OOOR [1]
Check ONE (Or 2 & average) Check ONE (Or 2 & average) Strain Moderate 25-75% [7] Strain Str	OXBOWS, BACKWATERS OT deep, well-defined, functional poor OXBOWS, BACKWATERS AQUATIC MACROPHYTERS ACUATIC MACROPHY	POOLS > 70cm [2] POOLS > 70cm	duality; 3-Highest quality in moderation diameter log that is stable, well developmenter log that is stable, well developmente and comments and comments lightless and comments lightless and comments lightless and coop [5] and

EPA 4520 90/91/90

wetland hh-01	Stream Drawing:	O.2 Km O.15 Km O.15 Km O.16 Km O.16 Cm O.17 Km O.17 Km O.18 CP CP CP OTHER O	, UUUUU §
	TLine	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	Water level was up due to recent rains. Stream flow was at a fair part Ohio Water Use designation. Two transmission lines, a pipeline
	Pipeline Row	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	- Inferred, Other/ Sampling observations, Concerns ace and the water was somewhat clear. ROW, and a railroad cross the stream.
	Rail- road	x width x depth max. depth 24 in x bankfull width 8t bankfull x depth W/D ratio bankfull max. depth floodprone x² width entrench. ratio Le Tree:	This stream does not have

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



PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 62

Date:

February 13, 2019

Description:

Perennial

Poor Warmwater Habitat

Facing Upstream



Stream 62

Date:

February 13, 2019

Description:

Perennial

Poor Warmwater Habitat





STREAMS

Client Name: Site Location: Project No.

AEP Gable-Carrollton 138 kV Tranmission Line Project 60582598

Stream 62

Date:

February 13, 2019

Description:

Perennial

Poor Warmwater

Habitat





ChieFP Primary Headwater Habitat Evaluation Form

AEP Carrollton Gable	le 138 kV Transmission Line / Jefferson County	
hh-aeh-021319-02 SITE NUMBER O1	RIVER BASIN DRAINAGE AREA (mi²) 0.10	0
	40.44085 LONG80.91025 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER JTT, AEH	COMMENTS Intermittent	
	Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
·		
STREAM CHANNEL NONE / NATURA MODIFICATIONS: Channelized	AL CHANNEL RECOVERED RECOVERING RECENT OR NO RECENT OR RECENT OR RECENT OR RECENT OR RECENT OR NO RECENT OR	VERY
12 1 2 1	we of substants present Check ON Vivian and Justine Light TVDF	
	/pe of substrate present. Check ONLY two predominant substrate TYPE boxes substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCI	PERCENT.	Metric Points
BLDR SLABS [16 pts] 0% BOULDER (>256 mm) [16 pts] 0%	SILT [SPI]	. Опп
□ □ BEDROCK [16 pt] 0 %	FINE DETRITUS [3 pts]	Substrat Max = 4
COBBLE (65-256 mm) [12 pts] 0%	CLAY or HARDPAN [0 pt]	IVIAX - 4
GRAVEL (2-64 mm) [9 pts] 10% SAND (<2 mm) [6 pts] 0%	Wook [o pla]	9
	/III Ionae [o peo]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	% (A) Substrate Percentage 100% (B)	A + B
CORE OF TWO MOST PREDOMINATE SUBSTRA	TE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
		Pool Dep
evaluation. Avoid plunge pools from road culv > 30 centimeters [20 pts]	verts or storm water pipes) (Check <i>ONLY</i> one box): Som - 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]	25
COMMENTS	MAXIMUM POOL DEPTH (Inches): 6.00	
BANK FULL WIDTH (Measured as the aver	rage 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]	≤ 1.0 m (<=3' 3") [5 pts]	Max=30
COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 5.00	20
COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 0.00	20
	This information must also be completed	_
RIPARIAN ZONE AND FLOODPLAIN	N QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FI L R (Per Bank) L	<u>FLOODPLAIN QUALITY</u> 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 stream flows through		
FLOW REGIME (At Time of Evaluation		
Stream Flowing Subsurface flow with isolated pools (In	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS_	bry Granner, No water (Ephemera)	
SINUOSITY (Number of bends per 61	1 m (200 ft) of channel) (Check ONLY one box):	
None 1.	.0 2.0 3.0	
0.5 1.	.5	
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	

road wetland hh-01	•	ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
Distance from Evaluated Stream		QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
MAPPINC: ATTACH COPES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name. Amsterdam NRCS Soil Map Page. NRCS Soil Map Stream Order County: Jefferson Township / City. Springfield MISCELLANEOUS Base Flow Conditions? (YIN) ✓ Date of last precipitation: 02/12/19 Quantity: 1.07 Photograph Information: Jehotos. upstream, downstream, substrate Elevated Turbidity? (Y/N): 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 (jumhos/cm) Is the sampling reach representalitive 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 ✓ BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site D number. Include appropriate field data sheets from the Primary Headward Habitat Assessment Manual) Finds Observed? (Y/N) N Voucher? (Y/N) N Aqualiti. Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): TLine The Primary of the stream's location of interest for site evaluation and a narrative description of the stream's location Pipeline ROW Rail-Old Pipeline Row	Г	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order County: Jefferson Township / City. Springfield MISCELLANEOUS Base Flow Conditions? (YM): Date of last precipitation: 02/12/19 Quantity: 1.07 Photograph Information: 3 Photos, upstream, downstream, substrate Elevated Turbidity? (Y/N): A Canopy (% open): 50% Were samples collected for water chamistry? (Y/N): N (Note lab sample no. orlid. and attach results) Lab Number: Field Measures: Temp (*C): Dissolved Oxygen (mgl!) pH (S.U.) Conductivity (umhos/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 BIOTIC EVALUATION Performed? (Y/N): N (If Yas, Record all abservations, Voucher collections optional. NOTE: all voucher samples must be labeled with the site 10 number. Include appropriate field data sheets from the Persony Headwaler Habilat Assessment Manual) Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N): N Voucher? (Y/N): N	ַ	CWH Name: Distance from Evaluated Stream
USGS Quadrangle Name. Amstardam NRCS Soll Map Page. NRCS Soll Map Stream Order. County: Jefferson Township / City. Springfield MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation: 02/12/19 Quantity: 1.07 Photograph Information: 3 Photos, upstream, downstream, substrate Elevated Turbidity? (Y/N): N Canopy (% open): 50% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. orid. and attach results) Lab Number: Field Measures: Temp (*C): Dissolved Oxygen (mg/l): pH(S,U.): Conductivity (jumhos/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 BIOTIC EVALUATION Performed? (Y/N): N (I/Y s. Record all obsorvations. Vocather collections optional. NOTE: all vocabre samples must be labeled with the site of the stream of interest for site evaluation and a narrative description of the stream's location pipeline (ROW) DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Thine The Stream of the stream's location pipeline (ROW) Proper indicate important landow that of interest for site evaluation and a narrative description of the stream's location pipeline (ROW) Rail Thine Row Reach (This must be completed): Thine Row Reach (This must be completed): Rail (Row Real) Pipeline (ROW)	L	EWH Name: Distance from Evaluated Stream
MISCELLANEOUS Base Flow Conditions? (Y/N): V Date of last precipitation: 02/12/19 Quantity. 1.07 Photograph Information: 3 photos, upstream, downstream, substrate Elevated Turbidity? (Y/N): 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 (umhos/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 BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations, Voucher collections optional. MOTE: all voucher samples must be labeled with the site in number. Include appropriate field data sheets from the Primary Neadwater Habilat Assessment Manual) Fish Observed? (Y/N): N voucher? (Y/N): N salamanders Observed? (Y/N): N voucher? (Y/N)		
Base Flow Conditions? (Y/N): Y Date of last precipitation: 02/12/19 Quantity: 1.07 Photograph Information: 3 photos, upstream, downstream, substrate Elevated Turbidity? (Y/N): 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)		
Base Flow Conditions? (Y/N): Y Date of last precipitation: 02/12/19 Quantity: 1.07 Photograph Information: 3 photos, upstream, downstream, substrate Elevated Turbidity? (Y/N): 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) In (Note lab sample no. or id. and attach results) Lab Number: 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 site 10 number: Include appropriate field data sheets from the Primary Headwater (Yab) in Analysis (Yab) N (Voucher? (Y/N)) N (County: Jefferson Township / City: Springfield
Photograph Information: Photograph Information: Photograph Information: N		MISCELLANEOUS
Elevated Turbidity? (Y/N): 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 politition 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 vouchers samples must be labeled with the site (D 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 Voucher? (Y/N) N Aqualite Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landown and other results of interest for site evaluation and a narrative description of the stream's location Pipeline ROW road		base flow conditions: (174).
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) Y If not. please explain: Overall Stability of BOTH Stream Banks (check one): Stable Moderately Stable Unstable V BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Recard 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): N Aquatic Macroinvertebrates Observed? (Y/N): N Voucher?		Photograph Information: 3 photos, upstream, downstream, substrate
Were samples collected for water chemistry? (YN): Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (jumhos/cm) Is the sampling reach representative of the stream (Y/N) In not, please explain: 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 site in 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/	ı	Elevated Turbidity? (Y/N): Canopy (% open):
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 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 Voucher	,	Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:
Additional comments/description of pollution impacts: Overall Stability of BOTH Stream Banks (check one): Stable		
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		Is the sampling reach representative of the stream (Y/N) If not, please explain:
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		
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site in number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N): N Voucher? (Y/N): N Frogs or Tadpoles Observed? (Y/N): N Voucher? (Y/N): N Aquatic Macroinvertebrates Observed? (Y/N): N Order? (Y/N): N Order: (Y/N): N Or		Additional comments/description of pollution impacts:
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		Overall Stability of BOTH Stream Banks (check one): Stable Moderately Stable Unstable
Include important land on the stream's location Pipeline ROW Rail- road vetland		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 Vo
TLine Pipeline Row road		DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
vetland hh-01	7	TLine ROW Rail-
		hh-01
October 24, 2002 Revision	<u>R</u>	PHWH Form Page - 2



PHOTOGRAPHIC RECORD STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 63

Date:

February 13, 2019

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 63

Date:

February 13, 2019

Description:

Intermittent

Small Drainage Warmwater Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 63

Date:

February 13, 2019

Description:

Intermittent

Small Drainage Warmwater Stream



Stream 64



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

	THILI Score (sum of metri	
	able 138 kV Transmission Line / Jefferson Count	у
hh-aeh-021319-03 SITE NUMBER 03	RIVER BASIN DRA	NAGE AREA (mi²) 0.04
LENGTH OF STREAM REACH (ft) 200	LAT. 40.43888 LONG80.90873 RIVER CODE	RIVER MILE
DATE 02/13/19 SCORER JTT, AEH	COMMENTS Intermittent	
		Stroome? for Instructions
NOTE: Complete All Items On This Form	- Refer to "Field Evaluation Manual for Ohio's PHWH	Streams for instructions
	URAL CHANNEL RECOVERED RECOVERING F	RECENT OR NO RECOVERY
MODIFICATIONS:		
SUBSTRATE (Estimate percent of ever	y type of substrate present. Check ONLY two predominant sub	strate TVPF hoves
	ant substrate types found (Max of 8). Final metric score is sum of	boxes A & B.
	RCENT TYPE	PERCENT Metric
BLDR SLABS [16 pts]	O% SILT [3 pt]	55% Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts]	0% Substrat
COBBLE (65-256 mm) [12 pts]	5% CLAY or HARDPAN [0 pt]	0% Max = 4
	40% MUCK [0 pts]	0%
SAND (<2 mm) [6 pts]	0% ARTIFICIAL [3 pts]	0%
Total of Percentages of 5	On% (A) Substrate Percentage	(B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock	Check 100%	(B) A + B
SCORE OF TWO MOST PREDOMINATE SUBST	TRATE TYPES: 12 TOTAL NUMBER OF SUBSTRA	TE TYPES: 3
2. Maximum Pool Depth (Measure the ma	aximum pool depth within the 61 meter (200 ft) evaluation reac	th at the time of Pool Dep
evaluation. Avoid plunge pools from road	culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 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		
> 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]	∑ 1.0 III (~-3 3) [5 pts]	IVIAX-50
COMMENTS	AVERAGE BANKFULL WIDT	H (Feet): 1.00 5
RIPARIAN ZONE AND FLOODP	This information must also be completed LAIN QUALITY ☆NOTE: River Left (L) and Right (R) as lool	ring dayunatraam-A
RIPARIAN WIDTH	FLOODPLAIN QUALITY	ang downstream &
L R (Per Bank)	L R (Most Predominant per Bank) L R	
Wide >10m		onservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old	rban or Industrial
✓ ✓ Narrow <5m		pen Pasture, Row Crop
None		lining or Construction
COMMENTS	i enced i asture	ining of Constituction
FLOW DECIME (ALTER AS A	(Charle ONLY are how)	
FLOW REGIME (At Time of Evalued Stream Flowing	uation) (Check ONLY one box): Moist Channel, isolated pools	no flow (Intermittent)
Subsurface flow with isolated pool		,
COMMENTS current precip		
SINUOSITY (Number of bends pe	er 61 m (200 ft) of channel) (Check ONLY one box):	
None		2.0
	1.0	3.0
✓ 0.5	1.5	>3
✓ 0.5	1.5	

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: CWH Name: EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Amsterdam	NRCS Soil Map Page: NRCS Soil Map Stream Order
laffa ya a ya	ship / City: Springfield
MISCELLANEOUS	silp / City
Base Flow Conditions? (Y/N): Y Date of last precipitation:	02/12/19 Quantity: 1.07
Photograph Information: 3 photos, upstream, downstream, substr	ate
Elevated Turbidity? (Y/N): N Canopy (% open): 5%	6
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) 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 dat Fish Observed? (Y/N) 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) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N
	OF STREAM REACH (This <u>must</u> be completed): or site evaluation and a narrative description of the stream's location
TLine TLine	



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 64

Date:

February 13, 2019

Description:

Intermittent

Ephemeral Stream

Facing Upstream



Stream 64

Date:

February 13, 2019

Description:

Intermittent

Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 64

Date:

February 13, 2019

Description:

Intermittent

Ephemeral Stream





ChieFP Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line / Jefferson County	
hh-aeh-021319-04 SITE NUMBER 04 RIVER BASIN DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) 200 LAT. 40.43648 LONG80.90695 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER JTT, AEH COMMENTS ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING CHANNEL CHANNEL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED CHANNEL CHANNEL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED CHANNEL CHANNEL CHANNEL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED CHANNEL	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	. uuci
(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] BEDROCK [16 pt] DW LEAF PACK/WOODY DEBRIS [3 pts] 10% FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts]	Max = 40
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ O%	8
Total of Percentages of Occur (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock Check	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 Dept Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH (Inches): 2.00	
3 BANK FULL WIDTH (Massured as the average of 3.4 measurements) (Check ONLY one box):	Rankfull
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] > 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]	
> 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] > 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
> 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 ☆	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 ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH 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) 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 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 Moderate 5-10m NOTE: River Left (L) and Right (R) as looking downstream Conservation Tillage Immature Forest, Wetland 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] > 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] > 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 FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS nearby landfill, tline ROW, pipeline ROW Nining or Construction COMMENTS nearby landfill, tline ROW, pipeline ROW	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 Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Residential, Park, New Field Fenced Pasture COMMENTS Mining or Construction COMMENTS nearby landfill, tline ROW, pipeline ROW 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] > 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 Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cr None Residential, Park, New Field Mining or Construction COMMENTS nearby landfill, tline ROW, pipeline ROW 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 L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cr None COMMENTS Residential, Park, New Field 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] > 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 Moderate 5-10 m Mone COMMENTS Residential, Park, New Field Open Pasture, Row Cr None COMMENTS Mining or Construction COMMENTS Conservation (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Current precip SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	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 AVERAGE BANKFULL WIDTH 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 Residential, Park, New Field Open Pasture, Row Cr None COMMENTS nearby landfill, tline ROW, pipeline ROW FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS current precip SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3	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 Moderate 5-10 m Mone COMMENTS Residential, Park, New Field Open Pasture, Row Cr None COMMENTS Mining or Construction COMMENTS Conservation (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Current precip SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	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: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Amsterdam NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Jefferson Township / City: Springfield
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 02/12/19 Quantity: 1.07
Photograph Information: 3 photos, upstream, downstream, substrate
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 (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
BIOTIC EVALUATION
N N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N)
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
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Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N
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Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N
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Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N



STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 65

Date:

February 13, 2019

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 65

Date:

February 13, 2019

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 65

Date:

February 13, 2019

Description:

Ephemeral

Modified Ephemeral Stream



Stream 66



Primary Headwater Habitat Evaluation Form

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

19

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line / Harrison County	
hh-aeh-20190219-5 SITE NUMBER 5 RIVER BASIN DRAINAGE AR	REA (mi²) 0.16
	ER MILE
DATE 02/13/19 SCORER AEH/JTT COMMENTS Intermittent	
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 COMMODIFICATIONS: Culverted	DR NO RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYF	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & TYPE PERCENT BLDR SLABS [16 pts] TYPE SILT [3 pt] SILT [3 pt] 35%	ENT Metric
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 5%	
BEDROCK [16 pt]	May = 40
COBBLE (65-256 mm) [12 pts]	6
SAND (<2 mm) [6 pts] 5% ARTIFICIAL [3 pts] 0%	9
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) Substrate Percentage Check 100%	3) A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES	s: 6
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the tire	me 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]	Wax = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22 5 cm [25 nts] NO WATER OR MOIST CHANNEL [0 nts]	5
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches	5
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches	S): 1.00
Pocent heavy rain	
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches 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]	Bankfull
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches 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 Max=30
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches 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] (Inches	Bankfull Width Max=30
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches 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	Bankfull Width Max=30 5
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inchest)	Bankfull Width Max=30 5
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches	Bankfull Width Max=30 5t): 1.00 5
AVERAGE BANKFULL WIDTH Recent heavy rain MAXIMUM POOL DEPTH (Inchest	Bankfull Width Max=30 5 Stream A on Tillage
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 (<=3' 3") [5 pts] > 1.5 m - 3.0 m (<=3' 3") [5 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH Riparian Width FLOODPLAIN QUALITY	Bankfull Width Max=30 5 Stream A on Tillage
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches	Bankfull Width Max=30 5 Stream & Stream &
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 (<=3' 3") [5 pts] > 1.5 m - 3.0 m (<=3' 3") [5 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH Riparian Width FLOODPLAIN QUALITY	Bankfull Width Max=30 5 Stream & Stream &
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches	Bankfull Width Max=30 5 Stream & on Tillage dustrial ure, Row Crop construction
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches Stream Flowing None COMMENTS Comments MAXIMUM POOL DEPTH (Inches Maximum Pool Dex Maximum Pool Dex Maximum Pool Dex Maximum Pool Depth (Inches Maximum Pool Depth Maximum Pool Depth (Inches Maximum Pool Depth Maximum Pool Depth (Inches Maximum Pool Depth Pool Depth (Inches Maximum Pool Depth Pool Dept	Bankfull Width Max=30 5 Stream & on Tillage dustrial ure, Row Crop construction
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches Stream Flowing MAXIMUM POOL DEPTH (Inches MAXIMUM POOL DEX MAXIMUM POOL DEPTH (Inches MAXIM	Bankfull Width Max=30 5 Stream & on Tillage dustrial ure, Row Crop construction
AVERAGE BANKFULL WIDTH (Resured as the average of 3-4 measurements) (Check ONLY one box): 3. 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 5 Stream & on Tillage dustrial ure, Row Crop construction
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches 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] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] XVERAGE BANKFULL WIDTH (Feet RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downs RIPARIAN WIDTH FLOODPLAIN QUALITY MOTE: River Left (L) and Right (R) as looking downs RIPARIAN WIDTH FLOODPLAIN QUALITY Moterate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture Open Pasture COMMENTS Fenced Pasture Mining or Comment Moderate flow with isolated pools (Interstitial) COMMENTS Recent heavy rain Moderate flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS Recent heavy rain Maximum processing the surface of the sur	Bankfull Width Max=30 5 Stream & on Tillage dustrial ure, Row Crop construction
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches Comments) Check ONLY one box):	Bankfull Width Max=30 5 Stream & on Tillage dustrial ure, Row Crop construction
COMMENTS Recent heavy rain MAXIMUM POOL DEPTH (Inches Inches Inch	Bankfull Width Max=30 5 Stream & on Tillage dustrial ure, Row Crop construction

ADDITIONAL STREAM INFORMATION (This Information Must Also be	pe Completed):		
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed C	QHEI Form)	
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: EWH Name:	Distance from	n Evaluated Stream Evaluated Stream Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENT	IRE WATERSHED AREA. CLEAR	LY MARK THE SITE LOC	ATION
USGS Quadrangle Name: Amsterdam	NRCS Soil Map Page: N	RCS Soil Map Stream O	rder
County: Jefferson Townshi	ip / City: Springfield		
MISCELLANEOUS			
Base Flow Conditions? (Y/N): N Date of last precipitation:	12/12/19 Quantity:_	1.07	
Photograph Information: 3 photos, upstream, downsteam, substrate			
Elevated Turbidity? (Y/N): N Canopy (% open): 60%			
Were samples collected for water chemistry? (Y/N): N (Note lab s	sample no. or id. and attach result	s) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conduc	tivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) If not, p	lease 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 of ID number. Include appropriate field data is Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquation Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION Of Include important landmarks and other features of interest for several contents.	sheets from the Primary Headwater served? (Y/N) N Voucher? (Macroinvertebrates Observed? (Habitat Assessment Manu (/N) N Voucher? (Y/N) M M Must be complete	al) N
include important landmarks and outer readures of interest for s		somption of the stream.	
	site evaluation and a namative de		stream aeh-0
FLOW	site evaluation and a managed de		



PHOTOGRAPHIC RECORD **STREAMS**

AEP

Gable-Carrollton 138 kV Tranmission Line Project

Site Location:

Project No. 60582598

Stream 66

Client Name:

Date:

February 13, 2019

Description:

Intermittent

Ephemeral Stream

Facing Upstream



Stream 66

Date:

February 13, 2019

Description:

Intermittent

Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 66

Date:

February 13, 2019

Description:

Intermittent

Ephemeral Stream





58

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line / Jefferson County	
hh-aeh-021319-06 SITE NUMBER 06 RIVER BASIN DRAINAGE AREA (mi²)	39
LENGTH OF STREAM REACH (ft) 200 LAT. 40.43217 LONG80.90371 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER JTT, AEH COMMENTS Perennial	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS: Channelized	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]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]	Substrate
□ □ BEDROCK [16 pt] 0% □ FINE DETRITUS [3 pts] 0% □ □ COBBLE (65-256 mm) [12 pts] □ □ CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] MUCK [0 pts]	13
SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]	
Total of Percentages of 20.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 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 Depti
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] 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):	
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]	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
> 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 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): 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 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, 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]	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] > 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): 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 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 Field Open Pasture, Row Crop None Residential, Park, New Field Open Pasture, Row Crop None Fenced Pasture 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 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 Narrow <5m None Residential, Park, New Field Flood Regime (At Time of Evaluation) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] Substituting the position of the pos	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 WIDTH FLOODPLAIN QUALITY Nature Forest, Wetland Wide >10 m Mature Forest, Wetland Mature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5 m Residential, Park, New Field Open Pasture, Row Cropped Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Nore 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" - 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	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 WIDTH FLOODPLAIN QUALITY Nature Forest, Wetland Wide >10 m Mature Forest, Wetland Mature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5 m Residential, Park, New Field Open Pasture, Row Cropped Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Nore 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" - 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 >10m Mature Forest, Wetland Moderate 5-10m 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):	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 Wide >10 m Mature Forest, Shrub or Old 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) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 AVERAGE BANKFULL WIDTH (Feet): 6.00 AVERAGE BANKFUL	Width Max=30

ADDITIONAL STREAM INFOR	MATION (This Information Must Also	o be Completed):		
QHEI PERFORMED?	Yes No QHEI Score	(If Yes, Attach Comple	ted QHEI Form)	
DOWNSTREAM DES	GIGNATED USE(S)			
WWH Name:		_ Distance	e from Evaluated Stream	
CWH Name:			from Evaluated Stream _	
EWH Name:		Distance	from Evaluated Stream _	
	COPIES OF MAPS, INCLUDING THE E	NTIRE WATERSHED AREA. CI	EARLY MARK THE SITE LOCATION	N
USGS Quadrangle Name: Ams	sterdam	NRCS Soil Map Page:	NRCS Soil Map Stream Order	
County: Jefferson	Towns	ship / City: Springfield		
MISCELLANEOUS				
Base Flow Conditions? (Y/N):_	Y Date of last precipitation:	02/12/19 Quan	ity: 1.07	
Photograph Information:				
Elevated Turbidity? (Y/N): N	Canopy (% open): 70 °	%		
Were samples collected for wat	er 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.) Co	nductivity (µmhos/cm)	
Is the sampling reach represent	ative of the stream (Y/N) Y	, please explain:		
Additional comments/description	n of pollution impacts:			
	eam Banks (check one): Stable	Moderately Stable	Unstable	
DIOTIO EVALUATIO				
	(If Yes, Record all observations. Vouche ID number. Include appropriate field dat	a sheets from the Primary Head	vater Habitat Assessment Manual) er? (Y/N)	th the sit
Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Observed? ((If Yes, Record all observations. Vouche ID number. Include appropriate field dat	a sheets from the Primary Heady Observed? (Y/N) Vouch	vater Habitat Assessment Manual) er? (Y/N)	th the sit
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology:	(If Yes, Record all observations. Vouche ID number. Include appropriate field dat	a sheets from the Primary Heads Dbserved? (Y/N) N Vouch tic Macroinvertebrates Observe	vater Habitat Assessment Manual) er? (Y/N) N ed? (Y/N) N Voucher? (Y/N)	th the sit
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology:	(If Yes, Record all observations. Vouche ID number. Include appropriate field dat Voucher? (Y/N) N Salamanders CY/N) N Voucher? (Y/N) N Aqua	a sheets from the Primary Heads Observed? (Y/N) Vouch Itic Macroinvertebrates Observe	water Habitat Assessment Manual) er? (Y/N) N Voucher? (Y/N) N Fhis must be completed):	
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology:	(If Yes, Record all observations. Voucher ID number. Include appropriate field dat Voucher? (Y/N) Salamanders CY/N) N Voucher? (Y/N) N Aqua	a sheets from the Primary Heads Observed? (Y/N) Vouch Itic Macroinvertebrates Observe	water Habitat Assessment Manual) er? (Y/N) N Voucher? (Y/N) N Fhis must be completed): we description of the stream's loca	
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observed? ('Comments Regarding Biology: DRAWING ANI	(If Yes, Record all observations. Voucher ID number. Include appropriate field dat Voucher? (Y/N) Salamanders CY/N) N Voucher? (Y/N) N Aqua	a sheets from the Primary Heads N Vouch tic Macroinvertebrates Observe OF STREAM REACH (*)	water Habitat Assessment Manual) er? (Y/N) N Voucher? (Y/N) N Fhis must be completed): we description of the stream's loca	



Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 67

Date:

February 13, 2019

Description:

Perennial

Small Drainage Warmwater Stream

Facing Upstream



Stream 67

Date:

February 13, 2019

Description:

Perennial

Small Drainage Warmwater Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 67

Date:

February 13, 2019

Description:

Perennial

Small Drainage Warmwater Stream





SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line / Jefferson County	
hh-aeh-021319-07 SITE NUMBER 07 RIVER BASIN DRAINAGE AREA (mi²)	.24
LENGTH OF STREAM REACH (ft) 200 LAT. 40.42508 LONG80.89836 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER JTT, 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 REC MODIFICATIONS: Channelized, deforested	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] D'A CLAY or HARDPAN [0 pt]	HHEI Metric Points Substrate Max = 40
☐ GRAVEL (2-64 mm) [9 pts]	8
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock ORDER OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 Substrate Percentage 100% TOTAL NUMBER OF SUBSTRATE TYPES: 2	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):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	15
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] > 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): 1.00	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 Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crown 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) COMMENTS The property of the control of the c	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): None 0.5 1.0 2.0 3.0 3.0 >3.0 >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/10	00 ft)

	Yes ✓ No QHEI Score _	(If Yes, Att	ach Completed QHI	=i Form)	
DOWNSTREAM DESIGNA	TED USE(S)				
WWH Name:			=	valuated Stream	
CWH Name:				valuated Stream _	
EWH Name:			Distance from Ev	/aluated Stream _	
	S OF MAPS, INCLUDING THE	E <u>ENTIRE</u> WATERSHE	D AREA. CLEARLY	MARK THE SITE LOCA	ATION
JSGS Quadrangle Name: Amsterda	ım	NRCS Soil Map	Page: NRC	S Soil Map Stream Or	der
County: Jefferson	То	wnship / City: Sprin	gfield		
MISCELLANEOUS					
Base Flow Conditions? (Y/N):Y	_ Date of last precipitation:_	02/12/19	Quantity:	1.07	
Photograph Information: _					
Elevated Turbidity? (Y/N):	Canopy (% open):	80%			
Were samples collected for water che	N		and attack or sult V	Lab Numbar	
vere samples collected for water che	emistry? (Y/N): (Note	e lab sample no. or id.	and attach results)	Lab Number:	
Field Measures: Temp (°C)	Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivi	ty (µmhos/cm)	
s the sampling reach representative	of the stream (Y/N)	not, please explain:			
A didition of a management /d a societion of a	alledian incorpoda.				
Diverall Stability of BOTH Stream B	anks (check one): Stable		ately Stable	Unstable	and with the cite
Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) N Voucl Frogs or Tadpoles Observed? (Y/N)	s, Record all observations. Vounber. Include appropriate field	cher collections option	al. NOTE: all vouche rimary Headwater Ha	r samples must be label bitat Assessment Manua	al)
Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) N Voucl Frogs or Tadpoles Observed? (Y/N)	s, Record all observations. Vounber. Include appropriate field	ocher collections option data sheets from the Pers Observed? (Y/N)	al. NOTE: all vouche rimary Headwater Ha	r samples must be label bitat Assessment Manua	al)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) Voucl Frogs or Tadpoles Observed? (Y/N)	s, Record all observations. Vounber. Include appropriate field	ocher collections option data sheets from the Pers Observed? (Y/N)	al. NOTE: all vouche rimary Headwater Ha	r samples must be label bitat Assessment Manua	al)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) Voucl Frogs or Tadpoles Observed? (Y/N)	s, Record all observations. Vounber. Include appropriate field	ocher collections option data sheets from the Pers Observed? (Y/N)	al. NOTE: all vouche rimary Headwater Ha	r samples must be label bitat Assessment Manua	al)
BIOTIC EVALUATION Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology:	s, Record all observations. Vounber. Include appropriate field	rcher collections option data sheets from the P rs Observed? (Y/N) quatic Macroinvertebre	al. NOTE: all vouche rimary Headwater Ha Voucher? (Y/N ates Observed? (Y/N	r samples must be label bitat Assessment Manua N N Voucher? (Y/N	n) N
BIOTIC EVALUATION Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology:	s, Record all observations. Vounber. Include appropriate field her? (Y/N) Salamander Voucher? (Y/N) N A	ocher collections option data sheets from the P rs Observed? (Y/N) quatic Macroinvertebra	al. NOTE: all vouche rimary Headwater Ha Voucher? (Y/N ates Observed? (Y/N	r samples must be label bitat Assessment Manual) N Voucher? (Y/N	i):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND NA Include important landmarks a	s, Record all observations. Vounber. Include appropriate field her? (Y/N) Salamander Voucher? (Y/N) N A	ocher collections option data sheets from the P rs Observed? (Y/N) quatic Macroinvertebra	al. NOTE: all vouche rimary Headwater Ha Voucher? (Y/N ates Observed? (Y/N	r samples must be label bitat Assessment Manual) N Voucher? (Y/N	i):
BIOTIC EVALUATION Performed? (Y/N): N (If Yes ID nur Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND NA Include important landmarks a	s, Record all observations. Vounber. Include appropriate field her? (Y/N) Salamander Voucher? (Y/N) N A	cher collections option data sheets from the Prs Observed? (Y/N) quatic Macroinvertebra	al. NOTE: all vouche rimary Headwater Ha Voucher? (Y/N ates Observed? (Y/N	r samples must be label bitat Assessment Manual) N Voucher? (Y/N	i):
Performed? (Y/N): N (If Yes ID nur N Voucing Fish Observed? (Y/N) Voucing Frogs or Tadpoles Observed? (Y/N) Comments Regarding Biology: DRAWING AND NA	s, Record all observations. Vounber. Include appropriate field her? (Y/N) Salamander Voucher? (Y/N) N A	cher collections option data sheets from the Prs Observed? (Y/N) quatic Macroinvertebra	al. NOTE: all vouche rimary Headwater Ha Voucher? (Y/N ates Observed? (Y/N REACH (This mandal anarrative desc	r samples must be label bitat Assessment Manual) N Voucher? (Y/N	i):



Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 68

Date:

February 13, 2019

Description:

Intermittent

Modified Ephemeral Stream

Facing Upstream



Stream 68

Date:

February 13, 2019

Description:

Intermittent

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 68

Date:

February 13, 2019

Description:

Intermittent

Modified Ephemeral Stream





SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line	
hh-aeh-021219-06 SITE NUMBER 06 RIVER BASIN	DRAINAGE AREA (mi²) 0.90
LENGTH OF STREAM REACH (ft) 200 LAT. 40.41884 LONG80.89403 RIVER CO	
DATE 02/12/19 SCORER JTT, AEH COMMENTS intermittent	
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 RECOVER MODIFICATIONS: Farmland, cow pasture, culverted	RING RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predor	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score TYPE PERCENT TYPE	PERCENT Metric
BLDR SLABS [16 pts] 0% SILT [3 pt]	95% Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]	0% Substrate
COBBLE (65-256 mm) [12 pts]	0% Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts]	0% 8
Table (Percentage of (A)	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check 100%	(B) A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF S	SUBSTRATE TYPES: 2
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one book of the control of the con	
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Wax - 30
> 22.5 - 30 cm [30 pts]	HANNEL [0 pts] 25
COMMENTS MAXIMUM POOL D	
	FPTH (Inches): 6.00
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4'	Y one box): Bankfull
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Y one box): Bankfull
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts]	Y one box): 8") [15 pts] Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Y one box): 8") [15 pts] Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts]	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts]	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 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 RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 5 (R) as looking downstream ☆
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 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 RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 5 (R) as looking downstream☆ R Conservation Tillage
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 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 RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 CR) as looking downstream ☆ R Conservation Tillage Urban or Industrial
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 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 RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Moderate 5-10m Residential, Park, New Field	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 5 (R) as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Crop
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 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 RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 5 (R) as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
SANK FULL WIDTH (Measured as the average of 3-4 measurements) Check ONL	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 5 (R) as looking downstream☆ Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts] > 1.0 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 RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 KR) as looking downstream Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction is no mature forest Cated pools, no flow (Intermittent)
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 4.0 meters (> 13') [30 pts]	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 KR) as looking downstream Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction is no mature forest Cated pools, no flow (Intermittent)
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 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 RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Wide >10 m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS banks of stream are primarily within low quality wetland. There FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS current precip SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 Keet State
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL > 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 RIPARIAN WIDTH ELOODPLAIN QUALITY Wide >10 m (See Superior of See Superior of Se	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 KR) as looking downstream Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction is no mature forest Cated pools, no flow (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 ANOTE: River Left (L) and Right RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS banks of stream are primarily within low quality wetland. There FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS current precip SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): Check ONLY one box):	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 Keet 1: 2.00 Keet 2: 2.00 Keet 3: 2.00
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 L R (Per Bank) Wide >10 m Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Narrow <5 m Residential, Park, New Field None COMMENTS banks of stream are primarily within low quality wetland. There FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS current precip SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 2.0 2.5	Y one box): 8") [15 pts] Bankfull Width Max=30 JLL WIDTH (Feet): 2.00 Keet 1: 2.00 Keet 2: 2.00 Keet 3: 2.00

	IED? - Yes ✓ No QHEI Score	e (If Yes, Attach Comple	eted QHEI Form)
WWH Name:	DESIGNATED USE(S)	Distanc	e from Evaluated Stream
CWH Name:			e from Evaluated Stream _
EWH Name:		Distance	e from Evaluated Stream _
	ACH COPIES OF MAPS, INCLUDING	THE ENTIRE WATERSHED AREA. C	LEARLY MARK THE SITE LOCAT
USGS Quadrangle Name:_	Amsterdam	NRCS Soil Map Page:	NRCS Soil Map Stream Orde
County: Harrison		Township / City: German	
MISCELLANEOU	us		
Base Flow Conditions? (Y/I	N):Y Date of last precipitation	n: 02/11/19 Quar	ntity: 0.16
Photograph Information:			
Elevated Turbidity? (Y/N):	N Canopy (% open):	90%	
Were samples collected fo	r water chemistry? (Y/N): N (N	lote lab sample no. or id. and attach	results) Lab Number:
Field Measures: Temp (pH (S.U.) C	onductivity (µmhos/cm)
•	esentative of the stream (Y/N)		<u> </u>
is the sampling reach tepre	esentative of the sitediff (T/N)	ii not, picase explaili	
Additional comments/descr	ription of pollution impacts: Stream Banks (check one): Stab		
BIOTIC EVALUATION N	(If Yes, Record all observations. \	/oucher collections optional. NOTE: a	Il voucher samples must be labeled
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)	Voucher collections optional. NOTE: a eld data sheets from the Primary Head	Il voucher samples must be labeled lwater Habitat Assessment Manual) ner? (Y/N)
Performed? (Y/N): N Fish Observed? (Y/N)	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N	/oucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N)	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N)
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N	/oucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N)	Il voucher samples must be labeled lwater Habitat Assessment Manual) ner? (Y/N)
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N	/oucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N)	Il voucher samples must be labeled lwater Habitat Assessment Manual) ner? (Y/N)
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biolo	(If Yes, Record all observations. \\ ID number. Include appropriate fie Voucher? (Y/N) N Salaman Voucher? (Y/N) N Ogy:	Voucher collections optional. NOTE: a cold data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observente	Ill voucher samples must be labeled lwater Habitat Assessment Manual) her? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biolo DRAWING	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) N Salaman ed? (Y/N) N Voucher? (Y/N) N ogy: AND NARRATIVE DESCRIP	Joucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observed.	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N) Voucher? (Y/N) This must be completed):
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biolo asture DRAWING	(If Yes, Record all observations. \\ ID number. Include appropriate fix Voucher? (Y/N) N Salaman ed? (Y/N) N Voucher? (Y/N) N ogy:	Joucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observed.	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N) Voucher? (Y/N) This must be completed):
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biologous Asture DRAWING Include important la	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) N Salaman ed? (Y/N) N Voucher? (Y/N) N ogy: AND NARRATIVE DESCRIP	Joucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observed.	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N) Voucher? (Y/N) This must be completed):
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biolo Asture DRAWING	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) N Salaman ed? (Y/N) N Voucher? (Y/N) N ogy: AND NARRATIVE DESCRIP	Joucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observed.	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N) N Voucher? (Y/N) This must be completed): tive description of the stream's location.
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biolo Asture DRAWING Include important la	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) N Salaman ed? (Y/N) N Voucher? (Y/N) N ogy: AND NARRATIVE DESCRIP	Joucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observed.	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N) N Voucher? (Y/N) This must be completed): tive description of the stream's location.
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Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biolo Asture DRAWING Include important la	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) N Salaman ed? (Y/N) N Voucher? (Y/N) N ogy: AND NARRATIVE DESCRIP	Joucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observed.	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N) N Voucher? (Y/N) This must be completed): tive description of the stream's location.
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biolo Asture DRAWING Include important la	(If Yes, Record all observations. \ ID number. Include appropriate fie Voucher? (Y/N) N Salaman ed? (Y/N) N Voucher? (Y/N) N ogy: AND NARRATIVE DESCRIP	Joucher collections optional. NOTE: a eld data sheets from the Primary Head ders Observed? (Y/N) N Vouch Aquatic Macroinvertebrates Observed.	Il voucher samples must be labeled water Habitat Assessment Manual) ner? (Y/N) N Voucher? (Y/N) This must be completed): tive description of the stream's location.



Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 69

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream

Facing Upstream



Stream 69

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 69

Date:

February 12, 2019

Description:

Intermittent

Modified Small Drainage Warmwater Stream





28	

SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line / Harrison County	
hh-aeh-021319-08 SITE NUMBER 08 RIVER BASIN DRAINAGE AREA (mi²) 0.	10
LENGTH OF STREAM REACH (ft) 100 LAT. 40.41093 LONG80.88795 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER JTT, AEH COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	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]	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] 10% ☐ MUCK [0 pts] 0% SAND (<2 mm) [6 pts]	8
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 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 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]	IWIAX - 30
> 22.5 - 30 cm [30 pts]	15
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] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull 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
	<u> </u>
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 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 Field Open Pasture, Row Cro	р
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	р
Onen Pasture Pow Cro	p
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro None Fenced Pasture Mining or Construction	
None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
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) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
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) COMMENTS Residential, Park, New Field Mining or Construction Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	

ADDITIONAL STREAM INFORMATION (This Information Must Als	o be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Comple	ted QHEI Form)	
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: EWH Name:	Distance	e from Evaluated Stream from Evaluated Stream from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE $\underline{\textbf{E}}$	NTIRE WATERSHED AREA. CI	LEARLY MARK THE SITE LOCA	ΓΙΟΝ
USGS Quadrangle Name: Amsterdam	NRCS Soil Map Page:	NRCS Soil Map Stream Ord	er
County: Harrison Town	ship / City: German		
MISCELLANEOUS			
Base Flow Conditions? (Y/N): Y Date of last precipitation:	02/12/19 Quant	tity: 1.07	
Photograph Information:			
Elevated Turbidity? (Y/N): N Canopy (% open): 09	6		
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.) Co	onductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) Y If not	, please explain:		
	 		
Additional comments/description of pollution impacts:			
Additional comments/description of pollution impacts: Overall Stability of BOTH Stream Banks (check one): Stable	Moderately Stable	Unstable	
Overall Stability of BOTH Stream Banks (check one): Stable BIOTIC EVALUATION Performed? (Y/N): (If Yes, Record all observations. Vouch ID number. Include appropriate field date of the property of the pro	er collections optional. NOTE: all a sheets from the Primary Headv	I voucher samples must be labeled water Habitat Assessment Manual er? (Y/N)	
Overall Stability of BOTH Stream Banks (check one): Stable BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Vouch ID number. Include appropriate field date of the property of the pr	er collections optional. NOTE: all a sheets from the Primary Headw Observed? (Y/N) N Vouche tic Macroinvertebrates Observe	I voucher samples must be labeled water Habitat Assessment Manual er? (Y/N) N Voucher? (Y/N)	N N



Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 70

Date:

February 13, 2019

Description:

Ephemeral

Modified Ephemeral Stream

Facing Upstream



Stream 70

Date:

February 13, 2019

Description:

Ephemeral

Modified Ephemeral Stream





STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 70

Date:

February 13, 2019

Description:

Ephemeral

Modified Ephemeral Stream





SITE NAME/LOCATION AEP Carrollton-Gable 138 kV Transmission Line / Harrison County	
hh-aeh-021319-09 SITE NUMBER 09 RIVER BASIN DRAINAGE AREA (mi²)	0.15
LENGTH OF STREAM REACH (ft) 200 LAT. 40.41021 LONG80.88755 RIVER CODE RIVER MILE	
DATE 02/13/19 SCORER JTT, AEH COMMENTS Intermittent	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO R MODIFICATIONS: Channelized	ECOVERY
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] 20% MUCK [0 pts] 0%	IVIAX - 40
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0%	15
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 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]	25
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] > 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] \(\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] > 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): 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): 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 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] ≥ 1.5 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] > 1.5 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 And RIPARIAN WIDTH L R (Per Bank) Wide >10 m Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10 m Narrow <5 m Residential, Park, New Field Open Pasture, Row	Width Max=30 5
> 4.0 meters (> 13') [30 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 ANOTE: River Left (L) and Right (R) as looking downstream 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 Narrow <5 m None COMMENTS Stream eventually flows towards more open canopy FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	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): 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 L R (Per Bank) L R (Most Predominant per Bank) L R (Per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature Forest, Shrub or Old Immature Forest, Now Field Open Pasture, Row None Residential, Park, New Field Mining or Construction COMMENTS Stream eventually flows towards more open canopy	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 ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row None COMMENTS Stream eventually flows towards more open canopy FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitte	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 ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS Stream eventually flows towards more open canopy 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 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 RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Wide >10 m Mature Forest, Wetland Narrow <5 m Narrow <5 m Narrow <5 m Residential, Park, New Field None COMMENTS Stream eventually flows towards more open canopy 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] 2.00 AVERAGE BANKFULL WIDTH (Feet): AVERAGE BANKFULL WIDTH (Feet): 2.00 AVERAGE BANKFULL WIDTH (Feet): 2.00 AVERAGE BANKFULL WIDTH (Feet): 4.00 AVERAGE BANKFULL WIDTH (Feet):	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 L R (Per Bank) Wide >10m Mature Forest, Wetland Narrow <5m Narrow <5m Residential, Park, New Field Narrow <5m None Fenced Pasture COMMENTS Stream eventually flows towards more open canopy 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): Check	Width Max=30 5
> 4.0 meters (> 13') [30 pts]	Width Max=30 5 Crop on ent)

	MED? - Yes ✓ No QHEI Score	(If Yes, Atta	·		
DOWNSTREAM WWH Name:	DESIGNATED USE(S)		Distance from Eva	aluated Stroom	
CWH Name:			Distance from Eva		
EWH Name:			Distance from Eva	luated Stream	
MAPPING: ATT	ACH COPIES OF MAPS, INCLUDING T	THE <u>ENTIRE</u> WATERSHEI	DAREA. CLEARLY N	MARK THE SITE LOCA	TION
USGS Quadrangle Name:	Amsterdam	NRCS Soil Map F	Page: NRCS	S Soil Map Stream Ord	er
County: Harrison		Township / City: Germa			
•		Township / Oicy			-
MISCELLANEO	V	02/12/19		1.07	
Base Flow Conditions? (Y/	(N):_ Date of last precipitation	1: 02/12/19	_ Quantity:	1.07	
Photograph Information: _					
Elevated Turbidity? (Y/N):	N Canopy (% open):	50%			
Were samples collected for	or water chemistry? (Y/N): N (N	lote lab sample no. or id.	and attach results) La	ab Number:	
Field Measures: Temp	(°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivity	(µmhos/cm)	
•		,		(I)	
is the sampling reach repr	esentative of the stream (Y/N)	If not, please explain:			
-					
Additional comments/desc	ription of pollution impacts:				
	ATION (If Yes, Record all observations. V	oucher collections optiona			
Overall Stability of BOTH	ATION (If Yes, Record all observations. V ID number. Include appropriate fie Voucher? (Y/N) N Voucher? (Y/N) N	oucher collections optiona	II. NOTE: all voucher simary Headwater Habi	samples must be labeled tat Assessment Manual	
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observ	ATION (If Yes, Record all observations. V ID number. Include appropriate fie Voucher? (Y/N) N Voucher? (Y/N) N	/oucher collections optionalleld data sheets from the Production of the Production o	II. NOTE: all voucher simary Headwater Habi	samples must be labeled tat Assessment Manual)
Overall Stability of BOTH BIOTIC EVALU Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observ Comments Regarding Biol	ATION (If Yes, Record all observations. V ID number. Include appropriate fie Voucher? (Y/N) N Voucher? (Y/N) N	/oucher collections optiona eld data sheets from the Pr ders Observed? (Y/N) Aquatic Macroinvertebra	II. NOTE: all voucher simary Headwater Habi Voucher? (Y/N) Ites Observed? (Y/N)	samples must be labeled tat Assessment Manual N Voucher? (Y/N)	N
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observ Comments Regarding Biol	ATION (If Yes, Record all observations. VID number. Include appropriate field Voucher? (Y/N) Salamand (Y/N) NID Voucher? (Y/N)	/oucher collections optional eld data sheets from the Proders Observed? (Y/N) Aquatic Macroinvertebra	II. NOTE: all voucher strimary Headwater Habi Voucher? (Y/N) Ites Observed? (Y/N)	samples must be labeled tat Assessment Manual N N Voucher? (Y/N)	N
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STREAMS

Client Name:

Site Location:

Project No.

AEP

Gable-Carrollton 138 kV Tranmission Line Project

60582598

Stream 71

Date:

February 13, 2019

Description:

Intermittent

Small Drainage Warmwater Stream

Facing Upstream



Stream 71

Date:

February 13, 2019

Description:

Intermittent

Small Drainage Warmwater Stream



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Commission of Ohio Docketing Information System on

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in

Case No(s). 21-0900-EL-BLN

Summary: Letter of Notification Letter of Notification Letter of Notification LON application for the Tidd-Sunnyside 138 kV Transmission Line Rebuild Project pages 1901-2100 electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc.